



Safety, Health and Feasibility Local Wisdom and Regulation of Marine Products: Convergence and Case Study of Mare Island, Tidore Islands

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Abstract

Purpose: To find a convergence between the local regulation and wisdom in Mare regarding the sustainability of resources and marine products and its safety, feasibility and health standards. **Methods:** this study is a descriptive qualitative study which describes regulations on the safety, feasibility and health standards of processing seafood and local wisdom regarding the preservation of marine resources. **Result:** Local wisdom in Mare has not been able to achieve regulations related to safety, feasibility and health standards of seafood but the local wisdom was able to maintain the sustainability of marine resources. Both of these things can be converged with technology so that the sustainability of marine resources can be achieved while realizing the safety, feasibility and health standards of marine produce. **Conclusion:** local wisdom is not a static thing so that between local wisdom and the preservation of marine resources and safety regulations, feasibility and health standards of seafood can be converged upon them.

Keywords: *Convergence, Local wisdom, Mare, Regulation, Health, Marine product.*

Introduction

Local wisdom is the view of life and 'science' as well as various life strategies or culture in the form of activities carried out by the local community in answering various problems in fulfilling their needs. In foreign languages it is often also concentrated as a local policy or "local knowledge" or local intelligence. Local wisdom is not a new discourse in this current era. Local wisdom is actually present along with the formation of Indonesian society [1]. Local wisdom can be defined as a wealth of local cultures, includes living policies; a way of life that accommodates wisdoms.

That is how we behave in a local wisdom as an effort to strengthen the Indonesian identity (Revitalization of Local Wisdom). In Indonesia, there is a lot of local wisdom preserved in various aspects of life, including local wisdom in resources and biodiversity that is an important and a strategic meaning for the continuity of life as a nation. This is not only because of its position as one of the richest countries in the world in terms of biodiversity, but precisely because of its close association with the rich local cultural diversity that this nation has (mega-cultural

diversity) [2]. In reality, most of Indonesians still have customary wisdom in the natural resources for marine management. These local systems differ from each other according to socio-cultural conditions and local ecosystem types. This era, only a few modern science researches know about these local systems.

In this paper, we discuss about the traditional pranata of Sasi found in Maluku that regulates the sustainability utilization of a region and of some biological species. Another example is the traditionally-regulated fishing system in some coastal communities in northern Maluku. North Maluku is a province in Indonesia that still preserves local wisdom. North Maluku has 10 city districts, one of the cities in North Maluku is Tidore City, Tidore Islands. They have a knowledge and management system of local resources that are hereditary and are developed continuously through their generations. Mare Island, Tidore, North Maluku Islands since 2012 has become a marine conservation reserve area for turtles and dolphins. This 200-hectare island has a

rich natural diversity such as mangroves, coral reefs and sea grass fields. The island is quite easy to reach from the city from Ternate.

The locals work as farmers and fishermen. Mare people catch the majority of fish by traditional tools using a fleet of *katinting* vessels or wooden vessels (non-machined) fishing rods such as fishing rods, nets and *rumpon*. However, Mare people cannot catch in places other than the Mare island area as well as otherwise apply to people outside Mare Island, fishing schedule and the tools in Mare Island are traditionally regulated. Thus, the problem of this research is, "Is the rules or traditions of this society are inherited through generations which is also referred to as the customary law of?"

Materials and Methods

This research is a sociological juridical study and this research method chooses to explain the procedures or the steps taken in the research process [3]. The reason for the selection of the research site is because based on the initial information in the city of Tidore, there is local wisdom that is still maintained about the terms and restrictions or rules in fishing by the local community as well as outside Mare island and to find the answer about how the rules and standards of feasibility and health of the seafood are. The sociological legal research or that which is also known as the empirical research is a method of legal research that uses facts taken from human behavior, both verbal behavior obtained from interviews and real behavior conducted through direct observation [4].

The samples used in this study, taken from a select portion of the population through a simple random technique for people who know the object of the problem and purpose sampling techniques for other populations, are based on the researchers consideration that the sample chosen from respondents is considered to understand the problem and can be trusted and represents the elements discussed in the study.

Results and Discussion

Definition of Local Wisdom

The following are some notions of local wisdom according to experts, consisting of:

S. Swars

It states that conceptually, local wisdom is human wisdom that relies on traditionally institutionalized philosophies of values, ethics, ways, and behaviors. Local wisdom is a value that is considered good and true so that it can last for a long time, and even become institutionalized [5].

Phongphit dan Nantasuwana

Express local wisdom as knowledge based on inter-generational hereditary community experience. This knowledge becomes the rule for the daily activities of the community when dealing with families, neighbors, other communities and the surrounding environment [6].

I Ketut Gobyah

To say that local wisdom or local intelligence is the truth that has been tradition in an area. Local wisdom could be a combination of the sacred values of God's word and the various values which exist. Local wisdom is formed as a cultural advantage of the local community as well as geographical conditions in a broad sense. Local wisdom is a product of past culture that deserves to be constantly used as a guidance of life. Even though it consists of local values, but the values in it are regarded as having universal virtues [7].

Quaritch Wales

Explaining that local genius means the ability of local cultures to deal with foreign cultural influences at a time when the two cultures are related.

Wisdom Protection Regulation in Capture System Marine Resource on Mare, Tidore Islands

Regulation is necessary specially to provide protection to indigenous peoples for the practice of catching fish based on local wisdom. In general, the regulation of the safety and health of seafood based on The Ministerial Decree No. 52A/Kepmen-KP/2013 on The Quality Assurance and Safety Requirements of Fishery Products in the Production, Processing and Distribution Process. Local wisdom-based seafood handling practices are not all good, and poor handling leads to microbial contamination and accelerates the rate of fish decay [8].

Food safety continues to be a problem for people around the world, inappropriate food handling due to lack of knowledge about food safety [9]. Fish catches require special handling to keep the fish fresh. The handling of fish on board includes all measures in catches on board, from initial action to storage. It aims to maintain the quality or quality of the fish in accordance to the certain standards [10].

Deterioration in quality and high post-harvest damage caused by arrest, poor handling, length of supply chain, inadequate handling facilities. The way of catching (type of fishing device) is directly related to the way the fish dies and the way the fish die is related to the physical and chemical processes experienced by the fish body where the processes have a direct effect on the quality of the fish after catching [11].

The government's concern for quality assurance of fishery products is quite high enough, can be seen from the legislation or policy that has been established based on The Ministerial Decree No. 52A/Kepmen-KP/2013 on Quality Assurance Requirements and Safety of Fishery Products in the Production, Processing and Distribution Process [12]. The cooling technique on the ship in the traditional or local wisdom is using ice, and the length of sailing is about 10-14 days so that sometimes the fish rot, therefore sampling is only done in as many as 3 ships because it is tailored to the needs of the research.

Assessment of the suitability of the handling which refers to the Decree of the Minister of Marine Affairs and Fisheries No. 52A/KepmenKP/2013 and conducted through interviews and field observations using the questionnaires which had been prepared [13].

The questionnaire prepared is a list of assessments or a checklist which refers to the provisions of the Decree of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia No. 52A/Kepmen-KP/2013. Respondents are needed to get the data assessment of the suitability of handling on board are captain and the crew. Eligibility of basic requirements includes 4 elements, namely 1) Facilities, 2) Fish handling equipment and tools 3) Fish handling on board 4) Role of ship crew. The four elements are detailed into several questions for the assessment of the suitability of the handling.

Handling fish by boat includes all measures for catches on board, ranging from initial action to storage, it aims to maintain the quality of the fish in accordance with the certain standards [10]. A good handling indicator is good quality of fish and safe for consumption. Bad fish quality can cause selling price of the fish. Good handling of fresh fish should refer to a handling provision or standard stipulated in order for the quality of the fish produced to be good, this has been regulated in KEPMEN-KP 52A/2013 on The Requirements for Quality Assurance and Safety of Fishery Products in the Production, Processing and Distribution Process. Conformity of Facility Elements Terms of facilities that must be met by fishing vessels are 1) vessels equipped with hatches, 2) hatches to store catches equipped with ice meltwater disposal systems, 3) hatches must be cleaned before and after use, 4) vessels equipped with hatches for live baiting [14].

The minimum standard of processing of seafood that must be met by fishing vessels is 1) Equipment and equipment must remain clean, in good condition and ready to use, 2) There are tarpaulins to avoid fish from the heat of the sun, 3) There are seawater pumps, 4) Availability of ice to meet marine and post-catching handling needs, 5) Containers used in fish handling can be barrels or baskets and made of plastic, aluminum or fiberglass, 6) Catchment fish handling equipment must be properly maintained, 7) Water/ice used for washing, cutting or storage.

According to Adwyah [15] ice cools quickly without much affecting the state of fish and ice has a very large cooling power. According to Siburian, (2012) the decay process is faster at high temperatures so that the decay process can be inhibited by low temperatures. Extending shelf life and to address the problem of fish decay (during fishing, transport, storage and marketing) a cooling medium is required to maintain the freshness of the fish within a certain time.

The factor that causes the suitability of the equipment element is not according to the standard as there is no tarpaulin to avoid fish from the heat of the sun. Harvesting performed during the sunny day causes the temperature of the environment to increase and directly affect to the fish [16]. Conformity

of Handling Techniques Conditions of handling requirements on ships that must be met by fishing vessels are 1) Watering or cleaning the deck, 2) If the handling process is carried out during the day, then the deck section is installed with tarpaulin, 3) After the fish is caught, it is handled quickly and carefully, 4) The caught fish is washed with seawater, 5) The fish must be immediately put in the hatch and given ice, 6) Fish should not be left in high piles, 7) Avoid the use of scopes to move fish, 8) Fish should not be trampled because the fish will be damaged and decay quickly, 9) Before refrigeration or stored in the hatch, sorting first, 10) How to prepare the fish in the hatch according to the size and type of fish, 11) Monitoring and temperature control is carried out regularly.

The handling of fresh fish by fishermen usually begins as soon as the fish is lifted from the water where it lives, with low temperature treatment and sometimes less hygiene. This is in accordance with what Suwedo [17] said that one way of maintaining fish freshness can be done by keeping fish alive or by lowering the temperature of dead fish. Processing and handling fish based on local wisdom has not been able to this kind of unless the fish is directly processed once up to the port, and this does not cause problems of the use of prohibited goods such as borax to process fish [18].

Even according to UND and FAO [19] that maintenance, cleanliness and cooling are the key to harvesting good quality catches. Only a small part of the speedboat carries ice into the sea, but the fish hatch required for it is generally far from perfect. The handling in the boat is less concerned with sanitation and hygienic factors and less perfect storage without the use of crates or bulkheads that cause the quality of the fish that are raised to be less good according to the opinion of Nasran [20].

Handling cooling of catches in the sea including post-harvest activities. The fishing vessels equipped with hatches, tanks and fish containers (crates, drums) each means is not insulated and carries supplies of ice, other auxiliary materials (salt, fish packing materials, dsb) [21]. Local wisdom in Mare includes fishing schedules and areas and has not reached a hygienic post-fishing processing.

The preservation of marine resources is maintained but does not guarantee the hygienic processing of seafood resources for it to remain viable and healthy in consumption by the public. The state can facilitate equipment and training in processing seafood resources so that fishermen will not have difficulty in processing their seafood. Local wisdom is not something static so it can't change. The development of the times and technology makes local wisdom not change or disappear but is enhanced with technology [22].

Local wisdom in the preservation of resources and marine products in Mare Tidore islands is enhanced with marine processing technology so that the results are safe, feasible and in accordance with public health standards. With this method, the sustainability of natural resources of marine produce and the welfare of fishermen can be achieved in a compatible way [23].

Conclusion

Local wisdom is the view of life and knowledge as well as various life strategies that are in the form of activities carried out by the local community in answering various problems in fulfilling their needs. Mare people catch the majority of fish by traditional means using a fleet of katinting vessels or wooden vessels (non-machined) fishing rods such as fishing rods, nets and rumpans. However Mare people cannot catch other than Mare island area itself as well as otherwise apply to people outside Mare Island, fishing time and fishing tools on Mare island are traditionally regulated. Local wisdom in Mare is able to maintain the sustainability of resources and marine products but has not been able to produce safe, viable and health-appropriate processing of marine resources.

There are still Mare fishermen who use prohibited goods such as borax to process seafood that is not in accordance with regulations making it dangerous for health standards. Local wisdom is not static but can be perfected with technology so that the goal of preservation of resources and seafood and the welfare of fishermen can be achieved simultaneously. Local regulations and wisdom can go hand in hand and concurrently to be realized.

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