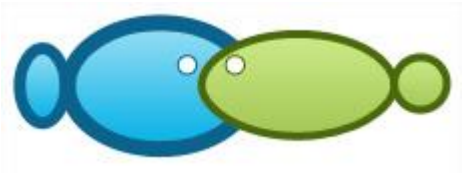

Historical aspects and stakeholders' perceptions in the coastal waters of the Spelman Strait, Central Buton Regency, Indonesia

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Abstract. Efforts to control fishery resources in the coastal waters of the Spelman Strait are inseparable from a long history of exploitation. History shows that the coastal waters of the Spelman Strait are rich in fishery resources that stimulated the economic growth of fishermen at that time. This research will assess the status of further management of fisheries resources. The coastal fishery facilities of the Spelman Strait have been destroyed due to the use of fishing gear that is not environmentally friendly, such as the use of explosives, trawling and poor law enforcement. If this condition remains unregulated, it will cause harm to the aquatic environment. Participation of stakeholders is the right and fundamental approach for the sustainability of fisheries resources in the coastal waters of the Spelman Strait. Local government action is also required to ensure that stakeholder involvement continues to play an active and continuing role in the management of resources.
Key Words: fisheries capital, overexploitation, participation.

Introduction. The waters of the Spelman Strait are currently bordered by two districts, Bombana Regency and Central Buton Regency. The Kabaena Timur District represents the Spelman Strait, the Bombana Regency in the west, and the Mawasangka District represents the east of the Central Buton Regency. The distance between them is ±14 km.

The waters of the Spelman Strait play a vital role in meeting the needs of fishermen in particular, society in general and of food security. The waters of the Spelman Strait have a remarkable history of exploitation. Based on historical viewpoints, the first use was made of sources from the local community (social knowledge) or there were activities to exploit fishery resources from post-independence in 1946 to 1947. At that time, the activities conducted by the local community in the Spelman Strait were fishing and using purse seines. The capacity of the straits is rich in fishery resources, as evidenced by plentiful catches (social knowledge). The productive effects have not contributed substantially to the development of the economy of the community. That's because the catch marketing system wasn't priced in money, but it was also via the barter system.

In 1948, to boost their economy and health, the fishermen who were on the coast of the Spelman Strait went to sea/harvested fish in the waters of Karimun Jawa and Bangka Belitung, and then sold them to the Gresik and Banyuwangi regions. This is because the price of fish in the region is already priced in currency, which is more expensive than the price of fish in Buton. Fishermen traveled in tandem (three or four boats) and a round trip to the area would take around 40 to 50 days. This era lasted until the 1970's.

The operation in the Spelman Strait had begun to develop around the 1970s. The fisherman's catch has begun to yield results. There was an increase in welfare, marked by the fisher's houses along the coast of the Spelman Strait, where the houses made of

planks/cruising became concrete houses. The number of local fishermen increased, and fishermen began to use ring trawlers (landa) and lift nets (kelong). The nucleus of economic development is starting to appear marked by the number of shops in operation. The drop-out rate is falling, and people are going to higher education. Several words established in the community related to the Spelman Strait are "if you want to eat crayfish, crayfish (lobster), salted fish, crab, anchovies just come to the areas around the coast of the Spelman Strait."

In mid-1997, the fishing activities in the Spelman Strait were completely paralyzed; the previous fishery resources, the pride and support of the people living around the Spelman Strait, who relied on them for their livelihoods, began to gradually decline. At the end of 1997, the height of its fishing operation in the Spelman Strait witnessed a significant decline in capture rate. This incident was triggered by rampant fishing with non-environmentally friendly equipment. Fishing sites (FADs) have been bombed; bombings have destroyed coral reefs, trawlers, and the community's vast array of coral reefs as building materials. Coral reef habitat disruption in the coastal waters of the Spelman Strait (Muis et al 2020) has resulted in a reduction in the diversity of coral fish (Muis et al 2020). Harm to the coral reef environment has reduced the living coral cover in the coastal waters of the Spelman Strait by 37.71% and the dead coral height by 37.17% (Muis et al 2019).

From 1998 until now, small-scale fishermen who have survived and are still developing have benefited from coral reef ecosystems. Fishermen who have grown over the last ten years are anchovy fishermen using a life net boat. Fishermen who rely on coral reef habitats and anchovy fishermen have a different social status. Fishermen who use coral reefs are usually small and have small capitals and boats under 1 GT, compared to anchovy fishermen who have big money, middle to upper class citizens.

According to Kittinger et al (2013), small-scale fisheries sustain the livelihoods of many coastal communities around the world where ninety percent (90%) of the world's fishermen are directly involved in small-scale fishing, some 34 million people, and 100 million are involved in related activities (Béné et al 2007; FAO 2016b). Small-scale fisheries management has also developed around the world in recent decades (FAO 2016b).

The purpose of this study is to explain the history of the use of the Spelman Strait and the involvement of management stakeholders. Disclosure of the history of the Spelman Strait is the first time it has been done to demonstrate the true truth of the exploitation of the fishery wealth of the Strait.

Material and Method

Time and place for study. The research period lasted three months from August to October 2020 in villages along the coast of the Spelman Strait. Seven people aged 70-75 years were interviewed to discover historical details about the Spelman Strait, which was performed through in-depth interviews. Respondents for stakeholder engagement by Focus Group Discussion (FGD) consisted of 31 community leaders, faith leaders, youth leaders, non-government organizations (NGOs), District Fisheries Service, District Chiefs, District Military Commanders, District Police Chiefs, and heads of the Spelman Strait coastal village.

Data analysis. Collecting data using the purposeful sampling approach imply that the respondent is a key actor and a key historical actor in the history of the Spelman Strait, whereas the coastal waters of the Spelman Strait are controlled via the FGD. This research was descriptively qualitative-phenomenological. According to Moleong (2010), a qualitative approach often explores the life prospects of respondents, while phenomenology is a phenomenon encountered in a life without external intervention (Moustakas 1994; Creswell 2007; Irianto & Subandi 2015).

Results and Discussion

History. Based on the results of interviews with historical actors who are very experienced fishermen and who rely on fishing resources in the coastal waters of the Spelman Strait, several descriptions are obtained: (1) of the use of the coastal waters of the Spelman Strait since the post-Independence time of the Republic of Indonesia in 1945; (2) of the barter system which was still in effect after the independence, so that fishery products were stuck with fulfilling food needs such as the exchange of cassava with fish, corn with fish, and so on; (3) because of the trawler scheme, fishermen in the Spelman Strait are searching for fish in the Karimunjawa and Bangka Belitung waters. The results are being traded in the Banyuwangi Region, and Gresik, since it was priced in income, (4) since 1970 the waters of the Spelman Strait were exploited until 1997, (5) the fishermen in the coastal waters of the Spelman Strait at that time experienced an increase in the level of welfare, which was marked by the fishing houses transformation to concrete houses. Children of the fishermen continued to educate themselves.

This history indicates that the coastal waters of the Spelman Strait are the basis for fishermen's livelihoods to make ends meet and bring value to their families and descendants.

The stakeholder. The results of the FGD with stakeholders (Table 1) show that the management of the coastal waters of the Spelman Strait needs a genuine commitment to ensure that the coastal waters of the Spelman Strait can be sustainable both now and in the future. The management of the coastal waters of the Spelman Strait needs unity in the safety of fishermen who use environmentally friendly equipment to capture fish. Freitag et al (2019), resource management needs consensus, so it is hoped that environmental disturbances to the ecosystem will be well handled. On the other hand, not contributing stakeholders to management can interrupt capital. It has detrimental impacts on livelihoods (Muis et al 2020) and research results show that every year there are 30 cases of bomb use in capturing reef fish in the coastal waters of the Spelman Strait.

Table 1

Frequency, Focus Group Discussion (FGD) management of coral fisheries in the coastal waters of the Spelman Strait

No	*Component*	*Total respondents*	*Frequency*		*Percentage (%)*		*Total percentage (%)*
			Yes	*No*	*Yes*	*No*	
1	Fishery resources?	31	31		100		100
2	Positive contribution to fisheries?	31	31		100		100
3	Conflict between local fishermen and outside fishermen?	31	8	23	25.8	74.2	100
4	Conflict between local fishermen?	31		31		100	100
5	The involvement of related agencies has been going well?	31	4	27	12.9	87.1	100
6	Law enforcement?	31		31		100	100
7	Fisherman catches with a bomb?	31	7	24	22.6	77.4	100
8	The use of bombs is still worth defending?	31	12	19	38.7	61.3	100
9	Bombs destroy aquatic ecosystems?	31	18	13	41.9	58.1	100
10	Sand mining needs to be maintained?	31	8	23	25.8	74.2	100
11	Garbage disposal on the coast?	31	31		100		100
12	Do you need alternative livelihoods?	31	31		100		100
13	Do you need a fish landing spot?	31	31		100		100

14	Collaboration of government, other stakeholders and the community?	31		31		100	100
15	Involvement of religious figures?	31		31		100	100
16	The involvement of religious leaders helps save fishery resources?	31		31		100	100
17	The local wisdom of coastal communities, needs to be raised again?	31	23	8	74.2	25.8	100

In addition, Muis et al (2020) confirmed lax law enforcement against non-environmentally friendly consumers of reef fish in the coastal waters of the Spelman Strait. Participation of stakeholders is also required to reduce the use of non-environmental social resources. Unity needs awareness from stakeholders about the value of maintaining it. Aquatic ecosystems need to ensure the food security of the coastal community's fish resources.

Stakeholder cooperation, in which religious leaders are supposed to play a spiritual role, that destroying the environmental resources is a great sin because religious leaders have an important role in society in general. Communal prayer leader of mosque and king play a key role in fisheries management in Ambalau Island, South Buru Regency, generally known as Sasi Laut, as well as the Sasi Church in the Haruku and Kei Islands, whose main roles are Pastors (Adrianto et al 2011). As was done in the Bay of San Miguel Philipines, the role of stakeholders in the community that utilizes blue swimming crab resources is by preparing seeds and are required to actively participate in conserving the resources (Macale & Nieves 2019).

Conclusion. Based on the history, the Spelman Strait was rich in fishery resources. However, the overexploitation of fishery resources became the main cause of the reduction of the resource's quality. As the result, the fishing catches are reduced in quantity. To overcome the issue, it needs the involvement of stakeholders to educate the fisherman society to protect the resource environment and perform management of fishery resources.

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Conflict of Interest. The authors declare no conflict of interest.

References

Adrianto L., Al Amin M. A., Solihin A., Hartoto D. I., 2011 [Local construction of fisheries resource management in Indonesia]. ISBN: 978-979-493-268-1. PT. Penerbit IPB Press [in Indonesian].

Béné C., MacFayden G., Allison E. H., 2007 Increasing the contribution of small-scale fisheries to poverty alleviation and food security. FAO Fisheries Technical Paper 481. Rome, Italy.

Creswell J. W., 2007 Qualitative inquiry and research design: choosing among five traditions (2nd.ed). Thousand Oaks, CA: SAGE Publications.

Food and Agriculture Organization of the United Nations (FAO), 2016b Technical and Socio-Economic Characteristics of Small-Scale Coastal Fishing Communities, and Opportunities for Poverty Alleviation and Empowerment. FAO, Rome, Italy.

Freitag A., Vasslides J., Townsend H., 2019 Are you thinking what I'm thinking? A conceptual modeling approach to understand stakeholders' assessments of the fate of Chesapeake oysters. Marine Policy 99–110. Elsevier.

Irianto, Subandi, 2015 [Phenomenological study of teacher happiness in Papua]. Gadjah Mada Journal of Psychology, 1(3):140-166 [in Indonesian].
Kittinger J. N., Finkbeiner E. M., Ban N. C., Broad K., Carr M. H., Cinner J. E., Gelcich S., Cornwell M. L., Koehn J. Z., Basurto X., Fujita R., Caldwell M. R., Crowder L. B., 2013 Emerging frontiers in social-ecological systems research for sustainability of small-scale fisheries. Curr. Opin. Environ. Sustain. 5:352–357.
Macale A. M. B., Nieves P. M., 2019 Stakeholders' perception on the status of blue swimming crabs *Portunus pelagicus* (Linnaeus, 1758) and performance of lying-in hatchery concept in San Miguel Bay, Philippines. AACL Bioflux 12(2):413-416.
Moleong L. J., 2010 [Qualitative research methodology]. Bandung: Remaja Rosda karya [in Indonesian].
Moustakas C., 1994 Phenomenological research methods. Thousand Oaks, CA: SAGE Publications.
Muis, Kurnia R., Sulistiono, Taryono, 2019 Coral reefs status and fish species in coastal waters of Spelman Straits, southeast Sulawesi, Indonesia. AACL Bioflux 12(5):2020–2029.
Muis, Kurnia R., Sulistiono, Taryono, La Mani, 2020 An overview of reef fish catching seasonal patterns in the coastal waters of Spelman Strait, in Central Buton Regency, Indonesia. AACL Bioflux 13(4):2218-2227.
Muis, Kurnia R., Sulistiono, Taryono, Azhari, Risfandi, Ariyanto D., 2020 The evaluation of reef fisheries management in the Spelman Strait coastal waters of Central Buton Regency, Indonesia. Plant Archives, Volume 20, No. 4. Pp. 5169-5176.
Muis, Kurnia R., Sulistiono, Taryono, 2020 Diversity of coral reef fish in the coastal water of Spelman Straits, Southeast Sulawesi. IOP Conference Series: Earth and Environmental Science, 420(2020)012021. doi:10.1088/1755-1315/420/1/012021.

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