

## CONSERVATION OF CRAB AND MANGROVE IN PERSPECTIVE OF LOCAL POLICY AND WISDOM

Dhea Maria Leonita  
Roberth Kurniawan Ruslak Hammar  
Carina Budi Siswani  
Filex Melanton Labobar

### ABSTRACT

*Government policy formulation in crab and mangrove conservation in the form of an invitation at the Central level, West Papua Province and Teluk Bintuni Regency have accommodated policies and conservation of living natural resources and general ecosystems, not yet specific; and Special policy formulations for the conservation of crabs and mangroves in Teluk Bintuni Regency have not been accommodated in regional regulations or regional head regulations. The local wisdom of the Indigenous Peoples in Bintuni Bay, especially the Sougb and Wamesa tribes, contributes to the preservation of crabs and mangroves in terms of fishing time, crab size, fishing gear, wood size, and the application of sasi in each customary area. Policy formulation at the implementation level is followed up with regulations on regional legal products, which are appropriate for the implementation of policies for the conservation of crabs and mangroves in accordance with the mandate of the RPJM Regional Regulation and Regional Regulation Number 1 of 2019 concerning Protection and Recognition of Indigenous Law Communities; The local wisdom of MHA as living law should be synergised and accommodated in local regulations, the preservation of crabs and mangroves, as a manifestation of the legal function as a social engineering function.*

**Keywords:** Policy; Local wisdom; preservation; crab and mangrove

### INTRODUCTION

Indonesia is one of the archipelagic countries which has the largest area in the world. Indonesia's territorial waters are not less than 5.8 million square kilometers, and have as many as 17,480 islands are consisting of large and small islands with a line length of approximately 95,186 km, which is the longest tropical party line in the world after Canada. Indonesia is part of the coral triangle, Indonesia's coastal and marine areas have the highest biodiversity in the world (megadiversity country). High biodiversity is not only caused by a very strategic geographical location, but is also influenced by seasonal climate variations, currents or seawater masses that affect the water masses of the two oceans, as well as the diversity of habitat types and ecosystems contained in them that need to be managed and maintained with one of which is the mangrove ecosystem. Natural resource management requires extra careful handling, especially with regard to natural resources, both fauna and flora, which require a sustainability policy. Sustainability conditions will become vulnerable when the method of extracting products from fauna and flora does not pay attention to conservation aspects.

Teluk Bintuni Regency is known as the second best place for mangrove growth in Indonesia after Raja Ampat. Whereas, the Bintuni mangrove has a forest area of 225,367 hectares or 52% of the total mangrove forest in West Papua. Bintuni mangrove forest covers 10% of the mangrove forest area in Indonesia. Mangroves or commonly referred to by the community as mangroves or mangosteen are one of the sources of life for the community. The bottom of the mangrove forest is a hiding place for crabs and the biggest commodity in Bintuni Bay. Mangrove forest in Teluk Bintuni Regency has tremendous potential, among others, as a major barrier to tsunamis, as well as functioning as a barrier to coastal erosion, as a breeding ground as well as habitat for shrimp and crabs.

Crab habitat in mangrove forests has a symbolic relationship of mutualism, which contains high economic potential and guarantees financial benefits if exploited. Mangrove forest in which crabs breed is a potential and source that brings prosperity to the community as well as a sustainable ecological function. An area that covers 10 percent of the entire mangrove area in Indonesia, the economic potential of the Bintuni Bay mangrove forest is able to provide more value for the community. There are three mangrove biota that are the mainstay of the surrounding community such as jerbung shrimp (Penaeidae), mangrove crabs (Geryonidae) and snapper (Scianidae). There are biota make a major contribution to the export value of fishery products in Bintuni Bay. However, these fishery products are still minimally processed into food products that can provide added value. Mangrove crab, as one of the mainstay commodities of Bintuni Bay, especially on Babo Island or better known as Babo District, can provide added value if this commodity is transformed into processed food with various interesting variations.

The mangroves in Bintuni Bay must be preserved, since many mangroves in an area provide benefits for the surrounding community. It can meet daily needs such as social and economic needs firewood, house poles, food sources, and medicines. The presence of mangroves can produce animals such as crabs, shrimp, fish, and lembode caterpillars. Nevertheless, these animals can be sold for daily income. Physiologically, mangroves are also useful for reducing tsunami waves, absorbing waste, and protecting coastlines. There are many benefits and uses of mangrove trees, we can give it to the next generation, to our children and grandchildren. In the future, mangroves will remain sustainable with concerning conservation in the context of regional regulations is regulated in West Papua Special Regional Regulation Number 10 of 2019 concerning Sustainable Development, West Papua Province Special Regional Regulation on Guidelines for Recognition and Protection Customary Law Communities and Indigenous Territories; Pe Bintuni Bay Regency Regional Regulation Number 1 of 2019 concerning with Recognition and Protection of

Indigenous Law Communities in Bintuni Bay; and law number 32 of 2009, concerning to the Protection and Management Environment with all of these regulations pay attention to the environment preservation, including its flora and fauna.

According to the fact shown that the use of mangrove forests for daily needs and even exploitation for trade, which has contributed greatly to the destruction of mangroves in Bintuni Bay as stated by Yohanes Akwan. Forest cover is greatly increasing open and degraded, then threatened with damage due to local government development policies, company activities, and developments for population. Yonadab Sraun and Hendrik Runaweri described the damage to mangrove forests as follows: the area of mangrove damage was 18,381 hectares from 438,252 hectares in the West Papua Coast. Area has the largest mangrove forest in Bintuni Bay with an area of 225,367 hectares. In Bintuni Bay, damage reached 8,553 hectares. In Bintuni Bay, forest damage was a quite large and in 1996-2000, there was sharply increase in the area of mangrove forest clearing by HPH companies and the Chip Mill and Wood Chip Industry by 14,531 Ha/year, as a result the plants/mangroves were decreasing. This also resulted in a decrease in fish production in the waters of Bintuni Bay by 76.29 tons/year. In addition to the damage to mangroves, the next focus of attention is the threat and decline of a crab population.

Crab conservation must continue to be carried out for the sustainability of crab population in the conservation area of Bintuni Bay Regency, since the crab population in Bintuni Bay Regency from time to time, with slightly decreased. The director general of aquaculture at the Ministry of Maritime Affairs and Fisheries (KKP) Slamet Soebjakto explained that the decline in crab populations was influenced by export trade to outside cities such as Jakarta, Bali and East Java. Furthermore, traded crabs are less than 1 kilo. If left unchecked, the crab population will be threatened with extinction. These facts, Slamet stated that it is very appropriate if the government stipulates the regulation of the Minister of Marine Affairs and Fisheries Number 56 of 2016 concerning to the prohibition of catching and/or releasing lobster (*panulirus* spp.) crabs (*Scylla* spp.) and small crabs (*Portunus* spp.) from the territory of the Republic of Indonesia " The Ministerial Regulation is to protect crab stocks in nature". The formulation of the problems in this study are as follows: (1) How far is the formulation of government policies in the conservation of crabs and mangroves? (2) How does the local wisdom of the indigenous people of the Sough tribe contribute to the conservation of crabs and mangroves?

## LITERATURE REVIEW

### Local Policies and Wisdom

Policies are a series of concepts and principles that serve as guidelines and the basis for plans in carrying out a leadership job and how to act. All policies have had been issued by the government to a community need to be observed and adapted to the local habits of the people.

Some authorities of the Government and Regional Governments have been regulated in Government Regulation Number 38 of 2007. The authorities of the Provincial Government in the Maritime Affairs and Fisheries sector are as follows:

1. Implementation for policies with managing marine and fish resources in the marine area under an authority of a province.
2. Implementation and coordination of marine spatial planning policies in accordance with a marine potential map in the marine area with the provincial authority.
3. Implementation and coordination of policies in the framework of management for coastal areas and small islands are including natural resources in the marine area in the province's authority.
4. Implementation of policies on integrated management and utilization of marine resources between regencies/cities within the province's jurisdiction.
5. Implementing an integrated licensing policy for management and utilization of marine areas under a province authority
6. Implementation of policies in the context of empowering coastal communities between districts/cities within any province's jurisdiction.
7. Implementing and coordinating the harmonization of marine research in the province's marine authority area in the context of developing marine services.
8. The determination of policies and arrangements for exploration, exploitation, conservation and management of marine wealth in the marine area under a province authority
9. The determination and implementation of coastal reclamation policies and natural disaster mitigation in coastal and marine areas within a province authority
10. Implementation for coordination in terms of setting the boundaries of maritime areas bordering areas between countries in sea waters within a province authority.
11. Implementing and coordinating about mapping for the potential of marine resources in the territorial waters in the provincial authority.
12. Implementation of harmonization in the management area and marine resources with a provincial authority.
13. Implementation of coordination for management and conservation in the specific location by germplasm in marine areas under provincial authority
14. Implementation of coordination of exploration, conservation, and management of the wealth of the waters of lakes, rivers, swamps and other water areas in the province.
15. Implementation and coordination of zoning and spatial planning for waters within the province's authority area.
16. Implementing and coordinating the management of water conservation areas and water rehabilitation within province's jurisdiction.
17. Planning, utilization of supervision, and control of marine spatial planning under provincial authority.

18. Rehabilitation of coastal, small islands, and marine resources in the marine wealth management area within the province's authority.

An authority of the Regency area in the sea area is as far as one third of the authority of the provincial region. Since, an authority of the province is 12 miles and the authority of the district is 4 miles.

Local wisdom is all forms of wisdom based on good values that are believed, determined and maintained continuously over a long period of time (from generation to generation) by a group of people in a certain environment or area where they live. Local wisdom consists of two words such as local wisdom. In general, the notion of local wisdom, can be understood as local ideas that are wise, full of wisdom, good, which are embedded and followed by community members. Local wisdom is a combination of the sacred values of God's word and various existing values. Local wisdom is formed as a cultural advantage of the local community and geographical conditions in a broad sense. Wisdom and cultural products of the past that must continue to be used as a guide for life. Even though it has a local value with contained in it is considered universal. Local wisdom is a view of life and knowledge as well as various life strategies in the form of activities carried out by local communities in responding to various problems in meeting their needs. This local wisdom approach is also called traditional, indigenous or local knowledge.

Muhaimin Iskandar argued that in the life of the Indonesian people, there are social values with a form local wisdom and have become part of everyday life. Abrar Saleng stated that local wisdom is local values related to justice, equality, sustainability, exemplary, democratic, and religious values. Traditional wisdom, also means traditional knowledge, is more practical, such as knowledge of how to live well in an ecological community. In addition, any knowledge about how to maintain the life of each species as well as to maintain all life in nature itself. For this reason, there are always various rules, mostly in the form of prohibitions or taboos-about how to carry out life activities in nature, such as how to farm well, hunt well, catch fish well, cut down trees, travel and so on.

Indigenous peoples know very well when is the right time to travel long distances, open fields, go to sea to catch fish, hunt and so on. Traditional wisdom is holistic, because it involves knowledge and understanding of all life and all its relationships in the universe. Nature is a "web of life" that is wider than the sum total of its separate parts. Nature is a series of interrelated relationships with each other, furthermore understanding and knowledge of nature must be a comprehensive knowledge.

Ecologically, humans are one of the subsystems in the environmental ecosystem. Thus, humans are an integrated unit with their environment and between them a functional relationship is established in such a way. In this functional relationship, humans cannot be separated from their environment.

Humans will always depend on the environment, which is simultaneously influenced and ultimately impact to the ecosystem as a whole. Now, environmental sustainability is at a crossroads and the parties who have been considered to have caused great environmental damage are indigenous/traditional communities. However, from the results of decades of research, it is evident that what causes massive and massive environmental damage. It is not carried out by traditional communities, but by large industries and countries whose policies do not heed environmental protection.

Ridha Saleh, in his book "Ecocide: Politics of Environmental Crime and Human Rights Violations" stated that the symptoms of openly exploiting natural resources on a large scale have in fact led to acts of destruction and destruction of ecosystems, such as the source of environmental life as a result of ecocide. Currently, an ecological depression is caused more by the direction of development that does not pay attention to environmental sustainability and future generations. A development of environmental awareness in the global community and the Indonesian government's awareness are existence with environment. This like as a supporter of state development have encouraged the development of environmental law regulations. From the concept of environmental management, there are various new things in the regulation of Indonesian environmental law that need to be understood together in order to support sustainable development.

The environment is understood as a unitary space with all objects, forces, conditions, and living things, including humans and their behavior, affecting nature itself, survival, and the welfare of humans and other living creatures. Furthermore, according to Law Number 23 of 1997 concerning Environmental Management, it is explained that environmental management is an integrated effort to preserve environmental functions which includes policies for structuring, utilizing, developing, maintaining, recovering, monitoring, and controlling the environment.

This provision is emphasized in Article 2 of Law Number 32 Year 2009 which stated that environmental protection and management, which a systematic and integrated effort carried out to preserve environmental functions and prevent pollution and/or environmental damage are including planning, utilization, control, maintenance, supervision, and law enforcement. Furthermore, Article 4 regulates the Scope of environmental protection and management are including planning, utilization, control, maintenance, supervision and law enforcement. Environmental management is carried out with the principle of State responsibility, the principle of sustainability, and the principle of benefit aims to realize sustainable development with environmentally sound. The objectives of environmental management are:

- a. An achievement of harmony and balance between humans and the environment
- b. The realization of Indonesian people as environmental people who have attitudes and actions to protect and foster the environment
- c. Ensuring the interests of present and future generations
- d. Achievement of environmental functions sustainability

e. Controlled bu use of resources wisely

Probably, a protection of the Unitary State of the Republic of Indonesia against with impact through any businesses and/or activities outside the territory of the State causing environmental pollution and/or destruction.

Environmental management is not solely the responsibility from a government, a private sector, and the community also have a very important role in implementing environmental management policies. Everyone has the right and obligation to participate in environmental management. In addition, the preservation of environmental functions can be achieved. Maman Djumantri stated in general it can be said about "development is the process of managing natural resources and an environment to meet human needs in order to live in physical and spiritual prosperity". A process and method of implementation, the ultimate goal of development is social welfare (both physically and mentally) for all Indonesian peoples. If development is aimed at all Indonesian people, it should also include traditional or indigenous peoples who are scattered, isolated and marginalized. In order to meet the needs of human life, they will take advantage of what is available around their environment, for that humans will try to adapt in order to give birth to balance and order in society and the environment. This is an enactment for a social control system in the form of norms & laws (customs) with a product of society. In the group of indigenous peoples of Indonesia or known as the customary law community and the norms/laws that apply in this customary community are known as customary law.

The rules of behavior that become many habits of a customary law community in their development become customary law norms. Customary law to be called with law must contain certain sanctions, either in the form of physical sanctions or other fines.

One of the important events related to the recognition and strengthening of indigenous and tribal peoples departed from the results of the Earth Summit in Rio de Janeiro in 1992 with the issuance of the Rio Declaration on Environment and Development (1992). Principle 22 stated that indigenous and tribal peoples have an important role in environmental management and development because of their traditional knowledge and practices. Therefore, a state must fully recognize and support its entities, cultures and interests to provide opportunities and to actively participate in the achievement of sustainable development.

An existence of indigenous peoples by the state in Article 18B paragraph (2) of the 1945 Constitution which reads "The stated that any recognizes and respects customary law community units and their traditional rights". Furthermore, this provision also provides limitations as a condition for recognition and respect, such as long as the customary law community is still alive and in accordance with the continuous for community development.

In relation to the utilization and management of natural resources and environmental sustainability, these indigenous peoples with their local knowledge (indigenous knowledge), with the power to hold customary law, spiritual abilities and their religion. There are actually wiser than other communities. Additionally, local knowledge known as local wisdom grows and develops in the community as knowledge that is passed down from generation to generation as part of environmental adaptation.

The juridical acknowledgment of an existence with customary law communities along with local wisdom and their rights can be seen in Article 1 paragraph 30 of Law Number 32 of 2009, which stated that local wisdom is noble values that apply in the living order of the community to, among other things, protect and manage the environment live sustainably. Furthermore, in Article 67 paragraph (1b) of Law Number 41 of 1999 concerning about forestry, it was stated that customary law communities are recognized as having the right to carry out forest management activities based on applicable customary law and not contradicting the law. Article 6 paragraph (2) of Law Number 31 of 2004 concerning with fisheries stated that fishery management for the benefit of fishing and fish cultivation must consider community participation. Coastal areas and small islands, the government recognizes, respects, and protects the rights of indigenous peoples, traditional communities and local wisdom over coastal areas and small islands. They have been used for generations as a reference in the management of coastal areas and small islands sustainable.

The knowledge of indigenous peoples in natural resource management systems is extraordinary (showing a high level of knowledge) and very close to nature. In fact, the traditional environmental management system has proven to have an important value in maintaining and preserving the environment, including in the social and economic context, especially for indigenous peoples whose lives are highly dependent on fishery and agricultural products. In relation to the utilization, use and management of environmental resources and environmental protection. These indigenous peoples with their local knowledge/wisdom, the power to uphold their customary law, spiritual abilities, and the religion they follow. There are actually wiser than others. Indigenous peoples must be positioned as an integral part in the development process. It is means, an active participation of indigenous peoples must be responded positively by a government. Indigenous peoples must be given the freedom to be creative according to their potential, and balance. Development policies must be integrated while still being based on indigenous peoples who have customary law, as part of the national legal system that deserves to be acknowledged. An existence of indigenous peoples as part of the Unitary State of the Republic of Indonesia whose rights and customary law system are recognized, including the natural wealth in their territory. For this reason, indigenous peoples need to be given an opportunity to manage and take advantage with the natural resources in their territory in accordance with their local wisdom.

### **Crab Preservation**

Preservation is an effort to make something remain forever unchanged, which is carried out continuously, directed and integrated, in order to realize certain goals in the aspect of human stabilization, as well as activities to reflect one's dynamics. Mangrove crab (*Scylla serrata*) is one of the resources in the mangrove ecosystem that can be used for sylvofishery cultivation. This utilization is an alternative livelihood for local residents within the KNP area. Since, they can meet their daily needs without destroying the mangrove forest.

Various regulations have been conveyed from the entire coastal community regarding a level of forest damage. Since, many more various improvement efforts have been carried out by various parties starting from the government, community, and institutions engaged in the environment and the emergence of the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number: P 83 /MENLHK/SEKJEN/KUM.1/10/2016 concerning Social Forestry with one of the schemes being Village Forests. This context of empowering communities in and around forests and realizing fair and sustainable forest management, state forests can be managed for village welfare through village forest. This is motivated by problems that occur, such as economic problems, community welfare, and access to the use of forest products which are still limited. Utilization of non-timber forest products (NTFPs), especially aquatic products, such as mangrove crabs. It is still being carried out with alternatives that do not pay attention to conservation so that mangrove crabs can be harvested safely. The fishing gear system is not environmentally friendly and does not pay attention to the size of the crab when it is caught. An existence of people living in villages around coastal village forests will certainly affect to the level of preservation of mangrove crabs in the area or vice versa. The villages around the coastal village forest even more affect to the seasonal income of some crab fishermen.

### **Mangrove Conservation**

Mangroves are tropical and subtropical forest types that grow along beaches and rivers that are protected by forming formations along the coast that live from a combination of land and sea. An existence of mangroves which includes trees and shrubs belonging to 8 families and consisting of 12 generations of flowering plants is very important in resource management in most parts of Indonesia. The most important function of mangroves for coastal areas is as a liaison and balance between land and sea ecosystems. Mangrove forest is a provider of high biodiversity and has a function to support life.

Mangrove forest is also known as tidal forest, coastal woodland, vloedbosschen, and brackish forest. Mangroves are scattered throughout the tropical and subtropical oceans, only growing on beaches protected from waves.

Mangrove roots have a function to protect the land from waves and sea water seepage not only that mangrove wood has a good function to be used as building material, charcoal, paper raw materials, also used for other wood industries and craft. Indonesian people, especially people living on the coast in an area where mangroves grow. However, due to a lack of knowledge about the function of mangroves and their benefits from the government and the community. Mangroves are only seen as trees without seeing their uses, the trees are simply cut down to be used for various needs.

Mangroves in Indonesia grow and spread almost along the coast, but are only concentrated in the coastal areas of large islands, such as Sumatra Island, Kalimantan Island, Sulawesi Island, Halmahera Island, Java Island and Papua Island. On these large islands, there are large rivers and generally in the estuary areas with deltas of various shapes and sizes. A condition of the delta area contributes to the growth and development of mangrove forests in coastal areas, even though their thickness reaches tens of kilometers inland. Meanwhile, on small islands or in island groups, such as the Tanimbar Islands, Aru Islands, Kei Islands, Natuna Islands and Riau Islands, mangrove forests grow like thin clumps with a simple structure and are often single stands. As a natural resource found in coastal areas, mangrove forests have a strategic function as primary producers that are able to support and stabilize terrestrial and aquatic ecosystems around them. These functions are include providing food, shelter and laying eggs, as well as a place to live for aquatic organisms that live in the vicinity.

### **Settings about Mangroves**

Mangrove ecosystems are coastal wetland resources and life support systems as well as natural resources with very high value. Therefore, they need to be protected, conserved, and used sustainably for the welfare of the community. In the context of implementing community forest conservation, a government made collaboration together with PT. Perum Perhutani has developed a silvofishery pattern or an intercropping forest with fisheries. It has been successfully developed in mangrove forests in Subang, Purwakarta and Indramayu. This intercropping pattern turned out to be very profitable from the local economic, social, and ecological point of view.

Mangroves are maintained and some community have many benefits socially, economically, and environmentally. In principle, it can also be applied to people's ponds throughout Indonesia with intensive guidance from the local forestry and fisheries service. Many of the community members are finally aware and want to plant mangroves, especially if they feel it has something to do with the fish they get, or other benefits. For instance, people of Sinjai, South Sulawesi succeeded in planting, and maintaining mangroves. There was a link between mangrove conservation and their catch of fish. People of Eretan Wetan Village, Indramayu, was started planting mangroves after their land was eroded by the waves. Since, they are believed that mangroves could withstand the onslaught of sea waves. People in Jakarta want to plant mangroves in the Angke Kapuk wildlife sanctuary, since believe in its function as a bird habitat and microclimate stability.

### **Benefits and Preservation**

Mangrove forest areas in Indonesia are divided into production forests, national plants, wildlife reserves, nature reserves, and protected forests. Currently, management is the responsibility and authority of the forestry department, while non-mangrove areas located or planted by the community on community-owned land are called with community forests. On emergent land overgrown with mangroves, of course, it is the authority and responsibility of the local government. In the context of mangrove management, all parties continue to pay attention to the applicable laws and regulations, both in the fields of forestry, fisheries, and the environment.

## RESEARCH METHODS

This research was conducted in Bintuni District, Teluk Bintuni Regency, December 1-30, 2021. Respondents for Government policy issues in regulations that have an impact on the preservation of crabs and mangroves are local government officials, such as Regional Secretary, Head of Forestry Service, Head of Environment Service, Head of Fisheries Service, Head of the Department of Industry and Trade, SMEs, and Crab Fishermen. As for the issue of Local Wisdom that contributes to the preservation of crabs and mangroves, the respondents are 7 (seven) Sough tribal officials.

The types of data in this research study are qualitative data and quantitative data. Qualitative data is data with expressed in the form of a narrative that has meaning. While, quantitative data is a type of data in the form of numeric, can be measured or calculated directly as numbers or numbers. Data sources are primary data and secondary data. Primary data sources are data obtained directly from respondents. Meanwhile, secondary data sources are already available. Furthermore, secondary data is divided into primary legal materials, secondary legal materials, and tertiary legal materials. Primary legal materials are consist of legislation, jurisprudence and others; secondary legal materials consist of books, draft laws, and others. Tertiary legal materials are consist of dictionaries and others.

This research is a legal research using a normative juridical approach. Field research conducted through interviews with government and customary officials is an effort to obtain data regarding Government Policies in Regulations that have an impact on Crab Conservation in Mangrove Forests and Local Wisdom in synergy with Mangrove Forest Preservation Policies. This research is normative law research with requires data, both primary data originating from respondents and secondary data originating mainly from "legal materials". A primary data needed is in the form of information related to policies and local wisdom regarding the conservation of crabs and mangroves. The sampling technique was used to determine the respondents of this research is using purposive sampling technique. Legal materials as the main source of secondary data for this research consist of primary legal materials (applicable laws and regulations related to spatial planning principles); secondary legal materials (literature that explains primary legal materials), and tertiary legal materials (legal dictionaries, encyclopedias, and others). To obtain primary data from respondents, such as government officials and traditional leaders/tribal leaders as many as 15 (fifteen) people, as follows: three people from the sough tribe; person. This study also uses the interview method, with a guide of questions that have been prepared, then deepened. Meanwhile, to obtain secondary data, through document study. The analytical technique used is descriptive qualitative, such as the processing and analysis of qualitative data, the processing and analysis are includes: data reduction; simplification and presentation of data; verification of research results and conclusions.

## RESULTS

### Local Government Policy on Preservation Crab and Mangroves, Policies in laws and regulations

Local government policies in the preservation of natural resources are including crabs and mangroves, which have been stated in national policies as stated in Law Number 5 of 1990 concerning Conservation of Biological Natural Resources and Their Ecosystems. It is stated that Indonesia's living natural resources and their ecosystems have a position and role important for life. This is the gift of God Almighty, therefore it needs to be managed and utilized in a sustainable, harmonious, harmonious and balanced manner for the welfare of the Indonesian people in particular and mankind. In general, both now and in the future; that the elements of living natural resources and their ecosystems. There are basically interdependent with each other and influence each other, since a damage and extinction for one element will result in the disruption of the ecosystem; that in order to maintain that the utilization of living natural resources can take place in the best possible way, it is necessary to take conservation measures that living natural resources and their ecosystems are always maintained and able to achieve balance and attached to development itself.

In Article 5 and Article 13 of Law Number 5 of 1990, it is stated that:

1. Conservation of living natural resources and their ecosystems is carried out through the following activities with protection of life supports systems;
2. Preservation of the diversity for plant and animal species and their ecosystems;
3. Sustainable use of living natural resources and their ecosystems.

Preservation of plant and animal species is carried out inside and outside the nature reserve area. Preservation is by allowing the population of all types of plants and animals to remain balanced according to natural processes in their habitat.

Preservation of plant and animal species outside the nature reserve area is carried out by maintaining and breeding plant and animal species to avoid the danger of extinction.

A regard to the prohibition regulated in Article 21 of Law Number 5 of 1990 states that:

1. Everyone is prohibited from:
  1. taking, cutting, possessing, destroying, destroying, maintaining, transporting, and trading protected plants or parts thereof, alive or dead;
  2. Removing protected with plants or parts thereof, alive or dead from one place in Indonesia to another place inside or outside Indonesia.

Everyone is prohibited from:

1. Catch, injure, kill, keep, possess, maintain, transport, and trade protected animals alive;
2. Store, possess, maintain, transport, and trade protected animals that are dead;
3. Releasing protected animals from one place in Indonesia to another place inside or outside Indonesia;
4. Trade, keep or own the skin, body, or other parts of protected animals or goods made from these parts or release them from one place in Indonesia to another inside or outside Indonesia;
5. Take, damage, destroy, trade, store or possess eggs and or nests of protected animals.

An exception to the prohibition, regulated in Article 22 of Law Number 5 of 1990, stated that:

1. Exceptions to the prohibition as referred to in Article 21 can only be made for the purposes of research, science, and or rescue of a relevant plant and animal species.
2. The rescue as referred to in paragraph (1) is the giving or exchanging for plant and animal species to other parties abroad with the permission of government.
3. Exceptions from the prohibition on capturing, injuring, and killing protected animals can also be made in the event that for some reason with protected by animals endanger human life.

In the Teluk Bintuni Regency Regional Regulation Number 1 of 2019 concerning Recognition and Protection of Indigenous Law Communities in Teluk Bintuni Regency (Regional Gazette of 2019 Number 1) promulgated on February 25, 2019, Chapter X Management and Utilization of Natural Resources is described in Article 20 (1) The management and utilization of natural resources is carried out in a fair and sustainable manner; (2) The management and utilization of natural resources respects the local wisdom of the Customary Law community; (3) The management and utilization of natural resources takes into account the traditional rights of indigenous peoples; (4) The management and utilization as referred to in Paragraph (1) shall provide the maximum benefit for the welfare and sustainability of the Indigenous Law Community and the environment.

Various regulations regarding to the preservation of biological natural resources and ecosystems, flora and fauna in Teluk Bintuni Regency. It has not been formulated in regional legal products due to authority factors.

#### **Crab Conservation Policy (*Scylla spp*)**

The concretization of conservation policies, especially regarding crabs (*Scylla Spp.*) is contained in the Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia Number 17 of 2021 concerning Management of Lobster (*Panulirus Spp.*), Crab (*Scylla Spp.*), and Rajungan (*Portunus Spp.*) from Territory of the Republic of Indonesia.

Article 8 stated that paragraph (1) Catching, trafficking, and/or releasing crabs (*Scylla spp.*) with the harmonized system code 0306.33.00 for consumption purposes in or from the territory of the Republic of Indonesia can only be carried out with the following provisions:

- a. It is not in a state of egg-laying visible on the outer abdomen;
- b. Carapace width above 12 (twelve) centimeters or weight above 150 (one hundred and fifty) grams per head; and
- c. Catching shall be carried out using passive and environmentally friendly fishing gear in accordance with the provisions of laws and regulations.

Exceptions are contained in Article 8 paragraph (2) Provisions for catching crabs (*Scylla spp.*) as referred to in paragraph (1) are excluded for the following activities such as: a. implementation of education, research and development, assessment, and/or application; b. seeding, and/or application within the territory of the Republic of Indonesia. Furthermore, Article 14 stated that: the method of measuring and catching can only be carried out with a provisions of the Minister of Marine Affairs and Fisheries as listed in the Appendix which is an integral part of this Ministerial Regulation.

Article 18 Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia Number 17/Permen-Kp/2021 regulates the following prohibitions:

- a. Everyone is prohibited from releasing Lobster Seed (*puerulus*) outside a territory of the Republic of Indonesia.
- b. Everyone is prohibited from catching Lobster Bening Seeds (*puerulus*) that are not in accordance with the designation as referred to in Article 2 paragraph (1).
- c. Everyone is prohibited from catching lobster (*Panulirus spp.*) above the size of the Lobster Bening Seed (*puerulus*) up to 150 (one hundred and fifty) grams for sand lobster and up to 200 (two hundred) grams for Pearl lobster.

#### **Everyone is prohibited with:**

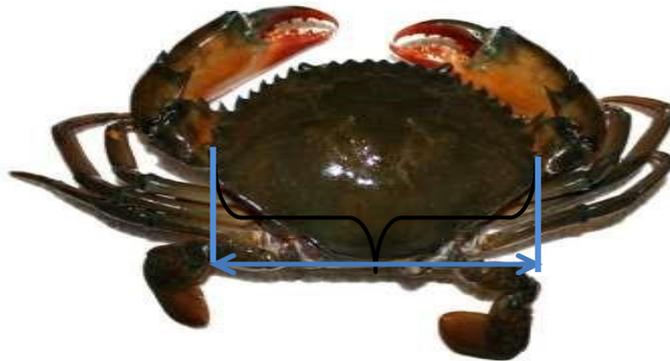
- a. Traffic in lobster seeds in conditions that are not in accordance with the provisions as referred to in Article 6;
- b. Catch and/or release lobster (*Panulirus spp.*), in conditions that are not in accordance with the provisions as referred to in Article 7;
- c. Catch, traffic, and/or release crabs (*Scylla spp.*) in conditions that are not in accordance with the provisions as referred to in Article 8 to Article 10; and
- d. Catch up, traffic, and/or release crabs (*Portunus spp.*) in conditions that are not in accordance with the provisions as referred to in Article 11 to Article 13.

Supervision in article 17 of the implementation of the Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia Number 17/Permen-Kp/2021 is as follows:

- a. Monitoring of commodities of Lobster Seed (puerulus), Lobster Seed, lobster (*Panulirus* spp.), crab (*Scylla* spp.), and crab (*Portunus* spp.) at fish quarantine installations and/or at entry and/or exit points is carried out by the agency. Which carries out duties in the field of fish quarantine.
- b. Further provisions regarding supervision procedures as referred to in paragraph (1) shall be stipulated by the head of the agency carrying out duties in the field of fish quarantine.

Article 20 states, At the time this Ministerial Regulation comes into force, the Minister of Marine Affairs and Fisheries Regulation Number 12/PERMEN-KP/2020 concerning Management of Lobster (*Panurilus* spp.), Crab (*Scylla* spp.), and Rajungan (*Portunus* spp.) in Country Territory

Republic of Indonesia (State Gazette of the Republic of Indonesia of 2020 Number 454), is revoked and declared invalid. Furthermore, the method of measuring crabs is regulated in the Appendix as shown in the image below:



**Picture 1: How to Measure Crabs (*Scylla* spp.),**

Crab in Teluk Bintuni Regency is an export commodity, the procedures for catching and releasing crabs have not been regulated in regional legal products. Nevertheless, customary law communities, fishermen and business actors in their activities refer to the Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia Number 17/Permen-Kp/2021, which has regulated the Prohibition of Catching and/or Releasing Lobster (*Panulirus* Spp.), Crab (*Scylla* Spp.). Indigenous peoples who catch crabs, or fishermen who catch crabs with the permission of ulayat rights holders; sell to collectors. There are even fishery entrepreneurs who carry out fishing activities with the permission of the ulayat holders and the government.

As the results of interviews with Indigenous Law Community respondents stated that so far the fishing and selling activities of fishermen (both customary rights holders and local fishermen). They have occurred according to a long-standing tradition, such as indigenous peoples who catch crabs, or fishermen who catch crabs with the permission of the stakeholders. Customary rights; sell to collectors. There are even fishery entrepreneurs who carry out fishing activities with the permission of the ulayat holders and the government.

With regard to the policy of the Regional Government in providing protection to crabs (*Scylla* Spp.) that specifically the Bintuni Bay Regency government. It has not issued by regulations governing crabs, general matters of conservation, and protection. In general, it has been regulated in the Medium Development Plan, which is being revised in the end of 2021. Basically, it was stated that in the context of protecting natural resources, flora and fauna including marine biota, based on the principle of sustainability. In addition to the RPJM Perda, regional policies are regulated in Regional Regulation Number 4 of 2012 concerning Regional Spatial Planning.

The follow-up to the policy is handled by the agency that has the authority, such the Department of Marine Affairs and Fisheries. The crucial problem is an ineffective supervision of the capture and sale of crabs (*Scylla* Spp.). Due to an authority that used to be in the districts/cities, since Law number 23 of 2014 concerning Regional Government was transferred to the Provincial Government, while the Provincial Marine and Fisheries Service West Papua, is limited to human resources, facilities and infrastructure for supervision.

A Head of the Department of Industry, Trade, and small business micro said the same thing that due to the transfer of maritime and fishery authority from the district to the province. This any consequences were not fostered and there was no empowerment from the technical agency of the Bintuni Bay district because it was outside the authority.

The conservation of mangrove crabs (*Scylla* sp.) in Teluk Bintuni Regency, especially the Sougb and Wamesa tribes in the Manimeri district, is carried out by:

#### **Prohibition at certain locations and for a certain time (sasi)**

In this case, environmentally friendly fishing methods, including traps, and tongs. This cannot use tuba roots which have an impact on the death of biota. Granting permits to fishermen on a limited basis, in the sense that the tribal chief grants permission by paying a certain fee, and when after catching crabs, the amount of crab gain is calculated according to the number of crabs caught.

#### **Local Wisdom Contributing to the Conservation of Crab and Mangroves**

Nika Halida Hashina local wisdom is local ideas that wise, full of wisdom and good values. There are embedded in the community and followed by a community. Local wisdom can also be understood as local knowledge that is passed down from generation to generation and agreed to be implemented together. The form of local wisdom can be in the form of values and norms, traditional beliefs or myths, rituals, customs, arts, literary works, symbols, and regulations. Local wisdom is based on ethics and values in social life, which are considered as the result of past culture, but are still widely used as a reference in the management of natural resources and an environment.

Crab seekers who do a lot of activities in the mangrove forest are very concerned about this belief for their safety when doing their work. The prohibition for crab seekers from Wamesa is a ban on eating crabs for boys who are less than 7 (seven) years old. If this is violated, the child who eats the crab will be sick with heat until foam comes out of his mouth. The foam that comes out is considered like the foam on crabs. By the Wamesa tribe, this disease is called by inamuri. This prohibition on eating crabs also applies to breastfeeding mothers, because it is feared that the disease will be transmitted through the milk of mothers who eat crab meat. Furthermore, the prohibition that applies to both boys and girls is eating crabs that are molting (shell). If this prohibition is violated, the child will cry easily.

Another habit of crab seekers from the Wamesa tribe is in the hole where the crabs hide. Generally, there is a pair of crabs. Some of them took all the crabs, but some only took the big crabs and left the small ones in the hope that one day the crabs will be taken when they are big.

In this context, local wisdom is used as a guide to meet the needs of residents from nature in a good and non-destructive manner. This understanding is in line with the notion of local wisdom according to Law Number 32 of 2009 concerning Environmental Protection and Management. In the law, it is emphasized that local wisdom is noble values that apply in the life of the community to protect and manage environment in a sustainable manner.

In Article 1 number 21 about the Special Regional Regulation Number 9 of 2019, which is concerning guidelines for the recognition, protection, empowerment of Indigenous Law Communities and Indigenous Territories in West Papua Province. It is stated that a local wisdom like a noble value that applies in the way of life of Indigenous Law Communities, among others, to protect and manage environment in a sustainable manner.

Local wisdom that contributes to the preservation of crabs and mangroves in Bintuni Bay, which is limited to two tribes, such as the Sougb and Wamesa tribes. Overall, the indigenous tribes in Bintuni Bay Regency consist of 7 (seven) tribes, such as the Sougb, Wamesa, Kuri, Irarutu, Moskona, Sebyar, Sumuri. The choice of the Sougb and Wamesa tribes was because researchers were able to reach these two tribes, due to time and cost constraints, includes:

1. Local wisdom of the Sougb Tribe
2. Local wisdom of the Wamesa Tribe

A Sougb tribe inhabits the mainland, mostly in the interior, while the coast is only an area where mangroves grow along rivers such as the Wasian River. This borders of the Sebyar tribe to the West to the mouth of Bintuni Tirasai River, Sumberi, Anakasi, Temamari, Manimeri. Meanwhile, the area where there are crabs is in the coastal area, which is controlled by the Yettu and Iba clans. In reality, because the traditional territory of the Sougb tribe is more inland which does not have mangrove forests and crab habitats, but the local wisdom possessed by the Sougb community is:

- a. The fishing of crabs and mangroves for daily needs by members of the Sougb community is free of charge, except for trading.
- b. Outsiders who want to catch crabs and cut mangroves with a diameter of 30 cm for trading purposes must pay a permit fee before catching crabs (amuhi), and after completion the number of crab catches will be recalculated, and paid 15 thousand per head.
- c. In catching, it is prohibited to use toxic materials such as tuba roots
- d. The size of a crab taken for the male (Amuhi Akiji) weighs 7 ounces until 1 kg; while the female (Amuhi Akita) weighs 1-1.5 kg.

- e. Permits to catch crabs and cut down mangrove trees are given verbally by paying recognition in the form of a certain amount of money.
- f. Permission from the district government, with any approval of the ulayat rights holders, where the crab hunting sites are located.
- g. Sanctions are given to fishermen for non-compliance in catching crabs that are not according to the allowed size, and pregnant female crabs (amuhi akita).
- h. The amount of the sanction is in accordance with the results of the clan deliberation that has the right to the customary area where crabs are searched.
- i. The Wamesa tribe is a tribe in Teluk Bintuni Regency which borders the Sougb tribe. The Wamesa tribe lives in the government area of the Wamesa district with the capital city Idoor. This is also consisting in the villages of Idoor, Yakati, Yensei, Mamuranu, Anakasih, Wasari. The Wamesa tribe controlled by the coast from Manimeri to the South west of the Wamesa district.

The Wamesa tribe is a tribe that inhabits the coast, nevertheless they are close and have a religious relationship with the sea. A sea in the perspective of the Wamesa tribe is seen as Rawana wai wiguna soama sasera diane soamane. This means that a sea is useful and beneficial and provides life for the community, like a mother giving food to her children. Actively, a sea is protected it continues to provide life for the Wamesa people, like a mother give milk to their children.

The Wamesa tribe in managing, catching crabs, and taking wood from mangrove trees is based on local wisdom as follows:

1. Customary areas with mangrove forests in which crabs live are the collective rights of each village and clan.
2. Within a management area of the clan, members of the clan have a freedom to exploit the mangrove forest and catch crabs for daily needs, without the permission of the head of alliance.
3. Permit for forest exploitation and catching crabs or other marine biota, if it is for business purposes. The permit was given orally, by the Tribal Chief with the approval of the clans that control the area. Manage the customary law community by paying a certain amount of money.
4. The size of any crabs caught is allowed only large crabs, such as both male and female weighing about 3-10 ounces, but crabs are pregnant with not allowed to be taken, but no one is watching.
5. For mangrove tree trunks that may be taken are those with a diameter of 30-50 cm.
6. Sanctions for violations of crab catching and timber harvesting are in the form of payment of a certain amount of money. If it has been founded that someone caught crabs and mangrove trees less than the allowed size/weight. Usually, sanctions are returned to the clan that controls the Mana area.
7. Environmentally friendly crab catching tools, such traps



Figure 3. damage to the mangrove forest

Various local wisdoms of Indigenous Law Communities can be formed with regulations to legalize various customary law rules and local wisdom, since these rights are an authority of the district/city. In contrast, as in Law Number 23 of 2014 concern to Regional Government, in the appendix, it was stated that: the authority of city districts is Determination of the recognition of MHA, local wisdom or traditional knowledge. Conditionally, the right to local wisdom or traditional knowledge and the rights of MHA related to environmental protection and management located in the regency/city area. Increasing the capacity of MHA, local wisdom or traditional knowledge and the rights of local wisdom or traditional knowledge and MHA rights related to environmental protection and management in the district/city area. Organizing education, training, and environmental education for community institutions at the district/city level. Giving environmental awards at the district/city level.

Ultimately, a delegative authority and attribution in the Regional Government Law, become a strong basis for the Teluk Bintuni Regency government to form regional regulations and/or regional head regulations. This is in line with the use of law as a tool of social control (Law as a tool of social control).

Regulation and strengthening of the implementation for local wisdom between indigenous and tribal peoples, both the Sough and Wamesa tribes, in order to preserve crabs and mangrove forests, due to the reality of shipping 1-2 tons of crabs out of Bintuni Bay day to day. It was not to mention the crabs that are consumed by locally people, as well as the harvesting of mangrove trees. Uncontrollable, resulting in slowly but surely the wealth of natural resources in Bintuni Bay will be extinct, and what remains is only a story that has become a myth that Bintuni Bay has a wealth of natural resources, crabs and mangrove forests, whose benefits contribute to human life.

## CONCLUSION

Policies were formulated in regulations in the form of legislation at the Central level, West Papua Province, and Teluk Bintuni Regency, which have had accommodated by conservation and sustainability policies and conservation for living natural resources and ecosystems in general, not really specific, yet.

Eventually, any specific policy formulations for the conservation of crabs and mangroves in Teluk Bintuni Regency have not been accommodated in regional regulations or regional head regulations.

Furthermore, the local wisdom of the Indigenous Peoples in Bintuni Bay, especially Sough and Wamesa tribes, contributes to the preservation of crabs and mangroves with regard to fishing time, crab size, fishing gear, wood size, and the application of sasi in each customary area.

Policy formulation at the implementation level should be followed up with local legal product regulations, which are appropriate to accommodate crab, and mangrove conservation policies in accordance with the mandate of the RPJM regional regulation. Additionally, Regional Regulation Number 1 of 2019 concern to the Protection and Recognition of Indigenous Law Communities; The local wisdom of MHA as living law should be synergy and accommodated in local regulations, which regulate the preservation of crabs and mangroves, as a manifestation of the legal function as a social engineering function.

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**Dhea Maria Leonita**

*Caritas College of Law, Papua Manokwari*

**Roberth Kurniawan Ruslak Hammar**

*Caritas College of Law, Papua Manokwari*

*Corresponding author's: roberthammar@yahoo.com*

**Carina Budi Siswani**

*Caritas College of Law, Papua Manokwari*

**Filex Melanton Labobar**

*Caritas College of Law, Papua Manokwari*