



**Food and Agriculture Organization  
of the United Nations**

## **The implementation of fishing e-logbook for small-scale fisheries in Indonesia**

**Report of  
Enabling transboundary cooperation for sustainable  
management of the Indonesian seas (ISLME project)  
GEF/FAO project no: GCP/RAS/289/GFF**



**GLOBAL ENVIRONMENT FACILITY**  
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Destructive Fishing Watch - Indonesia

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## Abbreviations and acronyms

ABK/AKP	: Fisherman / Fisherman Crews (Fishing Vessel Crew)
BBM	: Fuel Oil
DFW	: Destructive Fishing Watch
Dirjen	: Director General
Ditjen	: Directorate General
DJPT	: Directorate General of Capture Fisheries
DKP	: Marine and Fisheries Local Agencies
E-logbook	: Electronic logbook
FAO	: Food and Agriculture Organization
GT	: Gross Tonnage
HAM	: Human Rights
HNPP	: Fishermen and Fishermen Entrepreneurs Association
Ir.	: Engineer
ISLME	: The Indonesian Seas Large Marine Ecosystem
KKP/MMAF	: Ministry of Marine Affairs and Fisheries
LBPI	: Fishing Logbook
M.Si	: Master of Science
NPO	: National Project Officer
OOC	: Our Ocean Conference
PerDirjen	: The Regulation of Director General
PER-DJPT	: The Regulation of Directorate General of Capture Fisheries
Permen	: Minister Regulation
Permen KP	: The Regulation of Marine Affairs and Fisheries Minister
PPI	: Landing Fish Port
PPN	: Nusantara Fisheries Port
PPP	: Coastal Fishery Port
PPS	: Ocean Fishing Port
PSDI	: Fish Resources Management
PSPB	: Large Pelagic Ring Trawl
PSPK	: Purse Seine Small Pelagic
Q&A	: Questions and Answers
S.Kel	: Marine Bachelor
SD	: Primary school
SDA	: Natural Resources
SDI	: Fish Resources
SDM	: Human Resources
SHTI	: Fish Catch Certificate
SILOPI	: Fishing Logbook Information System
SIPI	: Fishing Permit
SKPI	: Fish Landing Certificate
ST	: Engineer Bachelor
Syahbandar	: Fishing Port Officer
UPT	: Technical Services Unit
UU	: Law
WA	: Whatsapp
WPP	: Fisheries Management Area

## Executive summary

- E1. The support provided by ISLME FAO through GCP/RAS/289/GFF ISLME aims to strengthen the capacity and capabilities of Fishermen and local government staff in implementing a fishing Logbook for small-scale fisheries in selected pilot areas, namely Indramayu, Cirebon, Cilacap, Pati, Lamongan and Probolinggo. The rapid assessment has been carried out in Indramayu and found the issue of the low use of E-Logbook caused by the lack of internet infrastructure facilities by PPI management. On the other hand, dissemination related to e-logbooks within the fishing environment is still minimal by the government. Through this project, an e-logbook manual has been successfully compiled to facilitate and expand the reach of e-logbook users for fishermen.
- E2. The project has also conducted capacity building training for 226 fishermen and local government officials. This realization was 226 percent higher than the target set of 100 people. Furthermore, during the project period from September to December 2019, an increase in the use of e-logbooks amounted to 65 fishing vessels.
- E3. The challenge in implementing e-logbooks is the lack of local government participation in supporting the implementation of logbooks in fisheries ports managed by the regions. The lack of supporting infrastructures such as the internet and human resources at the fishing port is also a challenge. Therefore, the Directorate General of Capture Fisheries is expected to be able to improve coordination with the Provincial Marine Affairs and Fisheries Agencies to get technical support in implementing e-logbooks in small-scale fisheries. The Directorate General of Capture Fisheries needs to provide support to provide e-logbook support facilities at the Fishery Port such as internet and computer facilities.

## 1. Introduction

1. In the book of *Laut Masa Depan Bangsa* by Susi Pudjiastuti 2019, mention that the Food and Agriculture Organization of the United Nations (FAO) reports that the world's waters are fully saturated and overfishing in 2013 reached 90 percent of the total fishing area on earth. That number increased significantly compared to 1974, which was only around 60 percent. For several decades, the Indonesian sea has been controlled by foreign parties. Indonesian fishermen are only spectators when tuna and skipjack are caught by large vessels with Vietnamese, Chinese, Malaysian, Thai, Filipino and other flag vessels. Indonesia's losses due to illegal fishing reach a minimum of 20 billion US dollars or IDR 240 trillion per year.

2. Even though the potential for sustainable fish fisheries in Indonesian waters is estimated around IDR 3 000 trillion/year (Pudjiastuti, 2019), but due to illegal fishing, the resources of which can otherwise be enjoyed by the Indonesian people, currently Indonesia generates no more than IDR100 trillion per year. Not surprisingly, despite being among abundant marine wealth, most Indonesian fishermen live in poverty.

3. To end illegal practices and to protect Indonesia's marine wealth the capture fisheries reform in Indonesia began in 2014. This is marked by the issuance of Ministerial Regulation (Permen) number 56 of 2014 concerning the temporary suspension (moratorium) of foreign vessel permits and Permen number 57 of 2014 concerning the prohibition of transshipment or loading and unloading of fish in the middle of the sea. The policy implication is that currently there is an increase in Indonesian fish stocks from 7.31 million tonnes in 2013 to 9.93 million tonnes in 2015 and 2016 which has then increased again to 12.54 million tonnes. Meanwhile, capture fisheries production in the last three years, namely from 2016–2018 continues to increase from 6.5 million tonnes, up to 6.8 million ton and up again to 7.2 million tonnes in 2018 last (Kompas, 2018).

4. In addition, to maintain the sustainability of fish resources, the Ministry of Marine Affairs and Fisheries (MMAF) issued Minister of Marine Affairs and Fisheries Regulation 1/2015 concerning the capture of lobster (*Panurilus* spp.), crab (*Scylla* spp.), and *rajungan* (*Portunus pelagicus* spp.). This rule contains fishing provisions such as species, conditions, and certain sizes. This regulation stipulates that crabs that can be caught and exported must be in a non-laying condition with carapace widths above 10 cm or weight above 60 grams.

5. Efforts to safeguard Indonesia's marine sovereignty and resource sustainability can succeed if other management tools ensured. The direction and management efforts can provide tangible benefits economically, socially and environmentally. One such tool is the data collection of fish resource utilization with a logbook. The logbook program is mandated by Law 45/2009 on Fisheries which aims to obtain accurate, current and objective catch data. Based on this, the Ministry of Marine Affairs and Fisheries has implemented this program based on standard operating procedures that have been prepared previously. However, the implementation of the logbook program will depend on the ability of users, both boat captains and fishermen.

According to the Minister of Maritime Affairs and Fisheries Regulation No. 48/2014 regarding the Fishing Logbook, the results of the logbook analysis can be used as recommendations for fisheries management policies, forms of fish resource management interventions, and the use of fishing gear

6. The logbook plays a significant role in supporting efforts to manage Indonesian fisheries. According to the MMAF Regulation No. 48/2014 regarding the Fishing Logbook, the results of the logbook analysis is used in developing recommendations for fisheries management policies, forms of fish resource management interventions, and the use of fishing gear. Under these conditions, every vessel of 5 gross tonnages (GT)

size must report the catch on logbook. Since its launch by the Minister of Marine Affairs and Fisheries, Mrs Susi Pudjiastuti at the Our Ocean Conference (OOC) forum in Bali in October 2018, until September 2019 there have been 6 200 vessels registered and have activated the e-logbook. The Directorate General of Capture Fisheries, the Ministry of Marine Affairs and Fisheries is targeting that until the end of 2019, vessels that use e-logbook will reach 10 000 vessels (Vivanews, 2019).

7. Based on the evaluation of the implementation of the logbook, several obstacles have been found in the manual logbook reporting (Rouf, 2019). Some of the obstacles that become complaints by fishermen and boat captains are the use of paper material that is easily torn due to easily wet, manual logbook filling which is considered troublesome and disturbing fishing activities and the occurrence of data gaps when entering into the system in the middle of the sea. On the other hand, the challenges in managing fish resources currently require the availability of accurate and up-to-date logbook data. Therefore, and to support better implementation of the logbook, in 2018 the Director-General of Capture Fisheries issued Regulation of the Director-General of Capture Fisheries number 11/PER-DJPT/2018 concerning Technical Guidelines for the Implementation of Fisheries logbook.

8. In 2019 through the ISLME project, FAO Indonesia provided technical support to the MMAF to increase outreach of the use of electronic logbook (e-logbook) for small-scale fisheries in Indonesia. This support is intended to improve the quality of catch data and also provide technical capacity building for fishermen and government officials in the use of e-logbook. For the implementation of this project, FAO is collaborated with DFW-Indonesia primarily to conduct dissemination and training activities on the use of e-logbook for capture fisheries businesses in 6 chosen locations namely Indramayu, Cirebon, Lamongan, Probolinggo, Cilacap and Pati. Indramayu, Cirebon, Lamongan and Pati are located in the WPP 712, while Cilacap in WPP 573 and Probolinggo in WPP 713.

9. WPP 712 where located in Java Seas and has the fish potential around 1 341 632 tonnes with the allowable fishing catch is 1 083 305 tonnes. Mainly, fish species in this area is reef fish, squid, and shrimp. WPP 713 where located in Bali Sea, Flores Sea and Makassar Strait. It has fish potential around 1 177 852 tonnes with the allowable fishing catch is 942 282 tonnes. Mainly the fish species are reef fish, squid, and shrimp. While WPP 573 cover the Indian oceans from the south of Java to the south of Nusa Tenggara, Sawu Sea and Timor Sea in the west side. It has the fish potential around 1 267 540 tonnes with the allowable fishing catch around 1 014 032 tonnes. Mainly the fish species in this area are small and large pelagic, shrimp and squid (Darilaut, 2019).

10. One of the approaches to improve sustainable documentation of catch data in Indonesia as the primary input required for developing, monitoring and evaluating the fishery management, is to make use of fisheries logbook system particularly for the coastal or small-scale fishers. By MMAF Ministerial Degree No 48/2014, logbook refers to as landing declaration by captain, or statement about fishing activities conducted and catch landed. It encloses daily record of the fishing trip reported by fishing captain, and it is compliant for all fishing boats >5 GT. However, the implementation of this logbook by coastal and small-scale fisheries still requires thorough effort from national and provincial governments to ensure improvement of fisher compliance (including capacity), which is quite low.

11. Directorate of Fish Resources Management (DFRM or locally and hereafter called *Pengelolaan Sumber Daya Ikan*, PSDI, Directorate General of Capture Fisheries (DGCF) – MMAF has responsibility to increase the Indonesian fisheries resources management on the basis of FMAs through strengthening data on fisheries resources and statistics including development and the use of fisheries logbook. In general, the implementation of the logbook is supported by substantial regulations<sup>1</sup>, including MMAF Ministerial Degree No 48/2014 on fishing logbook; and Director General Degree No. 11/KEP-DJPT/2018 on Standard Operational Procedure Fishing Logbook. The Sub-directorate of Monitoring and Analysis for Fish Resources of PSDI – MMAF (or PAP-SDI) is the unit managing fishers'

logbook, serving to strengthen logbook compliance and to identify ways for establishing logbook requirement system for the small-scale fishers.

## 2. Legal bases

- Law No 45 of 2009 concerning Fisheries.
- Minister of Marine Affairs and Fisheries Regulation No. 48/Per-MenKP/2014 concerning the Fishing Logbook.
- Regulation of the Director-General of Capture Fisheries Number 11 the Year 2018 concerning Technical Guidelines for the Implementation of the Fishing Book Log.
- Letter of Agreement between the Food and Agricultural Organization of the United Nations (FAO) and DFW Indonesia for Provision of Services in the Implementation of Capture Fisheries Logbook for Coastal and Small-Scale Fisheries.

## 3. Purpose and targets

12. The purpose of this activity was to strengthen the capacity and capability of fishermen and local government staff in the application of fisheries e-logbook for small-scale fisheries in 6 selected pilot areas

13. The targets of this activity were:

- Piloting the use of logbook for small-scale fisheries in the pilot area which are supported by well-developed guidelines or manuals
- Improve compliance with the use of logbook through public consultation socialization in 6 pilot locations
- Strengthen the capacity of the pilot location local government in the logbook verification process.

## 4. Outputs and outcomes

14. The implementation of “The Implementation of Fishing E-Logbook for Small-Scale Fisheries in Indonesia” have several outputs and outcome which want to be achieved as shown in the following Table 1.

*Table 1.* Scope of work, deliverable and detail activity of the project

Scope of work	Deliverable/output	Detail activity	Outcome
Preparation program	<ul style="list-style-type: none"> <li>• Contract signed</li> <li>• Staff contractual is signed</li> <li>• DFW team ready</li> <li>• Detail work plan for project team is ready and used</li> <li>• Status Logbook</li> </ul>	<ol style="list-style-type: none"> <li>1. Contract administration Process DFW-FAO</li> <li>2. Recruitment &amp; Internal DFW consolidation</li> <li>3. Internal workshop to discuss material, workshop material and other material.</li> <li>4. Desk study on logbook utilization status.</li> <li>5. Coordination meeting with</li> </ol>	Start up Program

Scope of work	Deliverable/output	Detail activity	Outcome
		Directorate General of Capture Fisheries, Directorate of Fish Resources Management, MMAF of Government of Indonesia. 6. Identifying pilot project locations.	
Rapid assessment report and recommendation of the implementation of fisheries logbook in selected ISLME pilot sites	Assessment Report and recommendations	1. Collecting materials, data, and information to formulate the logbook manual. 2. Workshop: logbook manual formulation. 3. Drafting: logbook manual. 4. Revision and inputs: logbook manual draft. 5. Finalization: logbook manual. 6. Layout and printing: logbook manual.	Baseline information and manual logbook
1. A fisher friendly fishing logbook format; 2. Printed guidance to be pilot tested.	Fisher-friendly fishing logbook format and logbook printed guidance for the use of coastal and small-scale	1. Distribution of printed logbook manual to pilot sites. 2. Real time rapid assessment and pilot testing with users in Indramayu.	Distribution and testing manual Logbook
1. Practical logbook mechanism and procedure 2. Implementation of the logbook for (at minimum) 60 boats of coastal or small-scale fishers for (minimum)	Development of practical logbook mechanism and procedure (from fisher, local and provincial governments to national government)	1. Developing term of reference for training of logbook utilization by users. 2. Meeting and socialization with regional government in Cirebon, Indramayu, Pati, Cilacap, Lamongan, Probolinggo.	Training and implementation

Scope of work	Deliverable/output	Detail activity	Outcome
<p>three-month period of time using observers for verification logbook provided by the MMAF counterpart</p> <p>3. Capacity building for: Fishers, 60 boats, boat owner or cooperation, 20 boats, DKP Province and DKP District officers, 20 persons</p>		<p>3. Identifying participants and training location in Cirebon, Indramayu, Pati, Cilacap, Lamongan, Probolinggo.</p> <p>4. Implementation of logbook utilization training in Cirebon, Indramayu, Pati, Cilacap, Lamongan, Probolinggo.</p> <p>5. Reporting logbook utilization training activities.</p> <p>6. Logbook implementation in 60 boats by observers.</p> <p>7. Processing data from observers' logbook implementation results.</p>	
<p>1. Documentation of the implementation of this activity Report of each outputs, final report of activity (technical and budget).</p> <p>2. Preparation of BAST document</p>	<p>Activity Report that encompasses the report of the implementation of the logbook at agreed number of fishing boats, and Budget Report</p>	<p>1. Formulating draft of final report</p> <p>2. End-program workshop with MMAF</p> <p>3. Hand-over of final report and BAST</p>	<p>Final Report</p>

## 5. Implementation of activities

16. The implementation of this activity consisted of several sub-activities namely Consultation with the Directorate of Fish Resource Management, MMAF; inception workshop; rapid assessment in Indramayu; E-Logbook Training in Cirebon, Cilacap, Lamongan, Probolinggo and Pati; and e-logbook data processing as shown in the following sections.

### 5.1. Consultation with the Directorate of Fish Resource Management, Directorate General of Capture Fisheries

17. The consultation meeting was held on Thursday, 22 August 2019, by Moh Abdi, DFW-Indonesia team leader who met with the Acting Director of Fish Resources Management (PSDI), Directorate General of Capture Fisheries, Syahril Abdul Raup and staff namely Muhammad Aries Budiarto, and Muhammad Illham.

18. The consultation discussed on the plan of the initial workshop including the schedule, material, logbook guide format, and the schedule and location of e-logbook dissemination activities and how to undertake the activity for the set 6 districts.

19. The results of the consultation were:

- 1) The initial workshop will be held on 27 August 2019, in Bogor.
- 2) The PSDI Directorate also provided input on the format, design and substance of the guidebook that will be created in the implementation of the logbook implementation.
- 3) The location and schedule of rapid assessment and logbook socialization in Indramayu Regency (PPI Karangsong) and Cirebon Regency (PPI Bondet) on 16 September to 17 September 2019. As for locations in Probolinggo, Lamongan, Pati and Cilacap it would be conducted after evaluation of activities at the 2 previous locations. It was planned that e-logbook dissemination activities in Probolinggo, Lamongan, Pati and Cilacap will be conducted in early October 2019.

### 5.2. Inception Workshop of the Implementation of Capture Fisheries Logbook for Coastal and Small-Scale Fisheries Programme

20. The inception workshop on the Implementation of Capture Fisheries Logbook Program for Coastal and Small-Scale Fisheries was held on Tuesday, 27 August 2019, at the Santika Hotel, Bogor. Workshop participants were 15 people consisting of 12 men and 3 women (Table 1), attended by among others the Acting Director of PSDI, Syahril Abdul Raup; the ISLME-FAO National Project Officer, Muhammad Lukman, Communication Specialist, ISLME-FAO, Suci Haryati; PSDI Directorate staff and DFW-Indonesia team. Gender proportion of the participant was shown in the Table 1. The proportion of female was 16.7 percent.

21. This inception workshop discussed the implementation strategy of the Implementation of Capture Fisheries Logbook for Coastal and Small-Scale Fisheries program that will be carried out by DFW-Indonesia. The material discussed in this workshop was the plan and schedule of dissemination and mentoring activities for fishermen in the application of e-logbook, and the draft technical guidelines for verification of e-logbook for the period September–November 2019. In accordance with the technical proposal of activities, one of the targets for this activity was a minimum of 60 fishing vessels will use and report catches via e-logbook.

Table 2. Gender proportion of participants in the Inception Workshop, Bogor, 27 August 2019

No	Participants	Numbers	Proportion (percent)
1	Male	12	66.7
2	Female	3	16.7

22. The workshop was opened by remarks from Acting Director of PSDI, KKP, remarks by National Project Officer, ISLME-FAO and presentation of work plans by DFW-Indonesia team leader. Then, it was followed by a presentation on the Implementation of the Fishing Logbook and a presentation on the draft of the Technical Guidelines for Verification and Validation of the Fishing e-Logbook by the Acting Director of PSDI, Syahril Abdul Raup. The application of filling fishermen e-logbook refers to the Minister of Marine Affairs and Fisheries Regulation No. 48 of 2014 concerning the Fishing Logbook. In 2019, the filling of e-logbook by fishermen reached only 35 percent or around 6 thousand vessels from the target of 10 thousand vessels still far from the target. Meanwhile, from the fishermen's compliance level data in the Fishing Book Log (LBPI) as of 26 August 2019, there were 13 947 non-compliant vessels and 26 404 compliant vessels.

23. NPO for GEF/FAO ISLME Project, Muhammad Lukman gave a brief presentation on the ISLME project components, outcomes and specific national target fisheries i.e. blue swimming crab, lobster, grouper, snapper and mud crab fisheries within the fisheries management areas (or locally called *Wilayah Pengelolaan Perikanan*, WPP) where the ISLME project will select its pilot sites. The logbook program is a pilot project for small-scale fishermen and is expected to support sustainable fisheries management. The project expected that the initiative for having technical guidelines presented in simple and easy language can be of significant contribution for the MMAF to get more participation of fisheries in using the e-logbook.

24. The team leader of DFW-Indonesia, Mohammad Abdi, explained the work plan of how DFW will run and implement the activities according to the set schedule and deliverables. DFW-Indonesia would facilitate the dissemination, testing and training of the application of small-scale fisheries e-logbook in 6 selected districts namely Indramayu, Cirebon, Pati, regency, Cilacap, Lamongan and Probolinggo districts.

25. In addition, DFW-Indonesia in collaboration with the Directorate of PSDI will compile technical guidelines for the verification and validation of fishing logbooks and distribute them to *Syahbandar* officers, fisheries port managers and ship owners to be a reference in the implementation of fishing e-logbook.

26. In the use of manual logbook, there have been many problems found, among others, the paper is easily torn, there is a data gap when loading and some fishermen find it troublesome. Based on the evaluation carried out on the use of a manual logbook, a change was made to an electronic-based logbook. The e-logbook is effectively implemented for vessels >30 GT as of 1 November 2018, for vessels leaving the port.

Charging an Android-based e-logbook is very easy because it is connected to a satellite and can be input offline

27. Charging an Android-based e-logbook is simple and easy. It is already connected to the satellite and the input (data entering) can be provided offline too. The parties involved in the e-logbook-based fishing data collection are fishermen/captain/ABK, not boat owners. The scheme for using the e-logbook is as follows: Fishermen download the e-logbook application on the site and it will be activated by the fishery port officer (locally called *Syahbandar*).

The site: [http://Integrated.djpt.kkp.go.id/login\\_baru/](http://Integrated.djpt.kkp.go.id/login_baru/).

28. After activation, fishermen will be given an account and password. Fishermen can log-in and the data will be read by the system while simultaneously connected to the port. The fisherman will input catch data, weight and species of fish, setting between one point to the next and the location of the catch usually when the fishermen are anchored at night from the catch of the fish and at that time there are no officers. Data that has been entered on Android previously is forwarded/sent to the e-logbook site and the next day report to the *Syahbandar* to be further processed.

29. An explanation from the legal basis is that the transformation of the form of a manual logbook into an e-logbook, the benefits of using a logbook and the procedure for installing an e-logbook application are forms of enrichment and deepening of the logbook material that will be popularized at the program location.

30. Aris Budiarto from PSDI MMAF explained about the draft e-logbook technical guidelines and technical guidelines for verification and validation of the fishing logbook. He also gave a presentation of the DFW-Indonesia work plan in the implementation of small fishermen fishing activities that were in accordance with technical guidelines from the Directorate of PSDI KKP. From the chosen location, there are several fish commodities that are targeted for capture, such as in the Cilacap area there are large demersal fish, and Indramayu and Cirebon pelagic fish.

31. The vessels that will be targeted by the e-logbook are determined by the Directorate of PSDI based on vessel compliance data so that the observer can follow the vessel and assist the fishermen in filling in the catch data.



*Figure 1.* Opening ceremony of Fishing Logbook Initial Workshop



*Figure 2.* Discussion and Q&A in Fishing Logbook Initial Workshop



*Figure 3.* National Project Officer ISLME-FAO, Muh Lukman gave a speech in an opening ceremony



*Figure 4.* National Coordinator DFW-Indonesia, Moh Abdi presenting the plan of Implementation of Fishing Logbook



*Figure 5.* Acting Director of Fish Resource Management, Syahril Abdul Raup gave instructions in the opening ceremony



*Figure 6.* Participants and keynote speakers of Fishing Logbook Initial Workshop

## 6. Preparation of fishing e-logbook manual

32. One of the outputs of this program was the compilation of a simple fishing e-logbook manual and a guide for fishermen and fishery officers in using e-logbook in operation. In the preparation of the manual, the DFW-Indonesia team has intensively discussed and obtained input from relevant officials and staff of the Directorate of Fish Resource Management, KKP and made a draft guide based on the guidance material and procedures for using e-logbook that were available at the KKP. Through the process of discussion, drafting, consultation and discussion, a draft manual was formulated as follows.

## E-Logbook Front Interface

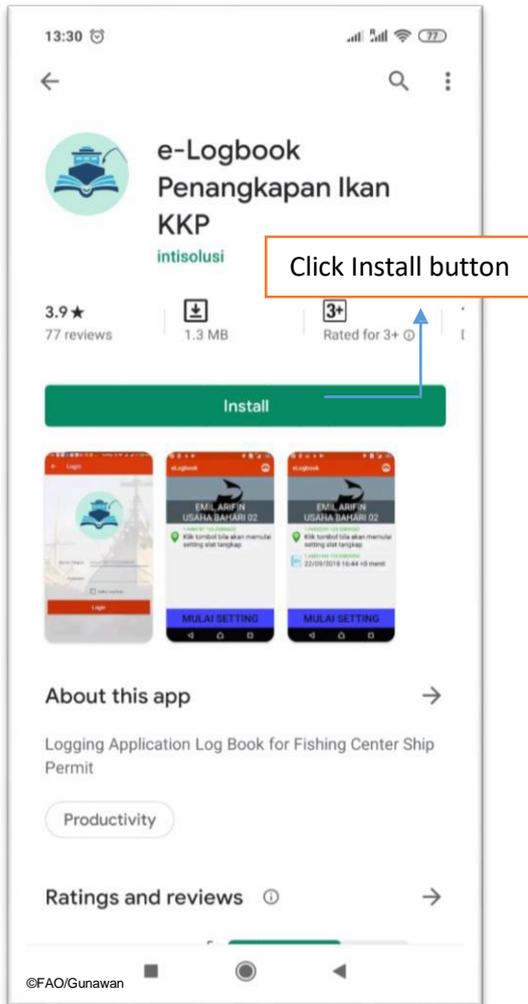


Figure 7. E-LOGBOOK interface on Play Store

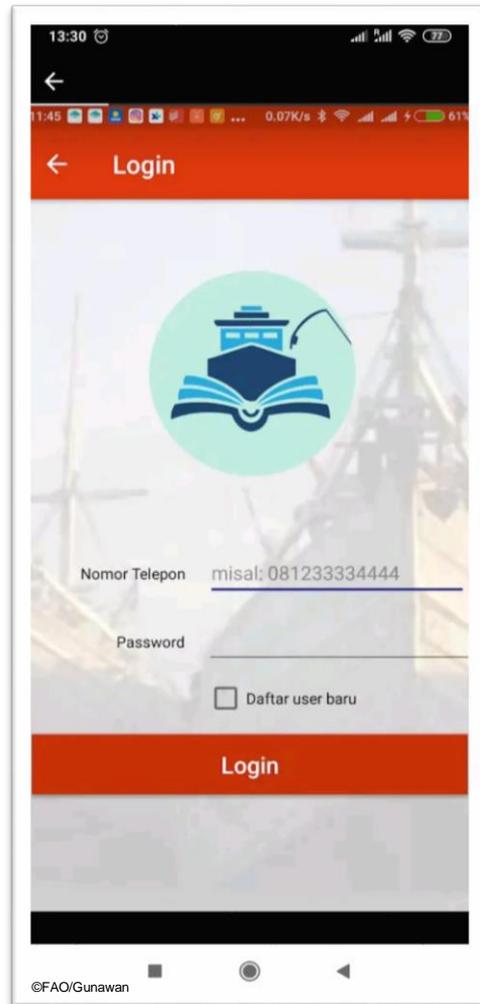


Figure 8. E-LOGBOOK Interface on Android

33. This draft was then limitedly printed and tested on its use in e-logbook socialization activities in PPI Karangsong, Indramayu and PPI Bondet, Cirebon Regency. In this trial, shipowners and the skipper, in general, could already understand the procedures for using e-logbook based on the program manual provided at the time of socialization. The effectiveness of the manual will be evaluated accordingly for better improvement.

## 7. Dissemination of fishing e-logbook on 6 pilot site

### 7.1. PPI Karangsong, Indramayu

34. In an effort to improve the recording of fish catches by small-scale fishermen, the Ministry of Marine Affairs and Fisheries in collaboration with the Food Agriculture Organization of the United Nations implemented a program of the capture of fisheries logbook for coastal and small-scale fisheries. One of the sub-activities of this program is the dissemination and rapid assessment carried out in Indramayu and Cirebon Districts.

35. Dissemination and rapid assessment activities at Indramayu were held on Monday, 16 September 2019, at the hall of the Indramayu Fisheries Service. This activity was attended by participants from among fishermen, skippers, boat owners, Chiefs and staff of the Kej Kejara Archipelago Fisheries Port, Cirebon staff of the SDI Directorate, KKP and Indramayu fisheries service staff. The number of participants in this activity was 43 people consisting of 38 men and 5 women (Table 3).

Table 3. Proportion of gender in the Rapid Assessment Meeting, Indramayu, 15 September 2019

No	Participants	Numbers	Portion (%)
1	Male	38	88.37
2	Female	5	12.5

36. This activity was opened by the head of the Indramayu fisheries service, Abdul Rasyid Hakim. In his remarks, the Head of Indramayu fisheries said that the recording of catches was very important for fisheries management in Indramayu, especially to find out the number of vessels, production, fishing gear used and fishing locations. As per records, Indramayu Regency accounts for 64 percent of the total capture fisheries production

"As is well known, Indramayu district has contributed 64 percent of total capture fisheries production in West Java," said Abdul Hakim, Head of the Fisheries Service, Indramayu.

37. In West Java. In the introduction to the socialization event, DFW-Indonesia National Coordinator, Moh Abdi Suhufan, said that with this activity, is expected to increase the number of e-logbook application users in WPP 712 for fishermen in Indramayu and Cirebon. Intervention

with this activity is expected to increase the reach and use of e-logbook applications for small-scale fishermen on the north coast of Java.

38. Meanwhile, on the occasion, Muh Aris Budiarto from the Directorate of PSDI, Directorate General of Capture Fisheries, KKP delivered presentation on procedures for installing and using the logbook and its benefits in fisheries governance. He said that the number of vessels applying e-logbook in Karangsang PPI was still very low. Of the approximately 200 vessels over 30 GT licensed by the CTF, only around 52 vessels use and have activated e-logbook. The majority of fishing vessels in the Karangsang PPI are in the Java Sea (WPP 712) and Arafura Sea (WPP 718).

39. Finding: In this activity, it was also revealed that one of the obstacles that caused the low level of e-logbook reporting at PPI Karangsang, Indramayu was lack of support for office equipment such as computers/laptops and the unavailability of internet facilities at *Syahbandar's* office.

40. Recommendation: To overcome this and support the activity, DFW-Indonesia supplementary provided internet modem assistance to the *Syahbandar/logbook* officers at PPI Karangsang and addressed the problem to the Indramayu Regency Fisheries Service to complete the office facilities for *Syahbandar* at PPI Karangsang.



Figure 9. National Coordinator DFW-Indonesia gave an opening speech in Rapid Assessment event



Figure 10. Group photo consist of participants and speakers in Rapid Assessment event



Figure 11. The scenery in the event at Indramayu Marine and Fisheries Agency Hall



Figure 12. Head of Cirebon Kejawan Fisheries Port, Mrs Imas, gave a speech opening the rapid assessment



Figure 13. Training Specialist DFW-Indonesia, Kamaruddin Azis gave an introduction of discussion



Figure 14. Discussion, Q&A of participants scenery in the event

## 7.2. PPI Bondet, Cirebon district

41. The e-logbook dissemination activity at PPI Bondet Cirebon was held on Tuesday, 17 September 2019. The activities at PPI Bondet were attended by Acting Director PSDI, KKP, representatives of the Marine and Fisheries Agencies of West Java, Head of the Capture Fisheries Section of the Cirebon Fisheries Office, Section Chief Procedure for PPN Kejawan, PPI officers in all Cirebon districts, skipper, boat owner and fishermen from 2 villages around PPI Bondet, namely Grogol village and Mertasinga village. The total participants were 42 people, 40 of them men and 2 women.

*Table 4.* Proportion of gender in the Dissemination Meeting, PPI Bondet, Cirebon, 16 September 2019

No	Participants	Numbers	Portion (%)
1	Male	40	95.2
2	Female	2	5.3

42. In activities at PPI Bondet, Muhaimin, Head of the Capture Fisheries Section of the Cirebon District Fisheries Office, said that the total number of fishing vessels recorded in Cirebon regency was shown as the table below:

*Table 5.* Numbers of fishing vessels in Cirebon based on their size

No	Vessels size	Units	#Numbers
1	1-2	GT	1 000
2	2-5	GT	5 750
3	5-10	GT	40

43. The number of fishermen recorded as many as 17 900 inhabitants and capture fisheries production in 2018 last amounted to 27 000 tonnes which were landed in 7 PPI in Cirebon district.

44. The majority of vessels in PPI Bondet consists of small size vessels of 2–5 GT with the target of crab catches. There are only 10 7 GT vessels in the Bondet PPI and in accordance with the Minister of Marine Affairs and Fisheries Regulation No. 48 / Per-Men KP / 2014 concerning Fishing Logbook, only vessels over 5 GT are required to use the logbook. The socialization activities were carried out with the resource persons the Director of PSDI, Syahril Abdul Raup and Head of the Capture Fisheries Section, Cirebon Fisheries Service, Muhaimin. In this activity, a trial installation of the e-logbook application was also carried out on 2 fishing boats.

45. In the dissemination activities at PPI Bondet, the small crab fishermen expressed their problem and requested that the government to guarantee the stability of selling prices. According to fishermen, crab prices this year dropped to IDR60 000 per kg, while in the previous crab season the price reached IDR80 000–90 000 per kg. Other issues raised and conveyed by representatives of the West Java Provincial Office are the lack of crab production data and complaints from entrepreneurs about the levies collected by the local government. The executive director of PSDI said that every fishing activity should be recorded when landed at the nearest port in order to get a Fish Landing Certificate (SKPI). Based on the SKPI, if the fishery commodity is to be sent overseas (export), the port will issue a Fish Catch Certificate (SHTI).

46. Finding: Fluctuations in the selling price of crab hurt crab fishermen. Fishermen asked the government (KKP) to provide price guarantees for crab fishermen in PPI Bondet. In addition, it was found that current data and records of crab production are still very minimal and double the levies are imposed on fishermen.

47. Recommendation: Cirebon district government needs to systematic in issuing a Fish Landing Certificate (SKPI) to fishermen who land their fish on PPI.



Figure 15. Opening ceremony of Socialisation of Fishing Logbook in PPI Bondet



Figure 16. Situation of Socialisation of Fishing Logbook in PPI Bondet



Figure 17. Q&A scenery of the participants in PPI Bondet



Figure 18. Group photo of speakers and participants in the event



Figure 19. Installation and activation process of e-logbook apps by Syahbandar officer for fishers



Figure 20. Iham from Directorate of Fish Resource Management, MMAF gave a presentation

7.3. PPP Mayangan, Probolingo district

48. Dissemination and training on the use of e-logbook were carried out at the Mayangan Coast Fisheries Port (PPP), Probolingo district on Wednesday, 9 October 2019. This activity was attended by participants dominated by female, captains and boat owners domiciled in PPP Mayangan, head of and PPP Mayangan staff and SDI Directorate staff, KKP. Participants who attended this activity were 35 people consisting of 9 men and 26 women (Table 4).

Table 6. Composition of participants in the Dissemination Meeting, PPP Mayangan, Probolingo

No	Participants	Numbers	Percent(%)
1	Male	9	26
2	Female	26	74

49. The involvement of the majority of women in the Mayangan PPP port is quite unique because they do not only work as housewives but as officers who take care of vessel permits (company employee status). One of the reasons for involving women in the process of managing vessels is that women are more thorough so that they can help and assist the captain/crew in the licensing process online, can help ABK who are not highly educated, and ABK knows its responsibility to fill the logbook as a condition for vessel building, vessel operations. These women are members of the *Samudera Lestari* Fishermen and Fishermen Association.

50. In a speech by the head of Mayangan PPP, Pratiwi Sulistyani said that around 6 000 users had registered through e-logbook and the importance of transferring analogue to digital data. PPP Mayangan has an area of 54.8 ha, almost ensuring all vessels >30 GT have followed the specified logbook procedures. PPP Mayangan has taken part in collecting catch data. The Head of PPP Mayangan, Pratiwi

"Currently, of the 266 fishing vessels that have reported their catch, 144 of them have used e-logbooks," said Pratiwi Sulistyani, Head of PPP Mayangan, Probolinggo.

Sulistyani stated that there were 266 fishing vessels that had reported their catches and 144 of them had used e-logbook. The location of the catch of PPP Mayangan fishermen is in the WPP 718 area which includes the Arafura Sea. Small fishing boats are a transshipment vessel. While the regulations on filling e-logbook by transshipment vessels have not yet been regulated.

51. The main commodities in the form of 10 types of dominant fish caught in PPP Mayangan, are as follows: *Kurisi*, red snapper, *anggoli* (snapper family), *siwonggi* (snapper family), *lencam* (snapper family), grouper, octopus, anchovies, field fish and *kuwe* fish. Fisheries production in 2018 totalled 16 030 ton with the highest production in January 2 280 ton and the lowest in November was 536 ton. The types of fishing gear used by the fishing fleets are gill net, amounting to 152, 114 basic longlines, 112 purse seines, 88 trawls, 33 transport vessels, floating chart 28, squid fishing line 14, catching sea cucumber 7, *bouke ami* (lift net) 7.

Table 7. The number of fleets operating at PPP Mayangan is based on size

Size (GT)	Numbers (unit)
< 10	28
11-20	146
21-30	115
31-100	208
>100	52

Source: East Java DKP, 2018

52. Mr Edwin, representative of the PSDI Directorate, KKP provided material on instructions and the use of e-logbook for small fishermen. E-Logbook is a new system by moving the format from manual on paper to digital (handphone) which is more practical and accurate and a safer storage. Fishermen need traceability of data about fishery information obtained from e-logbook filling.

53. E-Logbook is a daily report on the activation of catches and catches of fish at sea by fishermen which will be landed at fishing ports that are digitally recorded or via mobile phones. E-Logbook cuts a lot of analogue work so it is more effective and efficient.

54. In the implementation of dissemination and training conducted at PPP Mayangan, there were several findings related to the application status and understanding of the captain and/or ship owner regarding the e-logbook application as follows:

- The e-logbook filling for some fishermen is not so important but it becomes a challenge when they want to go to sea and have not yet activated the e-logbook. Fishermen find the e-logbook activation process complicated.
- Difficulties of fishermen/skippers in filling e-logbook, when choosing the type of fish caught in the application that contains 500 species of fish. Fish identification is very detailed, this makes fishermen confused and spend a lot of time when filling e- logbook. Suggestions from fishermen, the distribution of names of fish species and enough to use local names. For example enough bamboo fish (red snapper), fish cake.
- Data synchronization needs to be improved because there are some fishermen catch data that are different from the e-logbook system and the results of the SDI
- Vessels in PPP Mayangan are also dominated by buffer vessels that receive catches from WPP 718 the Arafura Sea, Dobo port. While SDI has not yet set up an e-logbook system for buffer vessels.

55. Recommendations or follow-up from the results of the training on the use of e-logbook, as follows:

- The authority of the PPP Mayangan is advised to make dissemination of the e-logbook to the small fishers more intense. Conduct e-logbook meetings, ease application procedures, sanctions and vessel/company closure assigns staff who specifically work to assist ABK before the operation of vessels and vessels anchored, landed fish.
- The Directorate of PSDI needs to update the appearance of fish species through the search column or in other ways so that fishermen find it easier in filling.
- Provision of mobile phones is recommended to companies and owners for data collection through e-logbook.



*Figure 21. National Coordinator DFW-Indonesia, Moh Abdi, introduction and opening of dissemination activities*



*Figure 22. The Head of Mayangan PPP, Pratiwi Sulistyani explained the profile of PPP Mayangan*



*Figure 23. The representative of the Directorate of SDI, KKP, Edwin conveyed the instructions and use of e-logbook*



*Figure 24. Participants of the use of e-logbook*



*Figure 25. Head of the fisher women's group at PPP Mayangan*



*Figure 26. Participants and keynote speakers of Fishing Logbook Initial Workshop*

#### 7.4. PPI Kranji, Lamongan District

56. Dissemination and training on the use of e-logbook were carried out at the Fish Landing Capture (PPI) Kranji, Lamongan District on Friday, 11 October 2019. This activity was attended by fishermen, captains and boat owners domiciled at PPI Kranji, the head and staff of PPP Brondong, PPI Kranji staff and SDI Directorate staff, KKP. There were 40 participants in this activity (Table 8).

**Table 8.** Composition of participants in the Dissemination Meeting, PPP Kranji, Lamongan

No	Participants	Numbers	Percent(%)
1	Male	40	100
2	Female	0	0

57. The dissemination activity was opened by DFW-Indonesia National Coordinator, Moh Abdi Suhufan as well as giving an introduction to the participants that as a form of support for the development of fishermen, the KKP is have a Financial Institution for Marine and Fisheries Micro Business which provide loan to the fisherman with a very low interest of 3 percent. It is expected that there is good assistance so that fishermen get good access.

58. Next, the submission of the Brondong Nusantara Fisheries Port (PPN) profile, which is the main port of the Kranji PPI, was conveyed by the head of the Brondong PPN Syabandar, Harnoto. He said that the total number of fleets was 35 mini-purseine vessels in PPN which were active in Kranji PPI. Generally, PPI Kranji fishermen catch in the Java Sea which is a WPP 712 area. The dominant fishing gear used is purse seine.

59. Also present at the activity was the Head of the Lamongan District Fisheries Service who gave an introduction about the potential of the Lamongan fisheries and helped explain the use of e-logbook for the fishermen present. The e-logbook can record the operations of fishermen and catches using Android, including making it easier to capture fishing spots. In addition, the government needs to guarantee the secrecy of the fishermen's catch location so that other fishermen do not know about it which can cause conflicts between small fishermen and large fishermen.

60. Furthermore, instructions for using the e-logbook was given by the representative of the Directorate of PSDI, Edwin, that the Fishing Log Book Form provides information on fishing operations and their catches. This logbook is filled throughout Indonesia. However, manually filling in the logbook form is not effective and efficient. So that it is transferred to the digital system via Android.

61. E-Logbook transfers the format from manual on paper to digital or through mobile phones which is more practical and accurate and safer storage. To install the application you need an Android phone and email. Specifically for this application specifically for fishermen by only being activated via *Syahbandar* through SIPI numbers, e-mails and cellphone numbers.

## Findings

62. In the implementation of the dissemination of the use of E-logbook conducted at PPI Kranji, there were several problems pointed out related to the status of application and understanding of fishermen and/or boat owners including:

- Kranji PPI fishermen are small fishermen with a vessel size <10 GT, they have just received information on the use of e-logbook so that they feel difficulty in filling out the e-logbook later
- Fishermen don't have enough smartphone to apply the e-logbook application in going forward.

63. The chief fisherman of Lamongan especially PPI Kranji conveyed the aspirations of the fishing community:

- It is hoped that there will be research into what causes people to experience difficulties including Law 45/2009 banning trawl and trawl Law 23/2014.
- A radio call is needed for fishermen for the safety of the fishermen.
- It takes time for e-logbook dissemination and need to be intensively taken up.

64. From the results obtained, the following recommendations or follow-up were made to improve the process of using a fishing e-logbook as follows:

- E-Logbook is an effective and efficient effort in data collection of SDA fish that moves the format from manual on paper to digital or through mobile phones which is more practical and accurate and safer storage.
- Provision of communication devices in the form of a special cellphone for charging e- logbook.
- There is a need for updating the application to make it easier for users and more intense e-logbook dissemination.
- The intense e-logbook data filling should be the basis for incentives such as social security, subsidized fuel for fisherman insurance premiums.



*Figure 27.* National Coordinator DFW-Indonesia, Moh Abdi, as moderator on e-logbook dissemination



*Figure 28.* Head of Marine and Fisheries Agencies Lamongan



*Figure 29.* The head of the Brondong PPN Syahbandar, Harnoto, is entitled to issue permits for sailing vessels and fishing



*Figure 30.* The representative of the Directorate of SDI, KKP, Edwin conveyed the instructions and use of e-logbook



*Figure 31.* Participants in the dissemination of the use of e-logbook



*Figure 32.* Participants and keynote speakers of Fishing Logbook Initial Workshop

## 7.5. PPS Cilacap, Cilacap District

65. Dissemination and training on the use of E-logbook was conducted in Cilacap on Monday, 21 October 2019, in the Break Water Ocean Fisheries Port (PPS) Cilacap room. This activity was attended by participants from various groups including the commander, shipmen, shipowners and administrators at the Cilacap PPS, Cilacap Ocean Fisheries staff and staff of the Directorate of PSDI, KKP. Total participants who attended this activity were 41 people consisting of 39 men and 2 women.

*Table 9. Composition of participants in the Dissemination Meeting, PPS Cilacap, Cilacap*

No	Participants	Numbers	Percent (%)
1	Male	39	95
2	Female	2	4

66. The socialization of the fishing E-logbook application was opened by the acting Head of the Ocean Fishery Port of Cilacap, Mundakir. He said that in Cilacap PPS the dissemination of the fishing E-logbook application was important as an electronic/digital fishery data reporting platform, which was filled in independently by the skipper on departure and arrival as well as during fishing operations. Data is electronically sent to the Fishing Logbook Information System (SILOPI).

67. On the same occasion, the National Project Officer, Indonesian Sea Large Marine Ecosystem (ISLME), Muhammad Lukman said that the E-logbook is not just helping to tackle illegal fishing, but the system can provide input related to (unreported fishing) or fishing data that is not reported, while also improving data that is useful for more effective management. These reliable data is one of which is used for the preparation of a harvest strategy in implementing good and right fishing methods while maintaining the welfare of fishermen and the conservation of the sea resources.

68. In this activity, DFW-Indonesia National Coordinator, Moh Abdi Suhufan, gave an introduction that Cilacap PPS was a catch landing area of WPP 573 which included southern waters of Java and Southeast Nusa Tenggara. In addition, fishermen/boat owners are expected to be able to increase the use of the e-logbook application well after this activity is completed.

69. The presentation from the Directorate of PSDI, Edwison Setya Firmana, was about the importance of using an E-logbook and how to use it for fishermen in Cilacap PPS. The main purpose of using the E-logbook is to complete the data collection so that it can be used faster and more accurately.

70. The E-logbook application consists of 2 main systems, namely:

- Mobile application for Android-based vessel skipper
- Website-based application for *Syahbandar* or an e-logbook clerk to activate and verify

71. Some of the advantages of the E-logbook application are

- The process of gathering data is easier and more efficient (gadget based).
- Does not require a paper in the process of recording fishing operations data.
- Submission of fishing operation data reports without the need to submit to the fisheries unit or public port office.
- Data is directly integrated with the SILOPI Application.
- Inputs can be provided offline and sent when online.

72. After giving out information and discussion, the program continued with the practice of filling in the Logbook with the e-logbook application on board.

73. In conducting the training on the use of E-logbook in Cilacap, the DFW-Indonesia representative team recorded several findings related to the application status and understanding of the captain and/or ship owner regarding the e-logbook application as follows:

- There are 360 fishing boats, of which around 153 users of the e-logbook application were reported coming from various vessel sizes ranging from 10 GT to 80 GT.
- The indicated e-logbook application does not function properly. The captain who has activated the e-logbook application complained that the application did not function when he wanted to record the location of "settings" and automatically the subsequent recording stages could not be carried out.
- The malfunctioning of the "setting" feature in the middle of the sea implies a feeling of disappointment for the captain who has responded positively to good initiatives from the government to improve the fisheries database. This further led to a negative stigma that the captain was judged and marked disobedient by *Syahbandar* officers.
- The fishermen have not been accustomed to using electronic devices or gadgets, so this is what makes small fishermen with a boat size of 10 GT to 20 GT feel distressed.



Figure 33. Question and answer of e-logbook dissemination at Cilacap PPS

74. One fisherman, Sangad (50 years old) asked that fishermen in Cilacap were mostly elementary school graduates, finding it difficult to fill in e-logbook and also fishermen did not have Android cell phones. However, they were enthusiastic about using e-logbook because the data collection of fish catches with the old system (traditional) gets easily wet and easily damaged.

75. Following are some of the follow-up actions taken from the meeting to improve the process of using e-logbook, as follows:

- PSDI, KKP and Cilacap PPS staff need more intensive socialization on the use of the e-Logbook system so that young fishermen can apply and fill in fish catch data in a more modern way
- Provision of android should be held for small fishermen and the large fishing boat companies need to afford it to their skipper.

## 7.6. PPP Bajomulyo, Pati District

76. Dissemination and training on the use of E-logbook at Bajomulyo PPP were conducted on Tuesday, 17 December 2019 at Bajomulyo Beach Fishery Port, Pati Regency. This activity was attended by representatives of the ship owner, Head of PPP Bajomulyo, *Syahbandar* and representatives of the crew and local fishing organizations. Edwison Setya Firmana and Ilham were facilitators and resource persons from the SDI Directorate General of Fisheries and Fisheries, KKP and Kamaruddin Azis from DFW-Indonesia. Participants who attended this activity were 25 people consisting of 25 men and 5 women.

*Table 10.* Composition of participants in the Dissemination Meeting, PPP Bajomulyo, Pati, 17 Desember 2019

No	Participants	Numbers	Percent (%)
1	Male	20	80
2	Female	5	20

77. The application dissemination and training on the use of fishing e-logbook were attended by the Head of Capture Fisheries, the Agencies of Marine and Fisheries of Central Java Province, Imam. He said that the fishing e-logbook is an electronic or digital fishing report data reporting application and is filled in independently by the skipper on departure and arrival.

78. The Central Java Government, as a commitment of the Agencies of Marine and Fisheries, hopes that dissemination can be carried out widely by reaching other fishing ports in Central Java province. It is intended that the recording and reporting of catches can be reported in a complete and orderly manner. Data from the E-logbook can be used to evaluate fisheries management. Each captain of a fishing vessel can submit a report on the results of the fishing logbook to the port operator in the fishing port, thus synchronizing the data of the vessel as well as a form of compliance of the ship owner. With the availability of data, DKP of Central Java Province can access the data for future fisheries development planning and policy.

79. Bajomulyo PPP Port Head, Chamad Mundazkir said that the results of this data collection were very dependent on the honesty of the skipper. The data prepared by the skipper will be validated by other parties such as the fishery port and the data in the KKP.

80. In applying the E-logbook, it should give the accurate data about fish resources, the fish resources although breeding, does not mean that the resources are unlimited. The data need to be more complete so that it can help policymakers appropriately. Precise, accurate and updated data from the e-logbook is helpful to estimate the total annual catch, support legal, reported and regulated fisheries and support scientific studies such as stock estimates and fishing limits.

According to the Head of Bajomulyo Port, the number of fishing vessels in PPP Bajomulyo size of 10 GT to 30 GT reached 3 639 units. While the size above 30 GT reaches 874 units

81. According to the Head of Bajomulyo Port, the number of fishing vessels in PPP Bajomulyo size of 10 GT to 30 GT reached 3 639 units. While the size above 30 GT reached 874 units spread along the coast of Pantura, including those operating in the southern sea, although the numbers were small. Thus, in accordance with the expectations.

82. Of the Regional Government, these vessels, especially those above 30 GT, should in fact have to use the e-logbook application.

83. In conducting the training on the use of e-logbook at PPP Bajomulyo, the DFW-Indonesia representative team recorded some of the findings including the following:

- Regarding, fisheries functional staff, in Bajomulyo, there are 800 vessels while personnel are very limited to only 8 people, so they need attention. This results in an ineffective collection of fish caught in PPP Pati.
- The number of fishing boats sizes 10 GT to 30 GT reaches 3 639 units. But there is no definite information related to the implementation of e-logbook that have been carried out by local fishermen

84. As for the follow up of the results of the meetings conducted to improve the process of using e-logbook, the recommendations are as follows: PSDI, KKP and Bajomulyo PPP staff need to take a more intensive approach with ship owners to use the E-logbook.



Figure 34. Introduction and Opening by the Head of DKP Bajomulyo



Figure 35. Dialogue between fishery business actors and the KKP team regarding e-logbook (©FAO/Gunawan)



Figure 36. Participants and keynote speakers of Fishing Logbook Initial Workshop

## 8. Realization of activities and e-logbook

### 8.1. Participation

85. During the implementation of the project, dissemination activities were carried out at 6 pilot project locations, namely in Karangsong PPI, Indramayu, Bondet PPI, Cirebon district, Mayangan PPP, Probolinggo district, Kranji PPI, Lamongan, Cilacap PPS and Bajomulyo PPP, Pati regency. The outreach activities had reached a total of 226 participants consisting of 186 men and 40 women.

Table 11. Recapitulation of the number of participants in the e-logbook socialization and rapid assessment.

No.	Location	Male	Female	% Male	% Female
1	PPI Karangsong, Indramayu	38	5	88	12
2	PPI Bondet, Cirebon	40	2	95	5
3	PPP Mayangan, Probolinggo	9	26	26	74
4	PPI Kranji, Lamongan	40	0	100	0
5	PPS Cilacap, Cilacap	39	2	95	5
6	PPP Bajomulyo, Pati	20	5	80	20
TOTAL		186	40	82	18

86. The realization of the e-logbook dissemination and training participants were 226 people or 226 percent of the target program which previously only targeted 100 people. This indicates the amount of interest of capture fisheries business actors to find out and apply the use of e-logbook in fishing activities. The size of the participants' enthusiasm is a sign that the effort to disseminate and increase the capacity of the vessel's captain in the use of e-logbook is a priority need at this time. Therefore, the expansion of the location of the socialization needs to be done in the future.

## 8.2. Media coverage

87. In the period of project implementation, DFW strives to broaden the range of information activities through optimizing the use of online media. The following is a recapitulation of news on e-logbook implementation activities, namely:

- <https://investor.id/business/kkp-perbaiki-pendataan-hasil-tangkapan>, 29 August 2019
- <https://www.liputan6.com/health/read/4048918/inovasi-efektif-untuk-jaga-stok-ikan-di-laut-Indonesia>, 29 August 2019
- <https://news.trubus.id/baca/31245/fao-dukung-pendataan-perikanan-skala-kecil>, 29 August 2019
- <http://samudranesia.id/e-logbook-solusi-manajemen-perikanan-di-ppi-karangsong-indramayu/>, 17 September 2019
- <https://maritimeneews.id/demi-pengelolaan-sdi-kkp-dorong-nelayan-indramayu-aplikasikan-e-logbook/>, 16 September 2019
- <https://darilaut.id/berita/64-persen-kontribusi-perikanan-tangkap-di-jawa-barat-dari-indramayu>, 16 September 2019
- <https://www.mongabay.co.id/2019/09/26/e-logbook-cara-perbaikan-data-perikanan-tangkap-indonesia/>, 26 September 2019
- <https://darilaut.id/berita/144-kapal-ikan-30-gt-gunakan-e-logbook-di-mayangan-probolinggo>, 11 October 2019
- <https://www.antaranews.com/berita/1109158/lsm-apresiasi-kkp-fokus-benahi-data-tangkapan-nelayan>, 12 October 2019
- <https://today.line.me/id/pc/article/LSM+apresiasi+KKP+fokus+benahi+data+tangkapan+nelayan-yBe2K6>, 12 October 2019
- <http://samudranesia.id/penggunaan-e-logbook-di-ppp-mayangan-probolinggo-cukup-tinggi/>, 10 October 2019
- <https://maritimeneews.id/sosialisasi-e-logbook-kapal-ikan-di-bajomulyo-kadis-dkp-jateng-datanya-untuk-evaluasi-pengelolaan-perikanan/>, 17 December 2019
- <https://maritimeneews.id/un-fao-bantu-indonesia-dorong-perikanan-berkelanjutan-7000-kapal-terapkan-e-logbook/>, tanggal 14 January 2019
- <https://www.pikiran-rakyat.com/ekonomi/pr-01332157/dfw-indonesia-dan-fao>

kerjasama-tingkatkan-jangkauan-penggunaan-e-logbook, 15 January 2020

88. The implementation of this program has attracted the attention of national online media such as Antara, Mongabay, Investors and Today Line. This greatly helped the outreach process of the E-logbook program nationally because the reach of newsreaders covered this area of Indonesia as a whole. This means that there are indirect benefits for the CTF by increasing public knowledge about the e-logbook program currently being developed by the CTF.

### 8.3. Realization of the utilization of the E-logbook

89. During the project period and after dissemination was carried out at 6 pilot site locations, the DFW Indonesia team worked closely with the PSDI team to monitor the progress of e-logbook activation. This monitoring is intended to determine the realization of the use of e-logbook by business actors after the socialization. In addition to monitoring the realization, the DFW team also communicated with *Syahbandar* officers at the location to find out the constraints and obstacles to the use of e-logbook by the skipper and fishermen. Communication is done through WA and WA groups that were initiated after the dissemination activities.

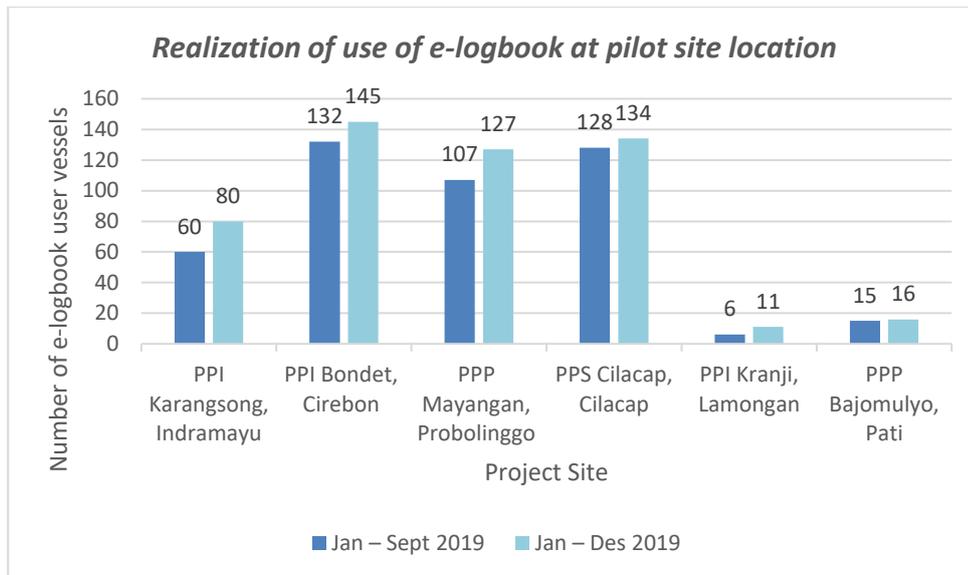
90. The implementation of fishing e-logbook at 6 pilot site locations is quite effective, this can be seen from the realization recorded by the port. The total number of e-logbook users was 513 with the highest level of realization being 145 PPI Bondet, PPS Cilacap 134 and PPP Mayangan 127, while the realization that was classified as less than 100 were in PPI Karangsong 80, PPP Bajomulyo 16 and PPI Kranji 11.

91. Meanwhile, the comparison of the realization of the use of e-logbook and the number of vessels in 6 site locations noted that the number of vessels of various sizes from 5 GT–100 GT was at PPP Bajomulyo as many as 4 513 units but the realization of the use of e-logbook was still minimal, conversely the number of the most densely populated vessels were at PPP Mayangan 6 790 with the highest realization of e-logbook usage. Some locations are not aligned between the number of vessels and the realization of the use of e-logbook, this is because there are a number of ports that have previously been socialized with the use of e-logbook and some have just got the information, so the realization of e-logbook is not on target, but for the initial step seen going very well.

92. Previously filling logbook (manually) by fishermen was considered cumbersome, due to the complexity of the logbook filling format, which was the main reason fishermen did not fill logbook data correctly. The e-logbook has the function of recording the weight data and species of fish caught, the coordinates of the fishing area, and recording the speed of the vessel when carrying out fishing operations. The data recorded in the e-logbook can be downloaded every month in text form so that the data can be easily accessed and used by the data collection officer at the fishing port as a valid and objective fishing logbook data.

Table 12. Realization of use of E-Logbook at pilot site location

No	Location	Jan to Sept 2019	Jan to Des 2019	Additions/progress from the Month of Oct (FAO)
1	PPI Karangsong,	60	80	20
2	PPI Bondet, Cirebon	132	145	13
3	PPP Mayangan,	107	127	20
4	PPS Cilacap, Cilacap	128	134	6
5	PPI Kranji, Lamongan	6	11	5
6	PPP Bajomulyo, Pati	15	16	1
	Total	448	513	65



**Figure 37.** Comparison of realization of e-logbook users before (Jan–Sept) and after (Jan–Dec) project interventions

93. Based on the data in Table 10 above, it appears that the realization of the use of e-logbook at 6 project sites during the January–December 2019 period was 513 vessels. While in the January–September 2019 period, the realization was only 448 vessels. This means that during the project intervention period there was an increase in the realization of e-logbook totalling 65 vessels. This is a significant achievement because it can improve overall e-logbook performance.

**Table 13.** Comparison of the realization of the e-logbook with the number of vessels at the pilot location

No	Location	Realization of e-logbook	Vessel numbers	Realization of e-logbook (%)	% Not yet an e-logbook
1	PPI Karangsong, Indramayu	80	432	16	84
2	PPI Bondet dan PPN Kejawanan, Cirebon	145	6 790	2	98
3	PPP Mayangan, Probolinggo	127	549	19	81
4	PPN Brondong dan PPI Kranji, Lamongan	11	1 528	1	99
5	PPS Cilacap, Cilacap	134	360	27	73
6	PPP Bajomulyo, Pati	16	4 513	0.4	99.6
<b>Total</b>		<b>513</b>	<b>14 172</b>	<b>3,5%</b>	<b>96,5%</b>

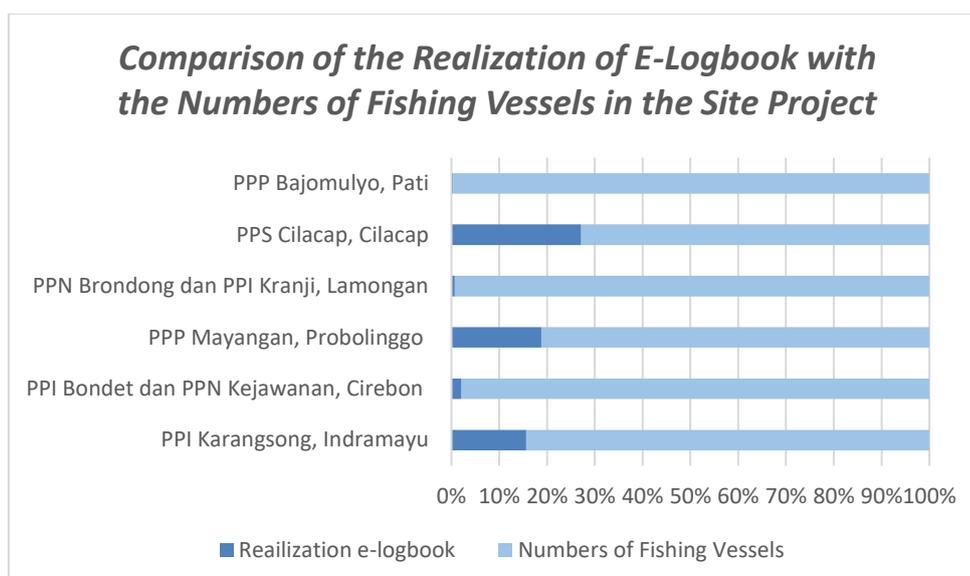


Figure 38. Comparison of the realization of the e-logbook with the number of vessels at the pilot location

94. Meanwhile, based on Table 11 we can see a comparison of the realization of the E- logbook compared with the number of vessels in 6 site locations. In total, the number of vessels in 6 locations is 14 172 vessels while the realization of e-logbook in 2019 is only 513 vessels or only 3.5 percent. This low realization was due to the merging of PPI Bondet and Kejawan PPI locations and Kranji PPI and Brondong PPN, where the actual intervention location was only in the PPI Bondet and Kranji PPI. In addition, the low realization of E-logbook in Lamongan especially PPN Brondong is because the majority of fishing vessels use trawl fishing gear where fishing activities are carried out illegally without SIPI so those recording efforts cannot be carried out optimally.

## 9. Processing results and analysis of 60 vessel e-logbook data

### 9.1. Fishing gear composition

95. Based on e-logbook data during January–Dec 2019 recorded 11 fishing gear operating in WPP-RI, where the type of tuna longline fishing gear is the most recorded in the logbook system, while the boat chart, *huhate* (pole and line), and stretch fishing line are the fleet the least is recorded in the logbook system (Table 14). From this information, it can be concluded that the number of ships reporting through logbook when fishing in WPP-RI is quite small. For this reason, serious attention needs to be taken by Syahbandar officers to ensure the compliance of the ship owner/captain in reporting his catch in the e-logbook system.

Table 14. The composition of the fleet that operates in the use of e-logbooks

Fleets	Numbers
Boat lift nets	1
Stick-held dip net	6
Hand line tuna	7
Pole and line	1
Cast net	6
Drift gillnets	2
Squid jig	5
Hand line	1
Small pelagic purse seine (SPPS)	9
Large pelagic purse seine (LPPS)	8
Tuna longline	14
<b>Total</b>	<b>60</b>

96. The fishing activities carried out by 60 fleets in WPP-RI are presented in Table 15. The number of setting activities is dominated by longline tuna fleets, it is in accordance with the operating system of longline tuna fishing gear that can do setting activities more than once a day. Likewise, the fleet of ships with nets that fall setting more than once a day, causing the number of settings of these two fleets more than the other fleets, while the fleet that does the lowest setting is handline tuna and fishing line with a total of 300 and 92 settings (Table 15).

Table 15. Number of setting each fleet types

Fleets	Number of Setting
Boat lift nets	524
Stick-held dip net	32 122
Hand line tuna	300
Pole and line	15
Cast net	57 424
Drift gillnets	42 422
Squid jig	47 896
Hand line	92
Small pelagic purse seine (SPPS)	21 699
Large pelagic purse seine (LPPS)	15 475
Tuna longline	269 914
<b>Total</b>	<b>487 883</b>

97. The effectiveness of the exploitation of 60 fishing fleets operating in WPP-RI shows that the longline tuna fleet is a fleet that catches almost all groups of fish species recorded in the WPP-RI except soft animal groups (Table 16). While the SPPS and LPPS fleets with one ship show the effectiveness of catching, namely catching large pelagic fish and small pelagic fish. Such is the case with demersal fish which are widely recorded using gill nets. The effectiveness of the exploitation of 60 fishing fleets in operation shows that the LPPS fleet is a fleet that catches almost all types of fish (Table 16) recorded in the WPP-RI except demersal and reef fish groups. While the SPPS fleet with one ship shows very small numbers of pelagic fishing, this needs to be clarified by e-logbook officers in the field or at the centre in validating the catches of the fishing fleets.

Table 16. Catch composition (kg) of fish groups based on fishing gear

Fish Group	Boat Lift Net	Stick-held dip net	HL Tuna	Pole and line	Cast net	Drift gillnets	Squid jig	Hand line	SPPS	LPPS	Tuna longline
Others	4				3		1			5	1
Mollusca		372			582		448			2	
Demersal	16	4			63	327				1	9
Shark						1					467
Reef fish		1			6						5
Big pelagic	1		31	2		4		7	465	49	2 251
Small		29			72				37	406	83
Land water						1					
Total	21	406	31	2	726	333	449	7	502	463	2 816

98. The composition of the catch per fish type is the same as the catch per fish group. Uniformity in the identification and mention of fish species in the e-logbook system need to be corrected immediately to avoid mentioning other fish in filling in the e-logbook data. Mention of species is sought not to use local terms because of differences in the local names of fish in some regions.



Fish species	Boat lift Net	Stick-held dip net	HL tuna	Pole and line	Cast net	Drift gillnets	Squid jig	Hand line	SPPS	LPPS	Tuna longline
Slander scad		1			10				26	69	
Shortfin scad		3			6				11	72	
Largehead hairtail		2			1						
Dolphinfish									15	1	94
Sardine		11			13					136	
Emperors	9										
Madidihang [YFT]			30					7	24		183
Catfish	1					1					
Blue marlin [BUM]			1								73
Broadbill									1		149
Wahoo [WAH]											1
Moon fish [Opah]											12
Shovelnose ray						6					
Stingrays	4										
Whitespotted Wedgefishes						182					
Stingrays						129					
Jenkins whipray						6					
Olive ridley turtle					1						
Pony fishes						1					
Tipped ponyfish					1						
Moonfish		1									
Rainbow runner		1								2	
Purse-eyed scad					1					73	
Yellowstripe Scad		1			5					3	
Mene maculata											82
Black marlin [BLM]											33
Stripped marlin [MLS]						1					
White marlin											1
Spotted sardinella		1			2						
Cuttlefish					1		1				
Talang queenfish					2						
Sardinella		1			11					1	
Wahoo	1					1			1		62
Narrow-barred spanish mackerel [COM]									1		40
Streaked spanish										5	14
Spotted-spanish Mackerel [GUT]											6
Anchovies		3			6					1	
Hardtail scad		2			5						

Fish species	Boat lift Net	Stick-held dip net	HL tuna	Pole and line	Cast net	Drift gillnets	Squid jig	Hand line	SPPS	LPPS	Tuna longline
Longtail tuna [LOT]						1			17	4	2
Black skipjack									1	12	2
Kawa-kawa tuna [KAW]										20	1
Frigate tuna [FRI]									2		1
Bullet tuna [BLT]									13	1	1
Big-eye tuna [BET]									29		360
Southern bluefin tuna [SBT]											222
Total	21	406	31	2	726	333	449	7	502	463	2 816

99. Small-scale fishermen in 6 locations under FAO-DFW intervention have various types of catch. ISLME targets small-scale fishermen in the form of small crab, lobster, grouper and snapper. However, during the intervention and the e-logbook report results were obtained that the target recorded was only the type of red snapper. The total data collection of red snapper catches is 600 kg, with the types of fishing gear used by fishermen in the form of *Boukeami-lift net* (10 kg), nets (180 kg) and longline tuna (470 kg). The discovery of the ISLME target commodity was not caused by fishing carried out by fishermen using vessels >10 GT. The fishermen catch outside from the shore, heading for the vast (oceanic) sea. While there are many target commodities in the bottom waters and coastal areas <2 miles. In addition, the fishermen who catch the target commodity are small fishermen with a boat size <5 GT, they do not use the logbook or e-logbook, so they can catch and sell their catches to collectors without being recorded in the e-logbook system. This can cause the target commodity from ISLME to not be recorded.

100. Based on the results of interventions in 6 ISLME locations, several points were obtained in the use of logbooks and e-logbook for small-scale fishermen, among others:

- a. Previously, small fishermen manually filled the logbook with paper. However, the filling has a low level of accuracy because of the large amount of data that must be filled out by fishermen, the use of paper that is easily damaged and lost, the writing is not easy to read and the data is less accurate.
- b. In using e-logbook, some technical problems experienced by fishermen are that fishermen are still not accustomed to operating the e-logbook system so that it takes time to process data loading, difficulty choosing features, difficulty getting signals when in the middle of the sea. But in general, fishermen prefer to use e-logbook over manual logbooks.
- c. In the e-logbook application, presumably the features in the e-logbook can be made simpler and easier for fishermen to understand, so that fishermen do not experience difficulties in operating it.
- d. It is necessary to conduct socialization/training on the use of e-logbook to the captain of the ship in an intense manner with easy to understand language.
- e. The role of port officers both at the regional and central levels in the implementation of e-logbook is very important because it is a technical implementer who will deal directly with fishermen as a source of data. For this reason, if fishermen/captain/boat owners are found to have improperly filled in and reported the results of the fishing boats, it is necessary to impose strict sanctions.

## 9.2. Catch composition

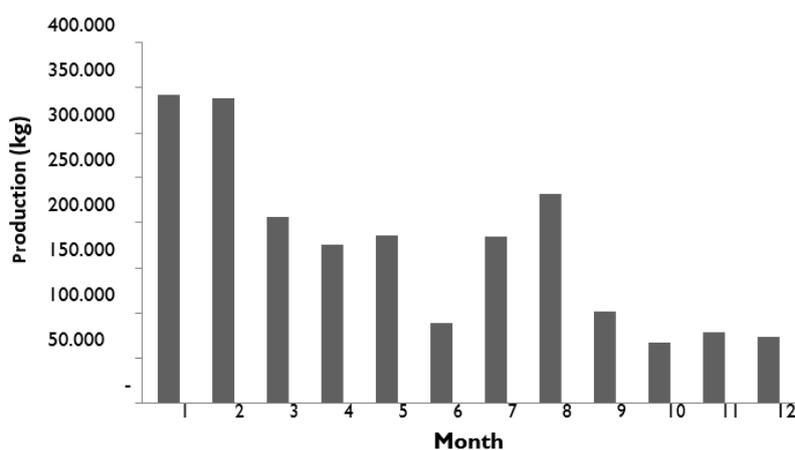
101. The composition of the catch fish species recorded in the logbook on 60 vessels varies by month. In the catch composition of Table 16, there are still other fish (unidentified species), this is allegedly due to the unlisted species in the e-logbook and occurs at the beginning of the year from January to April and December. The composition of the catch based on the month obtained information that the group of demersal fish species, small pelagic and large pelagic fish are caught every month, while sharks are only not caught in November and December.

*Table 18.* The composition of the catch of fish groups (kg) based on Month

Fish Group	Month (Jan–Dec)											
	1	2	3	4	5	6	7	8	9	10	11	12
Mollusca	4 601	9 946	16 820	9 781	6 494	13 010	30 295	33 975	24 788	22 895	11 692	11 515
Demersal	675	2 635	3 927	7 250	4 820	3 400	3 250	10 850	20 050	17 755	24 842	45
Shark	3 092	17 119	11 848	5 522	3 130	3 340	9 171	6 945	12 270	1 500		
Coral fish		250	10	120			100			20	140	20
Large pelagic	330 731	284 797	109 069	125 857	151 385	68 151	133 155	160 539	37 480	18 272	25 175	51 325
Small pelagic	1 552	23 148	47 688	26 280	19 202	705	7 545	19 678	5 562	6 175	955	9 820
Land waters											15 000	
Others	230	398	16 475	80								75
Total	340 881	338 293	205 837	174 890	185 031	88 606	183 516	231 987	100 150	66 617	77 804	72 800

## 9.3. Catch production

102. The catch production reported by 60 fleets during fishing during 2019 was 1 718 tonnes. Where the highest production was reported in January and February amounted to 340 881 kg and 338 293 kg while the lowest occurred in June with the production of only 88 606 kg. In general, the production of catches throughout the year did not show a certain pattern, but there was a decline after February and experienced a very significant change in September. The total production of catches varies per WPP but WPP 571 is still very small compared to other WPP.



*Figure 39.* Monthly catch production in 2019

## 10. Challenges and obstacles of the fishing logbook and e-logbook implementation

103. In implementing the fishing logbook and e-logbook that runs so far, there are several factors that pose challenges and obstacles to implementation, namely:

- a) Delay in issuing logbook regulations. As is known, the logbook policy is in accordance with Law 45/2009, but the Minister of Marine Affairs and Fisheries Regulation on Technical Guidelines for the Implementation of the Fishing Logbook only came out in 2014. It is impacted to the delay of the enactment e-logbook to the fishing catch activity also impacted to the availability of fish catch data.
- b) Data verification and validation process. Vessel verification is carried out by the port. While validation must be checked for each attribute in filling e-logbook one has to check whether it is practical or not. The problem is when a vessel get a large amount of catch, then when it was fed into the system, the validator must validate one by one with the amount of data that entered. Thus, the validation process still takes time and potential of human error.
- c) The readiness of supporting facilities and infrastructure at the Fishery Port. At present, the outreach of e-logbook at fisheries ports managed by the central government is relatively good. However, in regional-managed fisheries ports (PPP and PPI) users of e-logbook applications are still low. This is due to the lack of supporting facilities such as laptops and internet on PPI as well as HR and *Syahbandar* personnel operations that are required to activate e-logbook are not yet sufficient. Thus, the improvement of the implementation of e-logbook having a stagnation state.
- d) There is no sanction mechanism for vessels size below 30 GT (permits by regions). So far the realization of the use of e-logbook is still focused on large vessels over 30 GT where the regulations have been arranged according to the KKP's records. For vessels size below 30 GT, the regulation has not been regulated by the regional government. Without sanction mechanism, the mandatory subject for e-logbook will have a slow improvement.
- e) There has not been an analysis of user upgrades and manual logbook analysis with e-logbook. It is necessary to analyse and evaluate the impact of transformation using manual logbook with e-logbook. It is expected that with the use of e-logbook the level of use, reporting and compliance can be increased compared to manual logbook.
- f) The minimum level of regional participation (provincial and district government) in supporting the implementation of e-logbook in fishing ports managed by local governments. This was seen in PPP Kranji, Lamongan and PPP Bajomulyo Pati. This condition is caused by the majority of fishing activities, using trawl fishing gear which is prohibited fishing gear that are regulated by the central government. Thus, the implementation of e-logbook to the fishing vessels whom using trawl are couldn't be done. Because the fishing gear itself is rejected by the central government. Furthermore, it is causing the data collection activities are not carried out properly by the fishery port manager.
- g) Small-scale fishers shows a high willingness to using e-logbook. However not many of them meet the minimum requirement to using e-logbook such as Android gadget. On the other hand, several of them wants to use the e-logbook but are rejected because of their fishing gear which is prohibited by the regulation.
- h) The limit numbers of MMAF Observer to assist MMAF to collect the catch data onboard using E-Logbook. Beside encouraging the boat owners to self-collect the catch data using e-logbook application, MMAF also have observers who will join several fishing vessel sailing. However, the numbers of observer are limited compare to the total numbers of fishing vessels in Indonesia.

- i) The role of observers are limited to collect the fish catch data. However, to have a good fisheries practice, human factor such as human rights practices onboard should be included in the data to provide comprehensive information.

## 11. Recommendations

1. To increase the outreach of e-logbook users, the Directorate General of Capture Fisheries, the MMAF needs to disseminate and coordinate with the Provincial Marine and Fisheries Agencies. It is expected that the application of the e-logbook receives technical support from the Provincial DKP through the Port Technical Services Unit which is the authority of the provincial government.
2. Develop the auto validation process on the e-logbook system to decrease the potential of human error and to increase the effectiveness of time.
3. MMAF should increase collaboration with partners to increase compliance by putting more efforts to disseminate the use of logbook (and e-logbook) to the broader fishermen (particularly small-scale fishermen). The collaboration could be like supporting facilities and infrastructure at the Fishery Port such as laptops, gadgets and internet.
4. In the revision of the Minister of Marine Affairs and Fisheries Regulation No. 48/2014 regarding the Fishing Logbook, it is necessary to strictly regulate the mechanism of sanctions against non-compliance or violation of the implementation of the e-logbook. It should be regulated to improve the accuracy of the data. With accurate data, the policy maker should have a comprehensive understanding to make a good regulation.
5. Conduct an analysis of user upgrades and manual logbook analysis with e-logbook. It is necessary to analyse and evaluate the impact of transformation using manual logbook with e-logbook. It is expected that with the use of e-logbook the level of use, reporting and compliance can be increased compared to manual logbook.
6. Add the fish figures in the E-Logbook application. The addition of the fish figure is to facilitate the skipper in identifying fish.
7. Increasing the role and capacity of observers of fishing vessels, including the verification process and validation of logbook data. The role of observers in the future is expected to not only record and report catches but also record fishing activities involving *Anak Buah Kapal (ABK)* and indicated forced labour or fisheries human rights violations.
8. Increasing the dissemination and training on the use of e-logbook to vessel captains and fishermen intensively, especially in regency/city areas that have a high fishing fleet and high capture fisheries production.

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