Does Indonesia’s fisheries governance ready to achieve SDG 14? The role of multi-stakeholder in fisheries policy

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Abstract. Sustainable development goals (SDG) 14 in Indonesia have a target for fisheries and aquaculture conservation and sustainable production, and it integrates within a set of regulation of fisheries and aquaculture value chain. However, it is a challenge to have an engagement of stakeholders, especially business practitioners, following the Government of Indonesia’s (GOI) regulations for their readiness and preparedness. This research objective is to assess current Indonesia’s fisheries management and governance in sustainable development. The study was carried out based on a desk study, and it was combined using a focus group discussion (FGD) and in-depth interviews. The result linked to the possible impact on SDG 14. The results proved that the regulations and practices of GOI in sustainable fisheries were directed by business practitioners to achieve SDG 14. Indeed, the study also found that many business practitioners had limited readiness and preparedness on sustainable fisheries management engagement. It could be an obstacle for sustainable fisheries management and governance implementation, as it could not protect Indonesia from future biodiversity loss. The problem of imbalance between the SDG 14 goal and stakeholders’ readiness and preparedness could be improved by the support of the role of multi-stakeholders in national fisheries institutions. This study concluded that multi-stakeholders’ engagement is essential to achieve SDG 14.

1. Introduction
Indonesia marine and fisheries are vulnerable due to human exploitation for business and human disturbance from many activities. Overexploitation that over the biological limit by Indonesian and foreign fishermen is threatening the aquaculture and marine resources [1]. To countermeasure this situation, the government of Indonesia incorporates sustainable development goal (SDG) 14 as their target in the national medium term development term (RPJM) [2]. It was followed by a set of regulation in the fisheries and aquaculture value chain by the Ministry of Marine Affairs and Fisheries that focus on fisheries and aquaculture conservation and sustainable production to become a global player in the global fish food system in the Large Marine Ecosystem [1, 3, 4]. Despite the complexity of fisheries, the government of Indonesia is pushing this plan to be implemented to reduce fish overexploitation and defending the ecosystem from degradation. Then, the government expects SDG 14 could be achieved by smarter and more effective fisheries and marine policy [5].

There is a challenge to reach the government SDG 14 target for Indonesia’s fisheries and marine industry [1]. Since the program requires all stakeholders to follow all regulations, the multi-
stakeholder coordination is not meet the ideal goal, and the program has an economic impact caused by a trade-off between sustainability and aquaculture [3]. Many of the stakeholders, including business practitioners, are not ready and prepare their activities to cope with this program. In results, these problems are holding back the implementation. Further understanding of Indonesia’s fisheries management and governance is needed to solve the problem and accelerate the program to achieve the SDG 14 target.

To our knowledge, limited studies could be found to focus on Indonesia’s fisheries management and governance in sustainable development to achieve the SDG 14 goals. Many available studies focus on the biological, conservation, and fisheries value chain [2, 6]. Other focuses on the future of Indonesia’s fisheries and aquacultures [3, 7]. Therefore, this paper’s objective is to assess current Indonesia’s fisheries management and governance in sustainable development to achieve target 14.4: Sustainable fishing. We expected to unravel the bottleneck in the multi-stakeholders’ platform in Indonesia. The finding will give a foundation for future policymaking and research.

2. Materials and methods
A qualitative approach was used as the main framework of the study. We used semi-structured questionnaires for collecting the data to observe the target 14.4: Sustainable fishing as the indicator of SDG 14. There were four stages to assess the objective of this study framework. First, an extensive literature study was performed to explore the current fisheries problems and situation. The data collected was consisted of fisheries and marine regulations, economic contribution, and fisherman welfare.

Second, three focus group discussions (FGDs) with multi-stakeholder in fisheries sectors were held to discuss and assess the findings. FGD was used to gather information from stakeholders with similar experiences to discuss a specific topic of fisheries and marine governance. Some findings were clarified for each meaning, and some opinions/views were collected. Each FGD was guided by a facilitator to help the participant in the discussion. These FGDs attended by 16 academia, eight business practitioners, 11 government officers, and nine representatives from the community.

Third, we validated the FGD results by in-depth interviews with the multi-stakeholder in fisheries sectors and the government. The in-depth interviews were performed to the FGD participants to clarify some issues that were mentioned during the FGDs. The in-depth interviews were to allow participants to give their views without influence from other participants. As our study was addressing the need to identify and evidence themes based on a qualitative approach using FGDs and in-depth interview, the set of sources were treated as qualitative data and pre-coded. Then, we examined the entire set of information and subjected to axial coding for the latter the thematic evidence.

Lastly, we linked the results with the possible impact on SDG 14. We compared the findings based on each regulation related to SDG 14 and how the regulation implemented and performed. The comparison was to analyze the performance of the regulation related to the stakeholders’ acceptance.

3. Results
The marine and fisheries industry was divided by the three classifications based on the level of direct involvement in fishing industries: primary, secondary, and tertiary industries. The study identified that there were three stakeholders as the key players in the fisheries sector sustainability, namely fishermen (capture), fish farmers (aquaculture), and fish processors (processed fish) (Figure 1). Their activities were directly related to the fishing activities that exploited fish resources for fish production to meet consumers’ demand. These key actors were supported by supporting businesses such as fishing gear, vessels, and ports as they are part of the primary industrial subsystems in the marine and fisheries industry. Other stakeholders that involved had slightly less influence in fisheries sustainability compare to these three stakeholders. The government played a role in regulating fishing management. Advocating role was played by fisheries association the Indonesian Tuna Association (ASTUIN), Indonesian Rajungan Management Association (APRI), and Nusantara Fisheries Society (MPN).
According to Figure 1, each stakeholder plays a role in the bottleneck of multi-stakeholders’ platform that influences the practice of fisheries management and governance to achieve SGD’s 14.

Under the industrial system, the stakeholders’ activities were controlled by government regulations. The results found that among 33 fisheries management regulations, two relevant regulations influence the sustainable and responsible fisheries management practice in Indonesia. First, a Code of Conduct for Responsible Fisheries (CCRF) by FAO in 1995 was known as an international regulation base in supporting sustainable and responsible fisheries management. Second, a law No. 31/2004 JO UU No. 45/2009 was the local Indonesian law that stated the principle of optimal and sustainable (economic) benefits, guaranteed sustainability of fisheries resources (ecology), and the participation of the community/local wisdom (social). These regulations were the primary reference for other regulations in Indonesia that are directing business practitioners to manage their fisheries management sustainably. The practice was expected to meet the direction of SDG 14 targets.

Figure 1. Multi-stakeholders in the fisheries sector.

Table 1. The map of authority control for capture fisheries under Indonesia Law No. 23 the Year 2014.

| Central government | Provincial region | Regency/city region |
|--------------------|-------------------|---------------------|
| 1. Management of capture fisheries in sea area above 12 miles | 1. Management of capture fisheries in sea area until 12 miles | 1. Empowerment of small fisherman in regency/city area |
| 2. Estimation of national fish stock and the number of allowed fish catch (JTB) | 2. Issuance of capture fisheries business permit for a fishing vessel with size above 5 GT – 30 GT | 2. Management and organization of Fish Auction (TPI) |
| 3. Issuance of capture fisheries business permit for: a. fishing vessel with size above 30 Gross Tonnage (GT); and b. Under 30 Gross Tonnage (GT) that use foreign capital and/or foreign worker | 3. Establishment of development location and management of the provincial fishing port | 3. Management and implementation of Fish Auction (TPI) |
|                     | 4. Issuance permit of a fishing vessel and fish transport vessel procurement with size above 5 GT – 30 GT |  |
|                     | 5. Registration of fishing vessel above 5 GT – 30 GT |  |
In order to ensure the fisheries practices could achieve the optimal benefits based on the fish resources sustainability, we found that one regulation was design to consider a customary law and/or local wisdom. This policy was to ensure that the structure of fisheries control is stable and adaptive to change with regards to sustainability. The regulation was set up under a Law No. 23 of 2014 that the authority structure was divided into a different level as follows: the central, provincial, and regency/city governments (Table 1). This division was made to bridge between the sustainability target and the fisheries practices. The intention was to ensure the local practice could be considered in the sustainability target; at the same time, sustainability could be introduced to the local community.

**Figure 2.** A framework of conservation, supervision, and utilization in fisheries management in Indonesia.

**Table 2.** Fisheries management framework and sustainability readiness and preparedness.

| Framework | Conservation | Monitoring | Utilization |
|-----------|--------------|------------|-------------|
| Sustainability | Conservation Activity (Recovery of Habitat & Fish Resources) | Fish Resources Management | Fish Capture Activity |
| Key Actors | Government | Government | Fishermen |
| | Fishermen | Coastal Community | Fish farmers |
| | Fish Farmers | Coastal Community | Fish processors |
| | Coastal Community | | Coastal Community |
| Regulation | Available | Available | Available |
| Implementation | Limited | Limited | Limited |
| Actors’ Readiness | Low | Medium | Low |
| Actors’ Preparedness | Low | Medium | Low |
Further findings showed that, in the framework of the Indonesia Medium Term Development Plan (RPJM) 2019-2024, other issues were considered related to natural resources preservation such as eco-labelling or fisheries certification. The goal was to give incentives and rewards for sustainable fishing practices as a contribution to ocean preservation. Figure 2 illustrates the Medium Term Development Plan (RPJM) 2019-2024 framework to synergies between the functions of conservation, supervision, and utilization.

However, even the framework for sustainability was set up; the study found that there was a gap between regulation and implementation (Table 2). The gap may be caused by the medium to the low level of the key actors’ readiness and preparedness to implement the sustainability framework. Only monitoring part of the framework that had a medium level of actors’ readiness and preparedness is.

4. Discussion
The multi-stakeholder landscape shows that Indonesia is not ready and well prepared to face SDG 14. Primarily, three out of many actors involved in fisheries business, namely fishermen, fish farmers, and fish processors were not ready. They were the key actors that play an essential role in achieving the SDG 14. Their economic motive drives their business behavior, while biological and ecological sustainable was not considered as important motives. Their business behavior was supported by the previous approach of the maritime and fisheries economy development to endorse national economic growth, which indicated by GDP growth, export value, and food security [8]. This economic growth was expected to have benefits in business and job creation [9]. While environmental development, such as zero waste and sustainability, was put as the last priority [4]. As a result, fisheries exploitation is considered beyond the ecological limit [7]. It endangers future ocean biodiversity. With the current adapted sustainability goals, there is a gap between government regulation and business practitioners’ actions. Since the business practitioners were not immediately adapted their business to the current regulation. Furthermore, it is a threat to the promotion of sustainable fisheries management and governance.

The government was expected to play a role in balancing the sustainability framework between conservation, monitoring, and utilization in the economic development of national fisheries [1]. The government’s role is to increase the participation of the marine and fisheries business practitioners by designing incentives and special treatment in the regulation [8]. It was expected to motivate the business practitioners’ engagement as well as improving competitiveness [9]. Such efforts could be made by debottlenecking, for instance, easiness in fishing permits, enhancing investment climate, providing local tax incentives, and improving government services. However, the gap between regulation and implementation needs more than infrastructure and connectivity set up.

No bridging plan from the previous goal to the current sustainability target caused the gap between regulation and implementation. The previous development approach of the maritime and fisheries economy was solely based on industry and services growth. During that time, a limited effort was focused on integrating the fish resources approach in the maritime and fisheries economy [8]. Therefore, many business practitioners were not ready to accept the change and adapted sustainability regulation. Most of them were business practitioners that focused on the local market and had no incentive to perform sustainable fisheries management [9]. They faced a trade-off between sustainability and economic interest [10]. Thus, they had no preparation to engage in sustainable fisheries management. It caused an imbalance between the SDG 14 target and stakeholders readiness and preparedness [8]. Differently, it was better practice by business practitioners who focus on the international market since they need to fulfill an export requirement that integrates a sustainability certification. However, they were a small number compared to local business practitioners. These differences in fisheries practices pull the government towards more communication problems rather than finding solutions. Therefore, the approach needs to be changed, from the ‘problem’ approach to the ‘solution’ approach, which has to be carried out by all stakeholders. The change is a challenge in the development of marine and fisheries in the future.
The problem of imbalance between the SDG 14 target and stakeholders’ readiness and preparedness could be improved by the support of the role of multi-stakeholders in national fisheries institutions. All stakeholders’ active role is important to achieve SDG 14 target [1]. The government’s role is to facilitate all other actors to engage voluntarily in the sustainability program, especially the business practitioners [8, 11]. In the large marine ecosystem context, the role has to encourage a new policy that needs to balance the sustainability framework by reforming the governance [4, 12, 13]. The government program should constantly build the communication bridge between stakeholders to be ready and prepare to achieve SDG 14 target. The business practitioners’ role is to involve, certainly actively, it is not only by joining the government program but also in deciding the direction of future fisheries business [13]. In this role, fishermen have to cope with ocean biological limits that suitable for their economics’ interest [14, 15]. A similar role is applied to the coastal community. Lastly, the multi-stakeholder platform has to be set up as the foundation for better cooperation for sustainable fisheries management and governance [5, 13, 16]. It can be on a national platform or even smaller platform that encourages the local community, such as cluster business in a small region or village [11, 12]. The platform could encourage the role of the university in bridging the multi-stakeholder partnership for sustainable development [17].

5. Conclusion
As the fisheries sustainability issue becoming urgent, the policy to achieve its SDG 14 target needs to be evaluated for its readiness and preparation. The current situation of fisheries actors and the fisheries governance involved is critical to determine the position of Indonesia fisheries management to achieve the objective. Moreover, to check whether the direction is heading to the correct pathway.

This study found that government policy has been set up in the direction of SDG 14. However, the main actors are not ready and prepare to engage in this government objective. The source of the problem is due to limited engagement from the stakeholders in the policy and objective setting. More importantly, it gives a hint that the government could not solely solve this problem. It well noted that the involvement of multi-stakeholders is important to set up the direction and the strategy to achieve the common goal. Therefore, this study concluded that multi-stakeholders’ engagement is important to achieve SDG 14.

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