Indonesia Central Java white prawn
Trammel net and Trap
Three-Year Evaluation Report

Version 1.3, November 2022

FIP Information

Target species scientific name(s) and common name(s) [state target stock(s), if relevant]	*Fenneropenaeus merguiensis* Banana Prawn
Fishery location	Area 71 (Pacific, Western Central), Javan Sea, Central Java Province, Indonesia
Gear type(s)	Pot/Trap, Trammel net
Estimated FIP Landings (weight in tons)	108 tons

Vessel type(s) and size(s)	 Figure 1. Fishing vessel. Source: From Pre-assessment report (Johan et al., 2020) Small vessels of < 10 t GT
Number of vessels	270
Management authority	DKP Province (Departemen Kelautan dan Perikanan Provinsi) Central Java *(Department of Marine and Fisheries Provincial level)*
Assessor name(s)	Vineetha Aravind
Assessor Organization/Affiliation	Independent MSC Technical Auditor

Date of report completion	28.07.2024

FIP Background (Optional)

The FIP is an initiative of PT Cassanatama Naturindo, and is in the Wedung area, Demak, Central Java, Indonesia and is part of FMA 712. A FIP was initiated in 2017 in collaboration with WWF-Inodnesia under the Seafood Savers Programme. In Dec 2020, an update Pre-assessment was conducted by Johal et al., Control Union.
The FIP has made considerable progress after that.

Stakeholder Consultation & Meetings

Name	Affiliation	Date and Subjects Discussed
Heri	FIP Consultant	26th July 2024 • Perahu Data and Perahu App data collection process • Enumerator training and data • Lost gear retrieval • Minimums size regulation • Quota based fishery • Primary species management • Catch composition • Logbook implementation • Research on stock status and stock abundance
Ardley Widjaya	PT. Cassanatama Naturindo (owner/director)	
Kandiyas Kurniawan	PT. Cassanatama Naturindo (FIP Coordinator)	
Fairus Fikri	PT. Cassanasatama Naturino (enumerator)	
Muhammad Ramdhani	PT. Cassanatama Naturindo (staff, field officer)	
Andini Kusuma Sari	PT. Sahabat Laut Lestar (App developer)	

Summary of Findings and Recommendations

It was a pleasure to review the progress of this small-scale fishery. Despite various limitations the FIP has made progress in many areas including:

- Bringing changes in the social scenario
- Introduction of the ‘Perahu data’ an app for effective data collection
- Creating awareness about ETP
- Working with the government of Indonesia in bringing out a new regulation called ‘Penangkapan Ikan Terukur’ (Quota Based Fishery)
- Collaborating with other shrimp FIPs and planning to prepare a management plan

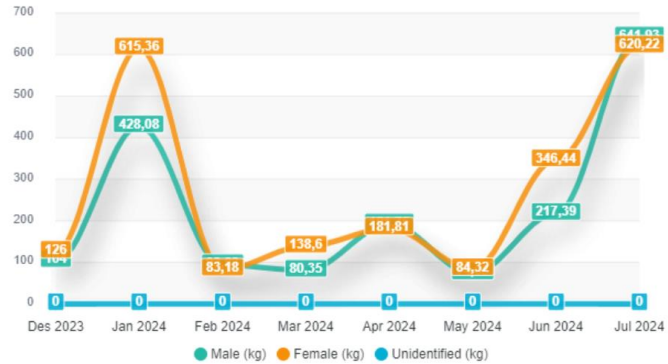
Based on the audit, I would like to bring the attention of the FIP to some areas which would help them to score better. These are just suggestions.

- Include collection of data of lost gear/retrieval in ‘Perahu data’
- Prepare a management strategy for the minor primary species, *Portunus pelagicus*, maybe working with the blue swimming crab FIP in Indonesia
- Study the survival of released ETP species, maybe the research scholars of UNDIP can do it
- Study the benthic organisms of the fishing area, like molluscs, impact of fishing activity on them etc.
- Have records of how the FIP has used the knowledge and suggestions of fishers in managing the fishery

Summary of MSC Performance Indicator Scores

Principle	Component	Performance Indicator		Previous Score 2023	Current Score 2024	Rationale or Key Points
1	Outcome	1.1.1	Stock status	60-79	60-79	The score remains the same but the FIP has made progress in this PI. There is clear evidence that the fishery is moving towards assessment without RBF. The fishery is collecting logbook data from 2018. In March 2023, the Indonesia government issued new regulation called ‘Penangkapan Ikan Terukur’ (Quota Based Fishery). This new regulation will divide Indonesia water into several zones that combines FMAs. There will be zones for Industries, small scale fisheries, and recreational fishing. In each zone, there will be quota for each fishery, including Penaeid shrimp species. The

						logbook data from the fishery will be able to use as base for government to set up the quota for the target species. The system is planned to be enforced by Jan 2025 and the year 2024 will be considered as transition period. During July 2023, the company signed an MoU with PT. Sahabat Laut Lestari (SLL) to develop an app for data collection called ‘Perahu Data’. The idea is to start data collection to verify the logbook that is being submitted by fishers, so that data can be used to understand the trend and fishing pattern. During Oct-Nov, 2023, various trials were conducted and training given to fishery coordinators to use the app. The idea is to use the app as a fishery logbook and data source for MMAF. This application is still in its development process and there are plans to include legal records related to fishing, such as identity cards, fishing permits, vessel permits, and so on. Currently, ‘Perahu Data’ exists in two versions – one used by enumerators to record sample landing data, and the other used by fishermen to record daily catch data. For the last three months, the fishers’ version is integrated into the PerahuApp application and is usable in offline mode.

						 • Comparison data catch male and female each months from Desember 2023 until July 2024 Figure 2. Data collection through ‘Perahu data”. Source: Client material

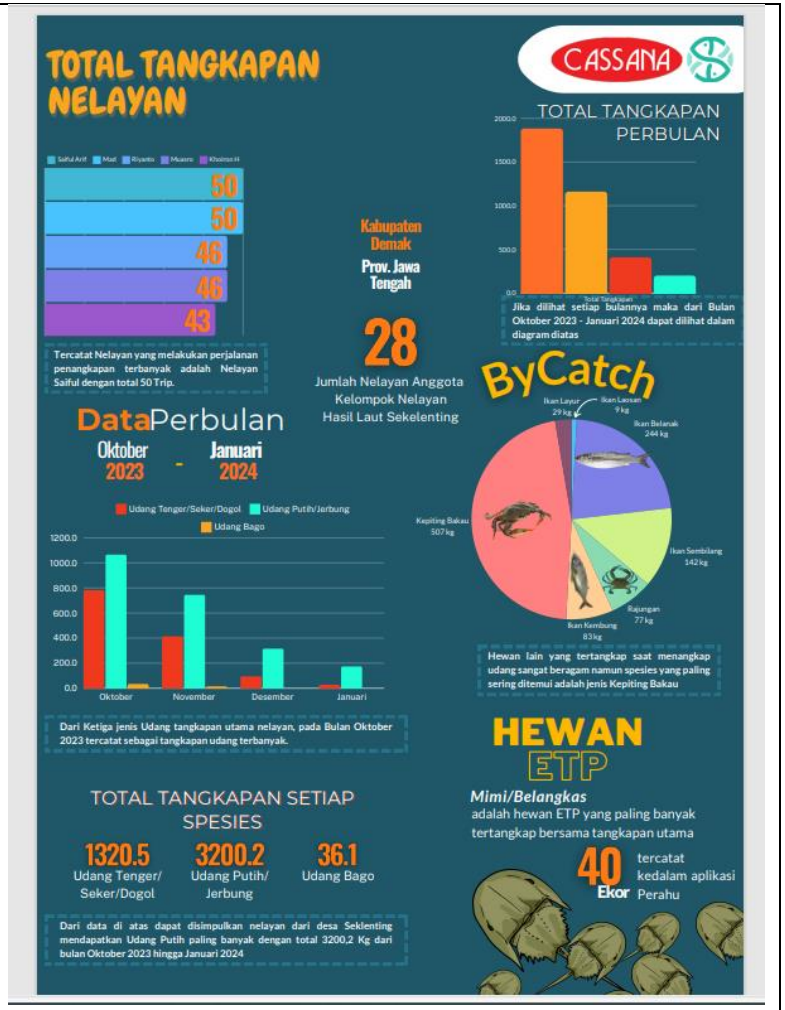


Figure 3. Data collection through ‘Perahu nelayan”. Source: Client material

The FIP has decided to collaborate and work with the two other shrimp FIPs in Indonesia from South Kalimantan. In the light of these discussions, during Sept-Oct 2023, the FIP also held discussions with Brawijaya University. It was decided that all the shrimp stocks can be assessed using SPR method. This is shared with the local university

						of the province, that has agreed to do the stock assessment of the FIP, the Diponegoro University. The FIP has also hired additional enumerators and given them training in data collection using 'Perahu data'. They are collecting data using the app for the last seven months (*stakeholder consultation*). Apart from this, there are undergraduate students from UNDIP doing various research on shrimp fishery like population dynamics, stock connectivity, gear effectivity, water quality, social economy, etc.
		1.1.2	Stock rebuilding	N/A	N/A	
	Management	1.2.1	Harvest Strategy	<60	<60	Some elements of harvest strategy are present/or in the state of implementation. For example, there is monitoring at landing sites using enumerators and a new app 'Perahu data' (which is in the process of implementation). The FIP has also trained additional enumerators in 2023 for data collection using the app. The app is supposed to improve the monitoring system. Discussions are going on with PSDI to incorporate the Perahu App data with the e-logbook system. The FIP has also signed contract with Brawijaya University for conducting stock assessment and the methodology is finalized. Currently there are no control measures for the fishery like mesh size regulations, MLS etc. the nature of the fishery itself is offering reduced fishing pressure. The fishers do not depend on the fishery as their sole livelihood. Also, fishing is low during the fasting month of Ramadan and during rainy season (*personal communication, stakeholder consultation*). The government of Indonesia has signed an order for introducing quota system. It is planned to be enforced by

						Jan 2025 and the year 2024 will be considered as transition period. A Harvest control rule is still missing, but the FIP looks like moving towards it.
		1.2.2	Harvest control rules and tools	<60	<60	The fishery has not yet developed reference points against which the management has to be implemented. Therefore, the score remains the same. At the same time, the activities of the FIP have advanced the fishery towards developing an HCR soon. As stated above, the government has introduced a quota system which will be enforced by Jan 2025. The app, 'Perahu data' will help in collecting and monitoring fishery data. The FIP has also decided to do stock assessment using SPR method and signed a contract to that effect. This data can be used to develop an HCR and support HS.
		1.2.3	Information and monitoring	<60	<60	The FIP is working with PT. Sahabat Laut Lestari (SLL) and developed an app for data collection called "Perahu Data". The app has two versions – one used by enumerators to record sample landing data, and the other used by fishermen to record daily catch data. However, in the next 3 months, the fishers' version will migrate to the PerahuApp application and will be usable in offline mode. The FIP has also hired additional enumerators and trained them. They are collecting data using the app for the last seven months (*stakeholder consultation*). The FIP is also in discussion with universities and government in using the data collected for monitoring the status of the fishery and for stock assessment. Currently there is regular monitoring of fishery removals by the UoA, but the same cannot be said about other fishery removals. According to stakeholder information,

						other fishery removals (mainly by mini trawls) are limited, but is not currently accounted for. Presently, I do not think there is an increase in the score, but once the data from the app is analysed and stock assessment conducted, the score could improve. The FIP has made major improvement in this area.
		1.2.4	Assessment of stock status	>80	>80	This meets 80 as RBF was done for 1.1.1 in the pre-assessment. Currently there is no stock assessment for the fishery, but the FIP has decided to work with Brawijaya University to do the same. It was decided to use SPR methodology for the assessment.
2	Primary species	2.1.1	Outcome	>80	>80	The Blue swimming crab is the only primary species. it is managed by reference points in Indonesia, the stock is fully exploited and is healthy. BSC is considered as minor primary species during the PA as its percentage was only 3%. The data from Perahu data (presented during stakeholder meeting) also proves that the % of BSC in the catches is very low.
		2.1.2	Management strategy	>80	>80	SG 80 is met as there are no primary main species for this fishery. At the same time there are no management measures to minimize the impact of UoA on the minor primary species, *Portunus pelagicus.* While working on the HCR and HS the FIP could also investigate this.
		2.1.3	Information	<60		Currently only limited information is available on the impact of UoA on BSC stock. But with the analysis of Perahu data collected by enumerators and filled in by fishers (*Perahu Nelayan*), the FIP can have enough information to develop a management strategy.
		2.2.1	Outcome	<60	<60	In collaboration with PT. Sahabat Laut Lestari (SLL), FIP has launched an app called ‘Perahu data’ for data

	Secondary species					collection from the fishery. The app has two versions, one used by fishers, as an e-logbook, which replaces the paper logbook. The other version is used by enumerators. The FIP has also recruited additional enumerators and trained them. The FIP now has seven months of data and will anlayse this once they collect a years' data (*stakeholder consultation*). The score of this PI remains the same for now, but once the analysis is completed the score can be improved.
		2.2.2	Management strategy	<60	<60	The FIP is collecting data on catch using the 'Perahu data' app (described above). Once this data is analysed the FIP can develop a management strategy to manage the secondary species, in collaboration with the Government. For now, the score remains the same.
		2.2.3	Information	<60	<60	Once the FIP analyse the data from the app, 'Perahu data' (described above), there will be enough information to score this PI. For now, the score remains the same.
	ETP species	2.3.1	Outcome	<60	<60	The FIP has identified ETP species as turtles, whale sharks and horse shoe crabs. The FIP is collecting interaction reports through the app 'Perahu data'. The FIP is also creating awareness among fishers (awareness poster in local language was presented to the auditor) to reduce the impact of fishery on ETP species. Horse shoe crab and turtles usually survive after releasing, but it is not sure whether the FIP is conducting studies on % of survival after release. I am not sure about the survival of whale sharks and the other species of small sharks mentioned in the stakeholder meeting. It would be great if the FIP could consider studying the survival of these species too. There is improvement in this PI with continuing data collection and possibility of analysis. This could give an idea on direct effect of UoA on the ETP species. What is unavailable is the indirect effect of the UoA like ghost

						gear, population dynamics. The FIP has collected spatial data and impact of the fishery and found that the footprint is relatively small and the sediments are mostly silt and mud. Thus, it could be assumed that the fishery might not change the habitat much.
		2.3.2	Management strategy	<60	<60	Currently there is data collection on ETP interaction, and awareness creation on identifying and releasing ETP species. But whether there are management measures in place, other than the fishers voluntarily releasing the ETP species is not known at this stage. Also, there are no alternate measures to reduce the impact of fishery on ETP species. The score remains the same.
		2.3.3	Information	<60	60-79	The FIP with has introduced the app 'Perahu data' and is collecting data through fishers and enumerators on ETP interactions. Thus, information is available for identifying the ETP species and devising a management strategy soon. The score is increased here.
	Habitats	2.4.1	Outcome	>80	>80	The FIP has worked on the spatial data and fishery impact on the habitat. The study proved that there are no VME in the area, no coral reef ecosystem nor seagrass bed and the sediments are mostly silt and mud therefore, the fishery is highly unlikely to cause serious or irreversible harm to the habitats. From the GPS data it is confirmed that the fishing pattern is consistent and has no tendency to change the location. The study proves that though the fishery is happening adjacent to coral areas, it is not overlapping.
		2.4.2	Management strategy	<60	<60	Currently the fishery has not developed a strategy to manage the habitat and therefore a score increase cannot be given.
		2.4.3	Information	>80	>80	The study conducted by Heri (2023) has information necessary to understand the impact of gear on habitat.

						The study has identified there are no VMEs or seagrass habitats in the fishing area. This can justify the FIP increasing its score to 80. I would suggest that the FIP could collect data on the benthic organisms of the area and the fishery's impact on them for further improving this PI.
	Ecosystem	2.5.1	Outcome	60-79	60-79	There is no increase in score. The PA has not listed out the key elements of ecosystem and currently I am not sure whether they are identified by the fishery. The fishery must identify broader ecosystem elements such as trophic structure and function, community composition, and biological diversity. There is some study on the spatial distribution and fishery impact on the habitat, but it is not discussing the impact of fishery on the biodiversity of the area.
		2.5.2	Management strategy	<60	<60	As far as the assessor is aware there are no management measures like regulation on catching breeding shrimps, juveniles, closed areas, or closed seasons. Therefore, there is no change in score.
		2.5.3	Information	60-79	60-79	There is a study on the spatial distribution and fishery impact, which if extended to include ecosystem impacts could help the FIP to score higher in this PI.
3	Governance and Policy	3.1.1	Legal and customary framework	60-79	60-79	Though there is no score increase, the FIP has made considerable progress in this PI. There is logbook data collections and a new system of e-logbook through an app 'Perhau data' is introduced. FIP has trained fishers and enumerators in this. In March 2023, the Indonesia government issued new regulation called 'Penangkapan Ikan Terukur' (Quota Based Fishery). This system will be fully enforced by Jan 2025 and 2024 is considered as transition period.

						The FIP is also in the process of conducting stock assessment and once it is conducted, an HCR and HS can be developed.
		3.1.2	Consultation, roles, and responsibilities	60-79	60-79	There is no change in score for now, but it seems the FIP could improve this score soon. The awareness sessions and socializations the FIP is conducting can be regularized. This PI can improve if the FIP can show that they have considered fisher stakeholder suggestions while developing and implementing the app.
		3.1.3	Long term objectives	60-79	60-79	No change in score for this PI
	Fishery specific management system	3.2.1	Fishery specific objectives	60-79	60-79	The score could increase once the quota system is established and a FMP is formed.
		3.2.2	Decision making processes	<60	60-79	The decision of the Indonesian government to introduce quota system ‘Penangkapan Ikan Terukur’ and the introduction of e-logbook system “Perahu data’ are examples of how the management system responds to scientific research and make decisions accordingly. Therefore, a score increase seems appropriate.
		3.2.3	Compliance and enforcement	60-79	60-79	The score remains the same as there was no evidence given to auditor to show that the fishers comply with regulations. At the same time the auditor is aware that the FIP is conducting regular awareness for fishers. Together with BBPI Semarang, the company conduct training for fisher on 'fisher competency certificate' (Sertifikat Kecakapan Nelayan). The certificate is needed to make sure the fishers are complying with the regulation as it is needed when they want to renew their vessel registration. 100 fishers were trained and there will be another training in the future until all fishers in the KUBs get the certificate.
		3.2.4	Management performance evaluation	60-79	60-79	For better monitoring of the fishery the FIP has introduced a data collection app ‘Perahu data’and is givng training to

						fishers and enumerators. The Indonesian government has introduced quota-based system ‘Penangkapan Ikan Terukur’ which will be enforced by Jan 2025. Thus, there are tools to improve the monitoring and management performance. It seems the FIP is taking effort in improving this PI. Though at present there is no score change.

Environmental Workplan Results

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Explanation
Fishery-dependent data collected to assess the impact of fishery on bycatch species	**Assess the UoA impact on bycatch species**	2.3.3, 2.3.1, 2.5.3, 2.5.1, 2.1.3, 2.1.1, 2.2.3, 2.2.1	On July 2023, the company signed a MoU with PT. Sahabat Laut Lestari to develop an app for data collection called "Perahu Data". The app has two versions- one filled in by fishers at sea and one filled in by trained enumerators at landing centres. There are plans to later integrate both the data. This will replace the paper logbooks and help in synchronizing the data. The FIP is planning to analyse the data after one year. Currently there is seven months data.
Footprint of fishery mapped	**Collect footprint on the habitat**	2.3.1, 2.5.3, 2.5.1, 2.4.3, 2.4.2, 2.4.1	During June 2023, the FIP start installing Pelagic Data System on the vessels of all KUBs. GPS data collected from Pelagic Data System were mapped against type of sediments and bathymetry, resulting in a map of fishing areas. No seagrass beds nor VMEs were identified in the fishing areas. It was found that the area of fishing takes place where only silt/slightly gravely mud gets sedimented. Thus, the impact of fishery on habitat seems to be minimal.
Effective data collection assured through ‘Perahu data,’ the data collection app. Stock status methodology finalized after discussion with researchers.	**Conduct an appropriate stock assessment of target species**	1.2.4, 1.2.3, 1.1.2, 1.1.1	On March 2023, Indonesia government issued new regulation called Penangkapan Ikan Terukur (Quota Based Fishery). This new regulation will divide Indonesia water into several zones that combines FMAs. There will be zones for Industries,small scale fisheries , and recreational fishing. In each zone, there will be quota for each fishery, including Penaeid shrimp species. The system will be implemented by Jan 2025 and the year 2024 is considered as transition period.

			On July 2023, the company signed a MoU with PT. Sahabat Laut Lestari to develop an app for data collection called "Perahu Data". The FIP has trained both fishers and enumerators in using the app and data collection is continuing for the past seven months. The logbook data from the fishery will be able to use as base for government to set up the quota for the target species. In September – October 2023, discussions with other shrimp FIPs and Brawijaya University led to the decision to use SPR to define the status of shrimp stocks in all three shrimp FIPs, namely Central Java Shrimp FIP, Kotabaru Shrimp FIP, and South Kalimantan Shrimp FIP. It was decided to use the data collected through "Perahu Data". The FIP has also taken help of UNDIP student scholars in conducting research related to shrimp genetics and population dynamics in Demak waters.
Steps taken to ensure compliance to regulations.	**Conduct compliance review**	3.2.3	The FIP has signed an MoU with local government at municipal level (DKP Kabupaten) to work together in implementing the improvement program and to initiate a co-management body involving all stakeholders in the areas. The FIP also has plans to enter into an agreement with PP Morodemak to gather data from DKP Province (surveillance unit) to see the compliance of the fishery and work together to improve compliance. A key issue identified is that socialization of regulations are not very effective, with fisher attendance low. The FIP collaborated with BBPI Semarang, in conducting training for fishers on 'fisher competency certificate' (Sertifikat Kecakapan Nelayan). This certificate is necessary to ensure compliance with regulations and to renew vessel registration. 100 fishers were trained. The FIP has plans to repeat the training in the future until all fishers in the KUBs get the certificate.
Steps taken towards effective data collection, management, and cooperation with other shrimp FIPs	**Develop Fisheries Management Plan FMA 712 for Shrimp fishery**	2.5.2, 2.4.2, 3.1.2, 3.2.2, 3.2.1, 3.1.3, 3.1.1, 3.2.4	In Jan 2022 there were two National FIP Coordination meeting held by PSDI to gather all FIP leads and implementer in Indonesia. It was decided that MMAF will coordinate with all government stakeholders in the Province to support all the FIPs in preparing a management strategy for each fishery. There was also consideration to have shrimp as priority commodity in the FMA 712. When a fishery become priority commodity, there will more detailed regulation and management plan for it.

			It was also decided to include the FIP as an industrial stakeholder in the FMC. The FIP has signed an MoU with local government at municipal level (DKP Kabupaten) to work together in implementing the improvement program and to initiate a co-management body involving all stakeholders in the areas. The FIP also has plans to enter into an agreement with PP Morodemak to gather data from DKP Province (surveillance unit) to see the compliance of the fishery and work together to improve compliance. A key issue identified is that socialization of regulations is not very effective, with fisher attendance low. During Jan 2023 an MoU was signed with UNDIP research team for data collection, ETP campaign, social policy campaigns and socio-economic research in the shrimp fishery. The FIP has plans to collaborate with local fisheries centres in initiating study or review on the trammel and pot that used by the fishers in the supply chain. On March 2023, Indonesia government issued new regulation called Penangkapan Ikan Terukur (Quota Based Fishery). This new regulation will divide Indonesia water into several zones that combines FMAs. There will be zones for Industries,small scale fisheries , and recreational fishing. In each zone, there will be quota for each fishery, including Penaeid shrimp species. The system will be implemented by Jan 2025 and the year 2024 is considered as transition period. On July 2023, the company signed a MoU with PT. Sahabat Laut Lestari to develop an app for data collection called "Perahu Data". The FIP has trained both fishers and enumerators in using the app and data collection is continuing for the past seven months. The logbook data from the fishery will be able to use as base for government to set up the quota for the target species. In September – October 2023, discussions with other shrimp FIPs and Brawijaya University led to the decision to use SPR to define the status of shrimp stocks in all three shrimp FIPs, namely Central Java Shrimp FIP, Kotabaru Shrimp FIP, and South Kalimantan Shrimp FIP. It was decided to use the data collected through "Perahu Data". During the multistakeholder meeting on 18th July 2024, there were discussions to develop a multistakeholder platform for formulating the fishery management plan, either at national level or at the provincial level. This

			needs support from research to define the stock boundaries. The research is ongoing, might need to extend nationwide as the stock seems across the provinces.
Data on ETP interactions collected through 'Perahu data'	**Reduce unwanted mortality of secondary species and ETP species**	2.3.3, 2.3.2, 2.3.1, 2.5.3, 2.5.1, 2.2.3, 2.2.2, 2.2.1	The FIP has identified ETP species as turtles, whale sharks and horse shoe crabs. The FIP is collecting interaction reports through the app 'Perahu data'. The FIP is also creating awareness among fishers (awareness poster in local language was presented to the auditor) to reduce the impact of fishery on ETP species. Horse shoe crab and turtles usually survive after releasing, but it is not sure whether the FIP is conducting studies on % of survival after release. I am not sure about the survival of whale sharks and the other species of small sharks mentioned in the stakeholder meeting. The FIP has taken the help of UNDIP student scholars in ETP awareness campaign. The FIP has plans to collaborate with local fisheries centres in working on fishing gears in Indonesia, to start doing study or review on the trammel and pot that used by the fishers in the supply chain, also how to minimize bycatch and ETP interaction in the process. CCTV footage shows there are no ETP interactions, though at present I am not sure the period of coverage and whether the CCTV is installed in all vessels. There are plans to involve Yayasan TAKA, the local NGO that raise awareness of coastal ecosystems and protected species in the campaign and data collection.
Steps are taken towards effective data collection, stock assessment and cooperation with other shrimp FIPs and management	**Support HS and HCR development in 712**	1.2.4, 1.2.2, 1.2.1, 1.2.3, 3.2.1	In Jan 2022 there were two National FIP Coordination meeting held by PSDI to gather all FIP leads and implementer in Indonesia. It was decided that MMAF will coordinate with all government stakeholders in the Province to support all the FIPs in preparing a management strategy for each fishery. There was also consideration to have shrimp as priority commodity in the FMA 712. When a fishery become priority commodity, there will more detailed regulation and management plan for it. It was also decided to include the FIP as an industrial stakeholder in the FMC. The FIP has signed an MoU with local government at municipal level (DKP Kabupaten) to work together in implementing the improvement program and to initiate a co-management body involving all stakeholders in the areas. The FIP also has plans to enter into an agreement with PP Morodemak to

			gather data from DKP Province (surveillance unit) to see the compliance of the fishery and work together to improve compliance. A key issue identified is that socialization of regulations is not very effective, with fisher attendance low. During Jan 2023 an MoU was signed with UNDIP research team for data collection, ETP campaign, social policy campaigns and socio-economic research in the shrimp fishery. The FIP has plans to collaborate with local fisheries centres in initiating study or review on the trammel and pot that used by the fishers in the supply chain. On March 2023, Indonesia government issued new regulation called Penangkapan Ikan Terukur (Quota Based Fishery). This new regulation will divide Indonesia water into several zones that combines FMAs. There will be zones for Industries,small scale fisheries , and recreational fishing. In each zone, there will be quota for each fishery, including Penaeid shrimp species. The system will be implemented by Jan 2025 and the year 2024 is considered as transition period. On July 2023, the company signed a MoU with PT. Sahabat Laut Lestari to develop an app for data collection called "Perahu Data". The FIP has trained both fishers and enumerators in using the app and data collection is continuing for the past seven months. The logbook data from the fishery will be able to use as base for government to set up the quota for the target species.

Supporting References

- https://fisheryprogress.org/fip-profile/indonesia-central-java-white-prawn-trammel-net-and-trap
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