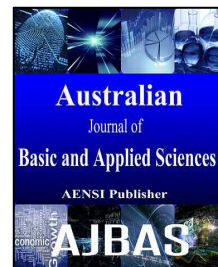




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# Tanah Merah Gulf Coastal Community In Jayapura District, Papua-Indonesia

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### ABSTRACT

This research aimed to describe three points: 1) spatial conditions of Yewena in the northern coastal area of Papua, 2) Tanah Merah gulf coast community in Jayapura district, and 3) people's knowledge in maintaining marine resources in the northern coastal area of Papua. To achieve these purposes, a historical method is employed through four stages: heuristic, criticism, interpretation, and historiography. The results of this study show that people in the villages around the Gulf of Tanah Merah have a close relationship with the sea and its surroundings. The word "sea" is translated into "nau" in *Yakari* and *Tabla* languages. People have then acknowledged that there are borders between areas of the sea that have been agreed on and decided together. The reef areas are usually the property of a clan who holds the full accountability to manage it called "*nau yo*" (a clan or men of the sea). In general, each village which is situated around the coast consists of clans whose main duty and function are to manage the marine system. Areas used for fishing or else are not limited to indigenous territories but also cover the free sea areas (*beta nau*). Catching fish in these areas does not violate any customs rules and anyone is entitled to catch fish there. There is the term *tiatiki* that represents knowledge of preserving the coastal and marine environment. Residents in the villages around the Gulf of Tanah Merah have a close relationship with the sea and its surroundings. The sea in *Yakari* and *Tabla* languages is called *nau*. Second, these two languages have similarities but there are some differences. Every speaker can understand each other when communicating using both languages. On the basis of language characters, there is a need to correctly understand the language used. The coastal communities, in general, have similarities in the knowledge of traditional marine science; their languages contain messages which are in accordance with the values found in their lives.

### INTRODUCTION

#### Research Background:

Indonesia is an archipelago consisting of 17,508 island and with a length of coastal line of 81,000 km. This condition makes coastal regions become the main sources of public revenue for the country. In general, a coastal region can be defined as a region that is the meeting point of land ecosystem, marine ecosystem, and terrestrial ecosystem in a one and fragile balance. According to Kay and Alder, coastal region is unique because, in the context of the landscape, it is a meeting point of the land and sea. Furthermore, coastal region is an important area in various fields in the viewpoints of planning and management (Statistics Agency of Jayapura District, 2012).

Department of Maritime and Fisheries in the draft of Integrated Coastal Zone Management of Coastal Areas Enactment defines coastal area as a transition region connecting the terrestrial ecosystem and marine ecosystem

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located between the boundary demarcation towards the land as far as the highest tide and towards the sea as far as the influence of activity on the land. Coastal regions have a high economic value, but its sustainability is threatened. With its unique potential and economic value, the threat of coastal areas is also high, coastal areas should then be particularly handled in a way that these areas can be sustainably managed. Transitions between the land and sea in coastal areas have formed a diverse ecosystem which is highly productive and provide tremendous economic value for human beings.

In line with the population growth and increased socio-economic development activities, the "value" of coastal areas continues to grow. The consequence for this is an issue of management which arises because of conflicts of utilizations of the various interests that exist in the coastal areas.

As a transitional region of land and sea that has a unique ecosystem, the world has a concern for the region, especially in the field of environment in the context of sustainable development. Historically, almost all important cities in the world nowadays are located not far from the sea. The reason is that this region has the potential for marine resources and fisheries, as well as the ability to facilitate the trade between regions, islands, and continents.

In addition, the coastal region is also an area to hinder the entry of a large wave of sea water to the land, as for the existence of mangrove forests.

In the Indonesian marine areas, there are varieties of fish species which are of high economic value, either pelagic fish (fish that live in the upper part near the surface of the sea) or dermesal fish (fish that live at or near the seabed). So far, the production of both pelagic and dermesal fish still rely on the fish catching activities at the sea. Fish and aquatic biota are good sources for high nutrition that have been consumed by humans since the day they started hunting. People, who live around rivers, lakes, or sea, catch and take a variety of aquatic biota for consumption either raw or cooked.

Yewena village is a village located in the Depapre district of Jayapura in Papua province. It is one of the villages located in the northern part of the Jayapura District, under Mount Cycloop, which is also called Deponsero, which directly faces the Pacific Ocean in the gulf coastal region of Tanah Merah. Yewena village can be reached by car or motorcycle for approximately two hours or more with the distance of approximately 120 km from Sentani city to the capital city of Depapre district, and continued to Yewena - Dormena for 8.0 km.

Yewena coastal marine water area is a part of the Pacific Ocean water systems. With the location of Yewena beach facing the Pacific Ocean, certain seasons in that area are also influenced by the waters of the Pacific Ocean which also causes the variations of Yewena coastal marine water conditions. Yewena coastal marine water conditions have certain variations and are not so prominent. In the months of January, February, March, August, September, October, November, and December, there blows strong west wind and the condition of the sea and the height of waves are around 5 meters. This condition will be much different in April, May, June, and July as the wind blows from the east. The wind blows calmly and the water surface is also calm. The region also faces the northern beach of Papua which brings positive and negative impacts to the fishermen. The negative impacts are that during tough months like January, February, March, August, September, October, November, and December, it is hard for the fishermen to do fishing. Meanwhile the positive impacts are that during April, May, June, July are that they can get a good time for fishing. Communities of fishermen still employ traditional methods of fishing and still maintain cultural value that regulates rights over the sea when they take the gain that the sea provides.

#### ***Research Questions:***

The main issue raised in this research is the life of Yewena people of the northern coastal area of Papua. To explain that, there are three leading questions to ask:

1. How are the spatial conditions of Yewena in the northern coastal area of Papua?
2. How is the condition of the gulf coast community of Tanah Merah in Jayapura District?
3. How is the knowledge of the people in maintaining the marine resources in the northern coastal area of Papua?

#### ***Objectives of the Study:***

Objectives of this study were to reveal true facts and descriptions about Yewena community as seamen of the northern coastal area of Papua. In details, this research aimed to describe:

1. Spatial conditions of Yewena;
2. Gulf coast community of Tanah Merah; and
3. People's knowledge of preserving marine resources in the northern coastal area of Papua

#### ***Methodology:***

In general, a method is a way or procedure to obtain things or objects. Also, it is a way of doing something in a planned and orderly system. This research employed historical research method. Historical method is a set of principles and rules that are intended to systematically provide effective assistance in an attempt to collect

materials for the history and the results are usually in written form. The historical method relies on four stages of activities, they are: heuristic, criticism, interpretation, and historiography.

### **Heuristic:**

Heuristic or the first step is the process by which historians or writers seek and find historical sources or evidence. Techniques used to support the implementation of historical observation consist of literature review, observation, and interviews.

Literature review was initiated with the writer's seeking information or data and a number of literature relevant to the intended research problems. The author then went to several libraries in Jayapura, such as that of History Education Study Program of Faculty of Teacher Training and Education, that of Cenderawasih University main university library, that of Fajar Timur School, that of Papua regional library, that of Anthropology Department of Faculty of Social and Governmental Sciences of Cenderawasih University, that of *Balai Pustaka Sejarah dan Purbakala*, and that of *Balai Arkeologi*. The writer also studied the writer's private book collections and those lent by the author's lecturers.

The writer also conducted a field study to obtain and compare various sources directly in the locations of research (observation) for data that is corresponding to the source and data that can only be obtained through oral sources (interviews) directly with Mr. Mark Yaroseray and Mr. Yonas Mentaneway as the customary prominent figures of Dormena village, Mrs. Sarlota Abisay as the regional prominent female figure of the village, and Mr. Kalvin Ovide Yewena as the head of the village. The advantage of the interview technique is that the data recording officers positioned themselves as witnesses of the situation of Yewena village. Lastly, visual data was also obtained through documentation which in turn enhances the data quality.

### **Interpretation:**

To produce a historical story, a fact that has been collected should be interpreted. The interpretation of history is often referred to as history analysis. In this case there are two methods used, namely analysis and synthesis. Analyzing here means explaining various data through inductive inquiry and concluding it. Synthesizing here means integrating which is completed through grouping data into one to be concluded then. Interpreting historical facts and arranging the processes can be a historical narrative with regard to the selection process of history, as it is certain that not all facts can be included.

### **Historiography:**

The last stage of the method is historiography. Historiography is a way of writing, presenting or reporting the results of historical research that has been completed. Like scientific research reports, historical writing should be able to give a clear picture of the research process from the beginning (the planning phase) to the end (conclusion).

### **Review of Literature:**

When doing heuristics or historical observations there were written sources that the writer obtained as the references for this study. They are:

First, *Kabupaten Jayapura dalam Angka* (2012), by Statistics Indonesia of Jayapura District in Figures, a complete book which discusses the general description, condition, and potential of human resources and social potential, natural resources as well as infrastructure construction sectors of Jayapura district.

Second, *Taitiki Konsep dan Praktek* book by Wilklif Yarisetou (2009). The book discusses the coastal area and sea under local contexts of the Tanah Merah Gulf Coast of Jayapura District.

Third, *Mengenal Ekosistem Laut & Pesisir* by Puspitaningsih (2012). This book discusses the division of marine and coastal areas, the function and condition of Indonesian marine and coastal ecosystems, as well as the various efforts to maintain marine and coastal ecosystems.

Fourth, *Sejarah Pekabaran Injil Jemaat Doromena Klasis GKI Tanah Merah* (2012), by Charles Abisai et al. This report gives an overview of the village Dormena, history and establishment of churches.

Fifth, *Buku Pintar Budi Daya 32 Ikan Laut Ekonomis* by M. Ghufan H. Kordi K. This book describes the fish hatchery, enlargement and maintenance in cages, ponds, *hampang*, and JKD for local consumption and export.

Sixth, a report titled *Hasil Pembahasan Suku Yaroserai* by Stepanus Yaroserai. This book contains the history of the sea by Yaroserai Wafu clan, a brief history of the sea, as well as the family tree of Wafu and their jobs for livelihood.

Next, the seventh source is the source of published sources the Department of Marine and Fisheries, on the Fundamentals of Thought Bill (the Bill) Coastal Management (PWP) in 2007.

Lastly, the eighth source contains documents that the author got from the internet (which are mostly in the PDF format). For the author, these resources greatly help her to understand the concepts and issues of marine, coastal, marine resources, and how to maintain marine resources. The documents are those written by Timothy,

David J. Bower, and Anna K. Schwab (2002) in the explanation section in Muttaqiena, et al. (2009), Papers on Sustainable Coastal Management after Tsunami of December 2004 (<http://slideshare.net/Abida/management-coastal>), and R. Kay dan J. Alder, (1999) in Y. Nurmalsari's article titled *Analisis Pengelolaan Wilayah Pesisir Berbasis Masyarakat* ([www.stmik-im.ac.id/userfiles/jurnal%20yessi.pdf](http://www.stmik-im.ac.id/userfiles/jurnal%20yessi.pdf)).

#### **Tanah Merah Gulf Sea In Jayapura District:**

This section aims to identify the definition of the sea and integrated coastal zone management with its community-based sustainability, as well as to identify the benefits, problems, and the concept of coastal zone management itself. The writer explains the definition and characteristics of marine and coastal areas, and their community-based management in Indonesia. After that, it also describes the concept of the sea and its use according to the gulf communities of Tanah Merah in Jayapura District.

#### **Definitions and characteristics Marine and Coastal Areas:**

Under the provision of Article 3 of Law No. 6/1996 on Indonesian waters, the territorial waters of Indonesia include:

1. Indonesian territorial sea is the sea lane as wide as 12 nautical miles drawn from the baselines of the islands of Indonesia,
2. Archipelagic waters are waters that are all located on the inner side of the straight archipelagic baselines regardless of depth and distance from shore,
3. Inland waters are all water located on the land side of the low-water line of the beaches of Indonesia, including all parts of waters which are located on the land side at a closing line. According to Dayan, inland waters are waters located at the mouth of the river, of which bay width mouth is not more than 24 nautical miles and at the port.

Common characteristics of marine and coastal areas can be described as follows:

1. Sea is the source of "common property resources" or shared resources, so that the area has public function/public interest;
2. Sea is an "open access regime, allowing anyone to utilize the space for various purposes";
3. Sea is fluid, where the resources (marine) and its dynamic hydrooceanography cannot be partitioned;
4. Coastal is a strategic area because its topography is relatively easy to be developed and it has a very good access (utilizing the sea as for infrastructure);
5. Coastal is an area that is rich of natural resources, either that which is situated in land or sea as it is needed to meet human needs. Coastal and sea areas and their natural resources hold a strategic significance for the economic development of Indonesia, as it can become one of the pillars of the national economy. In addition, facts that have been raised by several experts in various occasions also indicate the same opinion. The facts are:
  - a. Socially, the coastal regions are inhabited by no less than 110 million people or 60% of the Indonesian population residing within a radius of 50 km from the coastlines. It can then be said that this regions will be the forerunner of Indonesian urbanization development in the days to come.
  - b. Administratively, there are approximately 42 cities and 181 cities located on the coast, where the existence of regional autonomy of each region gives a broader authority in the handing and utilization of the coastal areas.
  - c. Physically, there are socioeconomic service centers spread from Sabang to Jayapura which contain various social assets (Social Overhead Capital) and the economy is of high value with very large financial potential.
  - d. Economically, the results of coastal resources have contributed to forming national GDP by 24% in 1989. In addition, in these regions there are many promising future resources considering the variety of potentials at this point which has not been optimally developed; among others are the potential of fisheries of which currently about 58.5% of the potential that has been exploited.
  - e. Indonesian coastal regions have the opportunity to play a role an exporter and a knot of sea transport in the Asia Pacific Region. It represents an opportunity to improve the marketing of products of Indonesian industrial sector to grow faster (4%-9%)
  - f. Next, the coastal region is also rich in coastal and sea resources and potential to be further developed: (a) 60% of mining with already identified oil basins, (b) fishing with a potential of 6.7 million tons / year, comprising 9 out of 17 points in the world of fishery, (c) nautical tourism is to be recognized worldwide with the presence of 21 potential spots, and (d) a very high natural biodiversity as a fascination for ecotourism activities.
  - g. Biophysically, the coastal areas in Indonesia represent the world center of biodiversity of tropical sea because nearly 30% of the world mangrove forests and coral reefs are located in Indonesia.
  - h. In politics, defense, and security, coastal areas are the border areas between countries and regions that are sensitive having significance implications for the defense and security of the Republic of Indonesia.

### ***Definition of Integrated and Sustainable Community-Based Coastal Management:***

#### ***1. Integrated Coastal Management:***

According to Sain and Kreth, Integrated Coastal Management (P2T) is a dynamic process which runs continuously in making decisions about the use, development and protection of the territory of the sea and coastal resources. An important part in designing integrated management is to achieve harmonization of the institutional process in a way that is acceptable politically.

#### ***2. Sustainable Coastal Management:***

An activity is said to be sustainable if the development activities are economically, ecologically, socially, and politically sustainable. Economically sustainable development means that an activity must be able to produce economic growth, capital maintenance, and the efficient use of investment and resources. Ecologically sustainable means that an activity must be able to maintain the integrity of ecosystems, maintain the carrying capacity of the environment and conservation of natural resources, including the biodiversity so that the resource empowerment can be sustainable. Meanwhile, political and social sustainable development activities require that one should be able to create even distribution of the development results, social mobility, social cohesion, community participation, community empowerment (decratisation), social identity, and institutional development.

#### ***3. Community-Based Coastal Management:***

Community-based management can be defined as a system of natural resources management in a place where the local community is actively involved in the process of management of natural resources contained therein.

In Indonesia, community based resource management has been established in Article 33 of the Constitution of 1945 which states that the earth and water and natural resources contained therein shall be controlled by the State and used for the greater prosperity of the people. This establishment expressly remarked the implementation of the control of the State over natural resources, especially coastal and marine resources which are directed to achieving maximum benefit for the prosperity of the masses, and be able to bring about justice and equality while improving the social life of the coastal communities and promote the coastal villages.

#### ***Viewpoints of the Tanah Merah Gulf Coastal Community:***

Residents in villages around the Gulf of Tanah Merah have a close relationship with the sea and its surroundings. The word "sea" is translated into "nau" in *Yakari* and *Tabla* languages. The two languages have similarities but the difference lies in the dialect. Each speaker of each language can understand each other in communicating using both languages. Also, in terms of meanings and understandings of words are also similar; this helps the author easily understand and explain the terms. The considerations of language characters lie on the correctness of understanding the language used in the non-Austronesian language family.

The meaning of the "nau" or the sea for the community implies a high value if associated with land or field, which is similar to the land category of the highest selling price. The sea is equally considered as the most expensive land.

Therefore, on the basis of the assessment of the marine community and the provision of high value, the sea and various marine resources that are in it will be managed and maintained by enforcing customary norms.

The sea and all that is therein are recognized as the creation of the Almighty God who grants the sea area to the community to be managed and maintained well. Before the community accepted Christianity or had a contact with the outside world, their knowledge of marine community had already been identified and passed through generations.

This kind of heritage has been passed down through legend or myth that is accompanied by evidence of marine objects which have a certain magic power that are believed to exist in parts of the ocean and are considered to be historical. As the older generations exist, they give a message to preserve the marine and sea environment. The message implies a philosophy of life. For the marine community, the sea is described as "mama", "mother", or "woman" because of the treatment of people against the sea is full of wisdom in organizing and managing its resources. The sea is like a woman or "klaume". If the sea is enforced by means of illegal acts and incompatible with the customary norms, such as breaking the rules of fishing gear (fish bombing) or destroying parts of the sea which is considered sacred, it will bring disaster in the form of damage to shore by big waves, strong wind and high waves. The power of the ocean currents will be stronger and faster than usual and accompanied by heavy rain, lightning and thunder. Events like these always have to be concerned because they can cause catastrophes. If things like these happen, the leader or "Ondowafi" with his supernatural knowledge has been previously warned even before being informed by the people. Ondowafi is granted the responsibility, with his magic power, to calm the situation and bring it back to normal.

It is to be acknowledged that the term "viewpoint" is a verbal-type tradition in its nature. This tradition has been passed down through generations. Even though the tradition is verbal but it is to be appreciated that the

adherence to the teachings is to be put into priority. Issues such as relations with the marine and coast environment are more respected which can be implied from the attitudes and actions that tangibly adhere to the norms that regulate the environment. In turn, the wrong and disrespectful treatments on rules or norms will bring bad luck in catching fish and the reciprocal consequence of the mistakes made can bring pain or even cause death due to the possessing spirits of the sea called "klaume" into the violators' bodies.

This community has rules for fishing as what the informants noted that at the time of going to the sea the fishermen must maintain the abstinence of having sexual intercourse with his wife, must not quarrel with the wife and kids or with other residents, and must have the fishing equipment stored at the appropriate place. As for the wife, she is not allowed to make a fuss while the husband is fishing at the sea. The fruitful results of obeying these rules are the abundant results of fishing enough to sustain the economic needs of the family and presence of harmony within the environment where they live.

### ***The Residents' Attitudes:***

Basically, the form of dominating attitudes is similar from one community to another, although the visible manifestations of this attitude are not the same. This data about the residents' attitudes was then drawn from the results of observations and interviews. Therefore it enabled the author to draw a statement that there are similarities in the attitude of this environment. Several approaches were employed by the researcher to understand this through a series of explanations. The explanations are then described and can be traced from the entire subconscious mind as read by abstraction in a way that the "attitude" appears in the form of social relationships and kinship system of communication and lifestyle in general in this neighborhood.

One of the media to identify the attitude is not only limited to the answers given alone, but the answers should then be re-examined for their truths through the testimony of others and various sources. To test the truth of this attitude through the media, "action" is what comes out of the attitude. Action is a concrete manifestation of attitudes such as body gesture; which is an act of keeping the coastal and marine environment with all the resources involved.

Respecting the hierarchy of power relations between ordinary villagers and chief residents or clan leaders, as well as between the residents of the village and their leader

or Ondowafi is the action shown for the manifestation of the attitude.

Formation of attitudes by villagers through education establishment is initiated in the social environment. One way to do this is to concentrate on the *Ongko me* house which is the traditional house of which the function is to educate young generations and men. At this time, the house alters its function to be an institute of customary. Then, as a continuation of its educational function Ongko me is transferred to each family's residential house in order that it can then take the full responsibility to educate their children to follow the lifestyle of the local culture; this also includes formal education for their children.

This family upbringing is concerned with the formation of good attitudes in children from early on, and later when they grow up, the attitudes are shaped. Education is always a continual process given by the family, or other people, and the society taking part in educating their generations. Explanations from the informants, including housewives, are that the beginning of the process of environmental education for these children is introduced when they get to the environment since very early age through playing games and else. They learn in their own world that life is moving from their childhood to adolescence and continue to proceed until they are fully grown up in their adult life later. Regarding informal education, it is not necessarily overlooked as, according to the basic assumption, every cognitive is formed through early enlightenment from the internal environment (family). Family as an institution is the one that is the most effective in shaping the attitude of the abstract into the concrete because the object "family environment" is the real and apparent before their eyes depending upon the thinking pattern and how to deal with things to establish the truth about life principle. What is true from establishing the attitudes into life highly depends on the sea as its main business area or work field and the sea also plays an integral part of their life. This is due to the fact that the sea is comparable to that of "mother" (symbol of prosperity) that must be maintained.

### ***Sea Borders and Village Integration:***

Residents of the sea area in the Gulf region of Tanah Merah, especially those in Senamai, Tablanusu, Tablasupa, and Maruway villages understand the sea borders of their respective communities' sea areas, since the first time they began to occupy the coast. Explanations from informants of each village represent the knowledge that the sea areas of each community have been established and agreed upon as follows:

1. The eastern part of the sea area that belongs to Senamai village is at the border with Tablanusu village, the benchmark for the maritime boundaries are Sendei Yemo cape, which leads to the Anai Dame Ocean. Meanwhile the sea boundary in the West is the Danaukisi river leading to the Beperau Dame ocean;
2. The western part of the sea area that belongs to Tablanusu has Sendei Yemo as the borderline separating it with that of Senamai village. As for the eastern part, the borderline is Opau beach separating it with that of Depapre village;

3. The borderline for the western part of the sea area that belongs to Tablasupa village is Klimpong coast, while the eastern part is shared with Yapase village;
4. The borderline for the western part of the sea area that belongs to Maruway is marked by Simsyakisi while that for the eastern part is marked by Sonia Yo;
5. Categories or sea areas within the limits have been set, fully managed by the villages, and on the basis of the rights of the indigenous owners of these villages;
6. In its turn for livelihood, the "beta nau" or seas can be used by all segments of society.

These gulf coast communities in general have common knowledge in marine science, their languages contains messages that are based on the values of the existing norms of their lives. The principle of similarity is apparent on the implementation of inter-norm widely within the societies. This also applies to the premises boundaries of income held by all citizens, or so-called "marine customary rights" (indigenous peoples' territory). Management of marine areas is categorized in the form of marine customary rights that function in compliance with the common interest. The firmness of the norms that rule does not mean closing the access of kinship within the coastal environment, but, on the contrary, as the harvest season began, opportunities are also given to relatives around the villages involved to harvest in the *tiaitiki* sea.

The boundaries of customary rights of the sea are still well functioning and maintained. In fact, the presence of boundaries in this region is interpreted as the principles of customary rights legitimacy. The influences are not only visible in the real things, but behind it is the relationship with the supernatural world, which is believed to have the power to control the environmental order. From the explanations given by the informants, it is confirmed that they still believe in the presence of supernatural forces. The manifestation of this power is "genie", as the community calls it "nauna mire" or "klaume". The power of supernatural spirits is conducted through a contact with magic powers, from witchcraft, called "sondo" (a local term for those who use supernatural powers to kill humans using their magic power). The power of magic is usually done when *tiaitiki* is applied; this may happen as some people may trespass their areas without permission; they will certainly experience hurdles, although they are cautious, but nonetheless the obstacles may occur unexpectedly, such as accidents at sea, which may lead to death.

According to the belief it is not just an illusion, but a fact that such events often occur, such as the testimonial of SS, from Tablanusu village with his typical statement "so, Doto" meaning "many similar cases occurred". As also obtained by the researcher from another testimonial by "MW" from Senamai, who describes the version of reef bombardment which is strongly prohibited. A bomber "AY" deliberately bombed in a forbidden location, consequently there was a delay in releasing the bomb then the explosion happened on the water surface near the boat. This caused the right hand of "AY" to break off. A portrait of these two events that, under our conscious mind, the communities still believe in supernatural powers according to their own cosmology.

#### **Local Perspectives on Marine and Coastal Areas:**

The villages generally have the same view. This same perspective is due to the ongoing process of adaptation; so that the knowledge received by each generation in the society does not disappear at all in meaning regarding that knowledge on marine and coastal areas. Knowledge of regulating the division of marine and coastal areas, for the community of Senamai, Tablanusu, Tablasupa and Maruway about the category of marine and coastal zoning according to the local perspective is as follows:

1. *Akadame*, is the sea area under the calculated distance from the boundary up to the limit of the tide and calculated to a depth of 12 meters. The color of the sea water is clear and leads into the depths of the more bluish. The more visible characteristics of this limitation is when the tide is low, called *akadame*; when the sea is dry, called *meti*, the community has the opportunity to fish in the seabed, including also the snails and shellfish in parts of the reef.
2. *Kia-kia* is part of the sea that has a depth of 12 to 25 meters. Part of the seabed that is still visible to the eye above the surface, and at low tide the sea part is not dry.
3. *Nau kotis* is part of the sea that has a depth of 25 to 100 meters. The bottom of the sea is not visible from the surface; and from the depths of the sea to the color of the water is blue-tinged.
4. *Beta nau* is part of the sea that has a depth of 100 meters or more to the Sea Zone; directly towards the Pacific ocean.

Of the four categories of the sea area, when classified according to the customary communal tenure, *akadame*, *kia-kia*, *nau kotis* are all included in the territory of indigenous communal rights, while *beta nau* is free and fishing in the zone does not violate any customs. Territory management by customs rules, continues to provide life assurance as to the *akadame*, *kia-kia* and *zone* are sea areas strategic for the breeding of marine life in general. If this is explored further, the regions which are very vital are *akadame* and *kia-kia*. At this regions

tiaitiki is enacted, the maintenance of *akandame* and *kia-kia* areas are considered because the place is safe with strong currents for fish and other organisms to breed.

Further, *akadame* in every village is categorized into several sections; they are:

1. There are 7 zones of reef in Senamai's *akadame*: Sombiyei reef, Nengking reef, Orudampo reef, Yurutupe reef, Busukai reef, Markadame reef and Yakerwaiye reef;
2. There are 3 zones of reef in Maruway's *akadame*: Simsya aka, Drakisi aka, Opia aka, and Snokisi aka;
3. There are 8 zones of reef/*skare* in Tablanusu's *akadame*: Senedia reef, Keser Bukoy reef, Numlai Tum reef, Bitia yo reef, Aably Skare reef, Elife Skare reef, Sensau Skare reef dan Buka Skare reef;
4. There are 3 zones of reef in Tablasupa's *akadame*: Tanjung Tanah Merah reef, Amai reef, and Krimpong reef.

Each of the zones is associated with the structure of the control rights of life in the coastal neighborhood. Natural resources control both land and marine have been systematically arranged by the communities. All parts of the reef are owned by the clan who is entitled to fully manage them. The clan who is entitled to manage them is called *nau yo* (seamen or sea clan). In general, each village on this coast has a clan with the duties and functions of managing the sea area. The *nau yo* clan of Senamai is called Taplamilena/Yarisetou, that of Tablanusu is called Soumilena, that of Tablasupa is called Sorontou. Regarding the division of the functions of clans, it can be estimated that there are also clans governing the land territory and supplying the communities' needs which have all been managed using a work mechanism system that is passed through generations according to the social status of the clans. The mechanism of task divisions to manage the environment is intended to facilitate the head of customs to know and control the community development, including the responsibilities of each clan to the cosmology of the surrounding environment.

#### **Local Knowledge Concerning the Prohibition and Proper Use of Fishing Tools:**

The ban or advocacy on the use of fishing gear functions as a social curb to control the attitudes and behaviors of the residents of local communities, so as not to exploit existing marine resources arbitrarily using means beyond the wishes of the people even on behalf of the public interest, such as reflected in the statement:

*"Simisyanupuku nesate ke mekeye, da now na kah betepere oripeinya, weye nekewa mekopune, yansite wena nuye beasate anenai."*

The statement means that: "It is prohibited to use fishing equipment which results in the suffering of future generations in the coastal environment". If the people are not careful in managing marine resources since early through using fishing gears that are not environmentally friendly, it can result in the future that the next generations experience a shortage of marine resources.

Nowadays, a variety of equipment has been infringing and has been used by some residents as a technology that is deemed to be not environmentally friendly, like a bomb and cyanide or potassium. The increasing number of cases regarding the use of forbidden gears has been solved by customary law while some by national law. One of the cases took place in 2007 on the use of bomb by SY (from Senamai village). SY has made the same mistakes for many times and disturbed the coastal communities. SY is now imprisoned in Jayapura penitentiary with a five-year sentence.

Fishing gears which have been agreed to be used by the community are the outboard (Jhonzon), hook fishing gear, big paddle boats (*hitere*) and small paddle boats (*kutuhi*), small net, anchored small boat, spear and others which are harmless for the environment. Traditional technology equipment are still in use as seen on the traditional fishing equipment display. Permission to use the equipment is agreed by the local indigenous institutions. Usually, the power of the traditional institutions effectively work when the traditional ritual activities are about to begin. The most frequently asked question is whether the customary norms are still functioning. This doubt is then answered that the strength of the local indigenous institution's power to regulate is still functioning, as the author participated directly in and witnessed the ceremony of the tiaitiki in Tablanusu.

At the time it was held in the reef region of the tiaitiki, all members of the community who came from outside the village were prohibited for fishing in the marine environment near the reef in the tiaitiki. The fishing activity was in the sea zone of *nau kotis akadame* marine areas and *kia-kia* was the venue for the prohibition.

#### **Rights and Obligations of the Community:**

In the principle of rights and obligations, the relationship is always in balance. If an obligation is completed then there is always a right to be fulfilled. Meanwhile, if there is a right acquired, it should be adjusted to the obligation. This has been implemented in the form of either personal, group, or community environmental concerns for common equal rights. The obligations of this community can be obtained from the information given by the informants during interviews. In general, the answer leads to things that are the living habits shown in this environment as described in the following paragraphs.



Spontaneous explanations by some informants and also by some communities in general provided some information that there is a similarity in implementing the rights and obligations such as the right to manage marine and land resources, distribute marine and land resources, and the right to live in the customary area. Meanwhile, the obligations to keep the boundaries of the sea territorial and keep the reef area of every clan. Maintaining reef using high customs rules and inland sea areas, maintaining good relations with fellow residents, as well as maintaining good relations with the spirits of the ancestors.

Communities of Senamai, Tablanusu, Maruway, and Tablasupa do not only enforce the rights and obligations to the residents but also to the indigenous leaders. Regarding those for the Ondowafi, the Ondowafi also have rights and obligations marked in the culture, including the rights and obligations in the hierarchy of lineage. The oldest man in the Ondowafi family is to be prompted in all the affairs of the family in regard to the preparation to replace the oldest generation, or his father. The Ondowafi is also to own the right to impose sanctions, set rights of the residents and have the right to make contact with ancient spirits. An indigenous leader, Ondowafi, has the obligations to maintain the marine and terrestrial resources, to promote the welfare of residents of the community, to maintain good relations with the ancestors' spirits, to maintain the order in the society and to maintain the position and function of the traditional councils.

### ***Community Knowledge On Maintaining Coastal Marine Resources:***

#### ***Knowledge on Coastal and Marine Resources and the Use of Tools in Fishing:***

Coastal and marine resources in the Gulf region of Tanah Merah, especially in Senamai, Tablanusu, Tablasupa, and Maruway are abundant and there are also beautiful panoramic and natural environment. Conditions such as these encourage curiosity on any existing potentials managed by the community. To identify it, information was obtained through observations, interviews, and involvement in experiencing the potential of what is contained there and managed by the community. Some marine resources and coastal potentials in this environment can be described in the following explanations:

#### ***1. Utilization of the fish and coral reefs in the coastal marine area:***

Fishing is a fun job especially in the marine environment around the coast. There are many types of fish such as *coop* (of which local name is *asa*), *paneyey* and *paneombang* fish (small fish species) and several other fish species. These types of fish are protected and served as bait. Bait fish are all protected. This fish lives in a swarm on the seafloor near the coastal community. To catch this small bait fish is usually in a sufficient amount to be later used by fishermen before going to the sea. The presence of this small fish also affects the existence of larger fish which snatch the bait fish in the sea near the coast. When there is a large number of large fish grabbing the bait fish, it marks the fishing season to start. Fishing during the fishing season is more fun because the fishermen do not bother to get to the sea far enough but they can get to the part of the sea near to the coast as they can obtain lots of fish already. The way to catch fish is done with simple traditional equipment. The use of simple fishing gear can only result in getting sufficient fish, to be sold to meet the daily needs and also to be partially consumed by the whole family.

Not only are kinds of fish regulated but also the types of coral reefs are to be included as the most important part of managing marine resources in the coastal environment. Being in the villages, the researcher and the local youths went together to catch fish and lobsters on a reef near a coast. Standing on the surface of a reef, swarms of fish wandered around the reef and some even jumped out of the water surface. Then, when diving, there was a wide range of marine life that lived in the underwater coral and there felt the ocean currents and tidal waves which exert this biota to reflect light sparkle. Also, there are basic types of coral reefs located in the vicinity of various shapes and colors interesting to observe. The life of natural ocean environment gives the impression that the treatment area of the reef and the surrounding sea is still wisely applied. If the community do not keep the environment, there will certainly not be any beautiful environment as observed. The beauty of underwater environment such as this is also the efforts of all the chiefs or clans as the owners of the reefs in every village to discipline their members to adhere to the rules respectively.

#### ***2. The Utilization of Fishing Gears and The Management of Coastal Region:***

The management and utilization of ocean resources are limited to the use of fishing gear that indigenous people have agreed to use. They are: rowboats, anchored small boats, outboard, including a variety of hooks. Rowboat is still very simple, using strong physical rowing power for fishing in the coastal marine environment. Rowboat is more predominantly used vehicle in the community than motor boat. Usually, the provision of motorboat is mostly from the government assistance to groups of fishermen. If indeed there is a private property of motorboat, the person can then be categorized in managing his work more effectively and efficiently and in managing the funds properly to meet the needs for a motor boat. And, in general, those who manage to have a private motor boat are those whose routines are as full-time fishermen.

Before motorboat was introduced, the fishermen worked with rowboats in the border area close to the coastal environment. Meanwhile, after powerboat has been introduced, there have been changes in the volume of increasing number of fishermen looking for more income by reaching areas far from the coast. The region for fishing is not the indigenous sea areas but the ocean (*beta nau*). Fishing in this region does not violate the customs rules and anyone has the right to look for fish in this region. The communities have also known traditional fishing equipment since ancient times called *rumpon berlabuh* (anchored small boats): a simple shaped boat anchored in the marine areas close to the reef (*kia-kia*).

The rapid increase in science today affects the knowledge in making *rumpon berlabuh* in terms of its design and shape such that the capacity of its use becomes more effective. It is also designed to serve as a place for fish, as a shelter for the fishermen from rain and wind, and other functions such as a shelter for small fish from the threat of big fish. Generally, communities in coastal areas can construct *rumpon berlabuh* and put it in sea areas categorized as *nau kotis* which is a part of the customary areas.

The knowledge of the communities about the season is simply categorized into two seasons which always alternate: the summer monsoon (*Yaru ya*) and the east wind season (*Yamka ya*). West monsoon (*Yaru ya*) is also called the famine season for the fishermen as they cannot go fishing because of the surging sea, the wind, and the waves are larger than normal, as well as the swift ocean currents making the fishing activities not normal during the west wind blow. Also, it is influenced by a heavy rainfall accompanied by lightning and roaring thunder. The communities also determine the calculation of seasonal changes. According to the information and the author's self-experience, it can be described that this kind of season usually lasts for four months: November, December, January, and February. During these months, the fishermen stay home while improving their fishing equipment. There is an assumption that nature provides protection and supply of natural resources in the sea and its surroundings as well as taking care of the fish which later, when the harvest season arrives, the results can be obtained and enjoyed by the communities. Regarding this, nature also naturally regulates the cycle of life in the ocean and the surrounding beaches.

Fishing activity returns to normal when the changing of the seasons begins to turn to the passing of the east wind season called *yamka ya*. *Yamka ya* becomes effective in May, June, July, August, and September. The calculation for the seasonal changes is in March when the transition of monsoon wind turns from the west to the east. Meanwhile in October, the east monsoon season wind turns into the west. This knowledge is helpful in understanding the management pattern of planning the marine resources around the coastal environment such as this. Just when the east wind season (*Yamka ya*) arrives, the

communities have more fun with sea shady atmosphere appealed to the fishermen as the best time for fishing. The shaded sea provides life to various types of fish swarming live in the sea areas that are considered as "pockets of fish" have always been the communities' concern about the exploitation of fish in excess so that the condition is expected to remain protected which later can be utilized for the common good.

### **Marine Resources in the Gulf of Tanah Merah, Depapre:**

Villages on the seaside are generally rich in marine potential. Most of the natural marine potentials have been managed but the management has not yet covered all the existing marine resources. There were several questions raised while sitting together with a group of youths. They told the researcher about several types of fish and their size and some issues that they encountered while fishing. In this case, from all the questions which were openly asked, there was some information obtained that cannot be shown as they are not related to the discussion of "marine resources in the Gulf of Tanah Merah".

In the villages of marine communities at the foot of Mount Cycloop, there are designations in the regional languages regarding the classification of forms and types of coastal and marine resources. The terms employed are in Yakari and Tabla languages (the same terms - differing only in dialects). To name a few species of the marine animals, fish, and plant species and also coral reefs, the following classifications are made.

1. Type of animals and fish that live in the coral. Some types of marine animals that live and breed in the sea areas of reef around the coast are: sea cucumbers (*pakua*), sea eels (*tero*), sea snakes (*matepang*), octopuses (*oriti*), squids (*Niso*), shrimps (*angka*). The types of fish such as trevallies (*saoura*), red snapper (*meronsia*), sako (*sau*), coop (*asau*), and *lompa* fish, small fish species (*paneyei*), *sero* fish (*yori*), and large fish of *lompa* species (*paneumbang*).

2. The type of fish that live in the open sea. There live several species that they know such as skipjack tuna and yellow fin (Phoenician), swordfish (*depai*), mackerel (*taning*), red (*asome*), daole (*kasu*), suo (*ali- ali*), coop (*asau*), trevallies (*saoura*), and gumuru fish (*yepasindei*).

3. The type of plants and sea shells. In coastal marine areas there has been generally a lot of plants like coral plants that grow on the ocean floor (*aka*), green seaweed (*kasi-kasi*), brown sparks grass (*array*) and a plant species called the *kerbaharu*. Several types of shells known are *bia kima* (hollowed nautilus), clam shell (*nekoimblou*), *lola* shellfish *lola*, hooves clams, triton trumpet shells, a variety of small and large clams, mooneye shellfish, shellfish (*karia* and *kung*). Information about the types of plants and shellfish obtained is the result of in-depth interviews to determine the types of plants and shellfish that is, according to research

problems, associated with a variety of marine resources directly to the environmental needs of this community. It is also acknowledged that there are still many things that have not been recorded as what is outlined in this article still accommodates the knowledge known by the community. Because the community has known quite a lot but incomplete, this explanation describe only a small fraction of the amount of knowledge that they know.

### ***Fishing Equipment in both Traditional and Modern Types:***

Modern equipment that are known by this community such as fishing gears using motor boat, techniques of making *rompon berlabuh* and fishing line with multiple hooks. The communities also prohibit techniques that use modern equipment that are regarded to be inappropriate or harmful for the marine environment such as bombs, potassium and cyanide poison, and also the use of sea *bagan* structure. The reason why the use of the sea *bagan* structure is prohibited is that, according to the information obtained from the community, although both *rompon berlabuh* and sea *bagan* structure are anchored in the same sea, the sea *bagan* structure can obtain more number of fish than *rompon berlabuh*. Meanwhile, to have the sea *bagan* structure requires great number of funding that is why the communities equate all means of fishing equipment taking into account the economic circumstances of the local communities. Based on these considerations, *rompon berlabuh* and other equipments mentioned are chosen for the acceptable fishing gears that are currently found in the community.

The attitude of using these equipment is affected by the environmental outlook on life that is more valuable to them than the earnings. Feeling of anxiety always touches the soul when there are fishing vessels from the outside fishing in their marine coastal areas. Members of the communities spontaneously show their attitude and produce screaming sounds using the fishermen language to repel those outsiders. The implied message contained in this attitude conveyed in the language represents their attitude of seriousness to protect this region from human interventions from the outside and the use of more exploitative equipment.

### ***Knowledge of Tiaitiki Amid the Jayapura's District Development Policy:***

Knowledge, in many ways, always starts from abstract ideas as it is essentially knowledge of all what is known about a particular object. In this case, the knowledge includes the knowledge of Senamai, Tablanusu, Tablasupa and Maruway on the *tiaitiki*. In addition, the *tiaitiki* is the knowledge of usability in preserving the coastal and marine environment.

Modernization process goes according to the changing times, but not necessarily it directly removes attitudes and behaviors or values and norms implied in the *tiaitiki*. How well a series of abstract conception lives in the residents' mind is not only about what is important and valuable, but also about what is considered unimportant or unworthy in life. From the assumption, it can be understood that the norms of the community that serve as guides that encourage behaviors in life. This also functions as a system of behaviors put in the highest position as what has happened in the traditional law enforcement of the *tiaitiki* in the village communities of Senamai, Tablanusu, Tablasupa, and Maruway.

#### ***1. Knowledge of the tiaitiki in the form of actions and sanctions:***

Awareness to preserve and conserve the environment is the knowledge passed down by previous generations. How that knowledge manifests in physical form, an open question is then asked: "*How does "the manifestation" of communal actions to protect the marine and coastal areas?"*" The answers obtained in the form of statements in Yokari language are as follows: "*Da akurang bisi-bisi warunatena, wey nau, wey dukulu poi semate kende, nedamblena wey yerew nemenabeite tenonemene*".

Formulation of expression from the community at large considers that the changes faced by every generation are different, because it may be that the novelty that is accepted is difficult to change thinking patterns and adaptation process of change is too slow. Therefore, it is proved that the *tiaitiki* power is still enveloped in their minds. The content of the citation remarks that "the communities doubt that various changes experienced may bring both positive and negative impacts. For the community, the action to keep the coastal marine life well is what matters. Survival will continue through generations in such a way that they can keep enjoying the results of marine and coastal resources.

The manifestations of actions are then framed in the *tiaitiki* implementation mechanisms; that the implementation of the *tiaitiki* reflects the forms of action values or norms that serve to protect marine resources. Actions and sanctions are two different concepts, action is basically coercion based interest while it is rewarded as a result of improper actions against rules or norms. For each action, it is not necessarily to be accompanied by sanctions. That is why there is a need of differentiating these two concepts.

#### ***2. The Tiaitiki in Reef/Sea Coral regions:***

*Tiaitiki* in reef/coral sea in the villages is a form of action and attitude that resembles a prohibition not to take or interfere with a variety of resources in the area of the reef or rock that has been labeled *tiaitiki* for a certain period of time (usually 9 months, 1 year or 2 years). The determination of the period adjusted is based on the needs and seasons.

**a. The Tiaitiki based on needs:**

The *tiaitiki* based on the needs is done at the time of the death of a traditional leader or the marriage of a child of the Ondowafi's family. The enrollment of the *tiaitiki* based on need is usually done if there is a joint agreement between the general community and traditional leaders, on what should be sacred, both for the wedding ceremony or death. The enrollment of the *tiaitiki* is not restricted for a short period time (usually 1 to 2 years) which is considered to be sufficient to cancel the prohibition, and give the opportunity to all residents to exploit marine products around the reef. Next, the results obtained will be divided as agreed: some for the weddings or the death of a chief while the remaining will be consumed by the family. The *tiaitiki* is not only applied to the marine areas alone, but also to the land areas. The enrollment of the *tiaitiki* on land that focuses on planting trees and fruits such as prohibiting to collect coconuts and harvest timber at a specific location within a period of 5 to 10 years or more from the time of calculation. A possibility of shifting to the interval of 12 years is due to the fact that trees have not met the standard to be cut down for boat making and other purposes.

**b. The Tiaitiki based on seasons:**

The *tiaitiki* based on the season is the form of prohibition established in accordance with climatic conditions faced. The communities have knowledge about the climate, especially of the area that is located in a bay facing the Pacific Ocean, and also the borders, on the equator line, with the understanding of two kinds seasons. The communities call the summer monsoon in the local language *Yaru ya*, and the east wind season *Yamka ya*, or more commonly called the dry season. In the rainy season, the east wind season *Yamka ya*, the state of the sea is calm since the weather is sunny, the wind is moderate and wavy. The season begins in May, June, July, August, and September. Meanwhile, for the west wind season *Yaru ya*, and the west wind begins in November, December, January and February. At the beginning of March to April, there is a shift back to the summer season or dry seasons caused by the east wind. The enrollment of the *tiaitiki* according to the season is a provision that has been standardized, and the viewpoint of the sea is not equal to that of land, as the sea is very dependent on the seasonal conditions. The rationale for this affects the way it treats the *tiaitiki* with a procedural system i.e. when the west wind *Yaru Ya* the *tiaitiki* is enforced, otherwise, if the east wind season comes (*Yamka ya*) the indigenous leaders immediately observe the reef regions where the *tiaitiki* is enacted, to determine whether there are indications of marine products worth for harvest, or to wait a few weeks or months. Moreover, determination of the time or date of harvest is tailored to the desires of the village communities, and the harvest season is conducted during the shady dry season – *Yamka ya*.

The *Tiaitiki* is imposed using some special materials: pieces of logs of which the length are  $\pm 5$  to 6 meters, usually the type of wood used is *mange-mange* which is also called *lolaro* or mangrove, and other wood species such as *bintanggor* or *temai*. The trunk is prepared to be put on parts of the reef to be prohibited and marked "*Tiaitiki*" then wrapped with the tassel of young leaves of palm trees, which indicates that the reef region is prohibited and closed for public. The winding palm leaves and tree stakes bars contain the symbol of magic power. The *tiaitiki* of this kind contains penalties requiring compliance from the community members if violated, otherwise they will be sanctioned. There are three kinds of sanctions, namely physical, moral and supernatural-power based sanctions. The sanctions are imposed in a sacred ceremony, marking the opening ceremony or putting on the *tiaitiki* or the closing ceremony or taking off of the *tiaitiki*.

**c. The Putting on the tiaitiki Ceremony:**

One form of ceremonies is to ask for blessings from the ancestral spirits and inhabitants of certain sacred places, in the area around the coast and sea, in capes, in coral with all the surrounding lives involved as the guardian of the reef environment in order to hold the *tiaitiki*. The *tiaitiki* in the form of the putting on ceremony by praying to supernatural powers to protect and give an abundant harvest, through praying to ancestral spirits and other supernatural creatures which are believed to be the guardians of the sea. This praying is done via spells.

It is believed that the spirits are involved in maintaining all kinds of fish and seafood in the *tiaitiki* region. If there are people who intentionally or unintentionally enter the restricted areas, it is believed that the people will receive punishment commensurate with the offense.

Prior to the ceremony, it is firstly announced to the villagers by the customs of the elderly about which reefs will be posed the *tiaitiki*, conditions that must be adhered to during the *tiaitiki* are also announced. This ceremony also serves as a medium of information for neighboring village communities to obey the rules and not to fish at the *tiaitiki* region.

After notifying the villagers, towards the evening, the elderly gather and sit on the place of negotiation (the front house of the Ondowafi), while reciting poetry and singing *wari-wari* song, the rhythmic songs of peace accompanied by the wasps of drums to worship the Lord of the universe and all the forces of nature in the surrounding environment, to invoke protection, blessings, and life. In addition to the *wari-wari* song, there are also some traditional songs sung, however the songs (are secret and can not be mentioned to the public) contain magic power. The songs are sung by the Ondowafi together with the "*nau yo sea clan*" to ask for the blessing

from the ancestral spirits and other supernatural creatures in the coastal and marine environment around. They are convinced that the blessings from the supernatural world will bestow various types of fish into the area of the reef, and they believe that if one takes the results prematurely, he or she will be hit by the curse from the villagers or from the supernatural realms. This tie somehow becomes the control for the residents' behavior patterns and attitudes to live in this neighborhood. The wooden stakes (symbols) put in the area of the reef are prohibited to be removed for a certain period (one to two years according to the needs of the community).

**d. The Taking Off of the Tiaitiki Ceremony:**

The opening ceremony by putting on the tiaitiki until the closing ceremony by taking off of the tiaitiki is a series that has been inherited based on the communities' knowledge systems. The ceremony is usually carried out in a manner based on the arrival of the dry season with the east wind blowing and the sea becomes calm called *Yamka ya* season, starting from May to September. In this interval, the month, date, and day of the ceremony are all set. All matters concerning these things bestowed upon the traditional leaders to decide, when adjusted to the state of the sea water during the day in the afternoon. Towards the taking off of the *tiaitiki*, the indigenous leaders gather at night in front of the house of the Ondowafi to talk. To hold this ceremony, singing traditional songs by the traditional leaders is preceded. Appropriate to the customary mechanisms, spells are recited to restore the original situation of the sea reef to thank that the villagers do not get any interference from the surrounding environment. Towards 4:00 a.m., the traditional leaders paddle around the tiaitiki reef to repeal the wood benchmark. Thus, on the same day, the village communities flock to harvest the marine products in the reef area that has been opened for public.

During that time, before the ceremony ends, the residents have prepared a variety of fishing equipments in advance such as preparing the roots of tuba (*seido*), a type of plant roots which is used for killing fish, setting up a spear (*kalawai*). *Kalawai* is a weapon made of long stick with wooden handle that is attached to a rubber wire. The wire is then pushed to shoot fish. They also prepare paddle boats and other equipment. When the harvesting starts, that means the tiaitiki period is now over for Tablanusu village.

The residents rushed to the reef region that has been opened to harvest the sea products. Various types of fish and marine lives such as shellfish, shrimps, lobsters, and a variety of marine life that is consumed are taken. Then the amount of the catch is collected in one place and distributed. Some shall be provided for the Ondowafi, and the rest is distributed to all residents of the village community. A big gratitude to all the residents of the village communities that enjoy it is done through ritual ceremonies and dances. This indicates that the harvest is plentiful and everything that is obtained from natural resources needs to be thankful for. Happiness is manifested in the form of art.

**e. Magic to Protect Marine Products:**

The sacredness of the tiaitiki is determined by the strength of its magic power. It is something that is hard to believe, abstract, yet such a thing can be understood through some events experienced by the communities of the villages in Tanah Merah, Depapre. The notion of the magic power serves as a weapon to maintain the life of any threat from external attacks, whether from human or natural environment. Magic for the communities is an important knowledge that is intended for survival. The form of magic is used and classified based on its kind and who is entitled to use it. There are two kinds of magic identified, namely:

**1. Magic for Positive Purposes:**

The nature of this type of magic is for helping or rejuvenating life of the communities in terms of the acquisition of marine products and to solve various kinds of problems that may be difficult to resolve in a humane way, but through the magic it will be more convenient. This kind of magic is called *katetarina*. Magic used for gathering swarms of fish to cluster into the coastal marine areas, making it easier for the residents to get it. This type of fish comes in a variety of sizes. The magic is also used for the preservation of environmental management. Here magic has a double function: besides the function of obtaining fish for their daily needs, the other function is to protect the fish from extinction. Besides, this magic intended for the marine sector as it is used for activities on the mainland. Magic, in its function as it is, is derived from the power of positive supernatural.

**2. Magic for Negative Purposes:**

This type of magic functions as an answer for troublesome life of citizens, such as the sick, or miserable human life up to meet death. Knowledge of magic has been handed down until today used by those who deserve and are entitled, including the Ondowafi and some traditional leaders. This kind of magic is greatly feared by the people because is difficult to know who is responsible for it if someone dies in unnatural circumstances in a state of sudden collapse and after being treated a few days at home the person dies. Unexpected events may occur, and the power always knows the mind and the feelings of citizens, so that a dominant fear of "*sondo*" (local term for those who use supernatural powers to kill humans). Based on the information obtained by the

researcher, it is mentioned that the knowledge of magic has been structured and classified according to the nature of the functions and needs, such as magic called "*fallow nau*" a kind of magic used to set the prohibition on coral reef or sea.

The negative function is to be used for killing those who break the rules at sea. The condition of the people affected by this kind of magic will be decreased in physical strength. As a result of this is continuous ill and died. Next, there is also a kind of magic that can cause coastal erosion, called "*nautetarina*" magic. The power can bring unexpected large waves. As according to the season, it is actually shady weather condition but when the power is applied, on the contrary, there will be big waves. There is also a magic that can bring strong winds, called "*arubero*". According to the communities, The wind occurred will result in the destruction of people's houses with a power to pose a huge wave. On the contrary, the magic to deaden wind and waves is called "*amaru-amaru*". Another magic called "*yang kena daro*" is the magic to create rain, and accompanied by roaring thunders and lightning. Overall, the knowledge of magic is still owned and is considered valuable in protecting the life of the local environment.

### **Knowledge of Society of Marine Sanctions:**

For this discussion, the raised question is "Are there any sanctions for those who violate the *taitiki*?" Various information has been gathered from all informants in the research location. In general, the communities choose to keep the knowledge of marine sanctions.

From the information obtained, it can be formulated an establishment that: "Every generation faces different changes, and because the novelty received is difficult to change the thinking patterns, therefore, the process of change is slow. Conversely, when the citizens of this community do not care about the knowledge, a certain manifestation of the change received is a more exploitative attitude to life. In the physical form of behavior, people are more concerned with the economy and business improvement with the coastal and marine environment. They then sacrifice marine resources just for the sake of the necessities of life. Moreover if life is only of postulations but people just want to compete for wealth and position, all the potentials that are there in the marine and coastal environment around it will be at stake. People will have no guilty feelings about the damage caused by excessive intervention.

This viewpoint is an excerpt of the expression of thought of the community, to the circumstances encountered nowadays. Sanctions are community awareness and respect toward the values and norms that are considered "high value" for common good.

In principle and reality life of Senamai, Tablanusu, Tablasupa, and Maruway, there are sanctions imposed on violators of customary rules. Usually, they are sanctioned in accordance with the level of infringement or actions. Severe sanctions are given to people outside the country who entered the sea area without permission, fishing using prohibited fishing gears such as bombs, potassium or cyanide poison, the *bagan* structure, trawlers, and fishing boats in commercial scale.

Sanctions which are severe are applied not only to the outsiders of the village, but also to the residents of the surrounding villages based on the actions done. Sanctions are given in the category of reasonable, meaning that it can be accepted by all components of the community, in accordance with customary rules that are hereditary. Sanctions imposed are not something new or coincidence, but these contain basic values, and also suggestions that are hereditary. In the local concept, it is called "*ayeko kanya nou*" interpreted as "generations of predecessors have warned that any borders, both for the land and the sea, have been adopted by the rule of law and there are sanctions await." Therefore, the process of giving sanctions is a natural thing for the community.

Sanctions are still to be complied with by the community although some of them begin to weaken, as the result of changes. There are aspects described in relation to the element of change in the community knowledge. Through observations of the environmental community, and the interviews conducted and active participations in some activities there are many things that are embryonic towards the changed knowledge. This section will later be discussed at the end of this discussion. The discussion related to the sanction of the community and the entrenchment is drawn from the lifestyle handed down by the older generations to the later generations. In the function of sanctions, there have been some forms of imposition, their classifications, described as follows.

### **Forms of sanction:**

The provision of sanctions to those who violate is in accordance with the level of offense category standard in the decision of local customs. The sanctions are applied to those who violate customs regulations, prevailing among residents in the villages, between villages, including the outsider who violate customs rules. **Sanctions of destroying fishing gears**, are sanctions imposed on the fishing equipment such as boats, or other fishing equipment, tools that are not in compliance with the customary rules. **Sanctions of seizure of goods**, this sanction is applied together with the sanctions of destroying fishing gears. If the sanction is stated "confiscation" then automatically the destruction of fishing equipment used is not applied. Sanctions of seizure of goods are based on humanitarian considerations. The seized goods are used as guarantee or material evidence, if the issue needs to be negotiated to the customs board level. The village council becomes mediator and may file the goods

as the evidence to be processed in the formal law and if the problem requires the presence of the police. Sanctions of death, in the past, was a form of sanctions imposed on violators of indigenous territories. At this time the sanction is no longer valid. The nature of these sanctions is not physically "spontaneous", but it may be realized through supernatural powers. Moreover, the sanction of death is usually shrouded in magic powers, which are still predominant in use.

Additionally, the communities may also run moral sanctions (threats), and some forms of moral sanctions in Yakari and Tabla languages is stated as: "*wei nou! wey duple baieu-baieu, wey dheryene bay touwtepine.*" The sentence is translated as: "Go away from here! This place does not belong to you, do you want me to kill you?". This expression is to scare the people who do not obey the customary laws of the village who can be divided into two categories: outsiders from outside of the village and residents of the village.

#### ***i. The application of sanctions for Outsiders:***

Based on several examples of cases, the goal is to realize ways this community runs like the one that occurred in 1994 for illegal fishing in the sea area of Tablasupa region by a group of sailors; the memory is still freshly told by the community. Four fishermen from Buton-Jayapura, caught fish using a vessel and entered the Tablasupa village's indigenous territories, without any permission from the local community residents. At the time being in the indigenous territories and the ship was docked for a few hours, the sailors infuriated the community residents. The anger was expressed by actions of pursuit and capture of the ship. By the time the people were pursued, there was a resistance from the four fishermen. At the end of the day, two fishermen were hit by the blade of a machete at the back and the two others were severely beaten. They were unconscious and then taken to the hospital and they were saved. The community members then seized the ship and anchored it near the coast as material evidence and as a warning for outside fishermen not to fish in the customary regions.

In 2000, SY, a Senamai youth with three Chinese fishermen went to the area of the indigenous village in Senamai region silently without the acknowledgment of the community residents. They used potassium and cyanide poison to catch fish. This lasted for almost six months. Sunday, according to the teachings of Christianity, is not permitted for people to fish during the religious service. The fishermen's group then approached the sea near the coast to catch fish. A Senamai youth noticed this and made arrests, and they severely got beaten. All the arrests and their equipment were confiscated. The case was then forwarded to the Demta Police District Demta because at that time Yokari Police District had not been established.

In 2001, in the sea area (*anaidame*) of Senamai village border, anchored a boat belonging to Tablanusu residents. Residents of the village community Senamai had warned them three times to the Tablanusu fishermen. They gave no response, and chose to anchor their *rompon* at the area. The Senamai residents then chose to defend their territory and a quarrel took place between the residents of the two villages. Senamai residents took an action by cutting the anchor spontaneously and the case was reconciled through an agency service of northern Daponsoro tribal councils, accompanied by the police of Demta, Depapre District, as the mediators. The outcome of the peace talks was that the Senamai residents receive full support on their action of protecting their indigenous territorial boundaries. In general, Northern Daponsoro Public Institution asked the coastal residents to remain consistent with each village's coastal areas.

#### ***ii. Penalty sanctions for villagers of Senamai, Tablanusu, Tablasupa, and Maruwai:***

The sanctions given are generally the same. They include physical, moral, and magic. There was one case of sanctions that resulted in a combination of physical, moral and magic sanctions. In 1999, a villager of Senamai bombed fish in the reef area of Yartupey belonging to Yarisetou clan. The act was reported to the Ondowafi YO (deceased), who as an Ondowafi had the power, full responsibility, and every right to manage resources both at the sea and ashore. Then, the Ondowafi ordered a functionary to immediately call AY to come, in order that these problems may be processed through traditional law. With the assumption that he was pleaded guilty, AY was then presented. The Ondowafi, with the chair of the indigenous village and an traditional expert of the sea area (*nau yo*), accompanied by an expert on traditional law trusted by the Ondowafi (his right hand man). Invitations sent to people from different social statuses, such as the leader of the village, the secretary, and the staff, as well as the religious leaders, as well as all the villagers to be present to witness the customary proceeding.

After being opened, the proceeding allowed AY an opportunity to report how many bombs, and explain the reason of using bombs to catch fish. The following speaker was the head of the clan who was also the owner of the reef who remarked on the losses suffered by his clan members. This input was used as a consideration by the Ondowafi to determine the sanctions. Before the sanction was determined, the third opportunity was given to the leader of the sea area (*nau yo*) who proposed the rules as the condition to be obeyed together. Focusing on the explanation, AY as the perpetrator of violations of the customs should be reprimanded.

On the deed conducted by AY and according to the input of the head of the clan who owned the reef and expert of the the sea areas (*nau yo*), the Ondowafi penalized AY with his family to feed the members of the reef owners. The food prepared includes taro/yams (*Kesei*), banana (*eng*), sago/*papeda* (*pii*), sweet potato (*Bokoi*),

pork (*obpo*), fish (*ka*) and vegetables. Before closing the proceeding, the Ondowafi delivered the message in the form of a prohibition as expressed in Yakari language: “*Nekewena damena satna mekopinya, nekewe mekopuna wey meka Arombune beasa onawapa kirimini*”.

This implies that AY should never again do anything like this. If the act is repeated, then AY will get the consequence of "what will happen". The moral was not only presented to AY, but also to all the people who were present. They also must comply with the rules governing the interpretation of common interest in the community that the submission of such the Ondowafi contains supernatural powers or (magic).

Approximately, two months later, AY did the same violation by bombing the same reef (*Yarutupey*). The case was also noted again by the village council, AY was then called back to immediately be present in front of the customary court for the second time, but the call was ignored by AY. Moreover, he was out in the morning to bomb the fish in the reef that had been banned. As a result, AY experienced a disaster, he was exposed to the bomb explosion. His left hand was broken as a result. AY was treated in a public hospital in the Dok II. of Jayapura district. He still lives now but with a physical disability.

### Conclusion:

Residents in the villages around the Gulf of Tanah Merah have a close relationship with the sea and its surroundings. The sea in Yakari and Tabla languages is called *nau*. Second, these two languages have similarities but there are some differences. Every speaker can understand each other when communicating using both languages. On the basis of language characters, there is a need to correctly understand the language used. The coastal communities, in general, have similarities in the knowledge of traditional marine science; their languages contain messages which are in accordance with the values found in their lives. The principle of similarity is apparent on the implementation of inter-norms that are widely found within the community. This is similar to the premises on land boundaries of the residents, also called as "marine customary rights" (indigenous peoples' territory). The management of marine areas which are categorized in the form of marine customary rights functions under common interest.

The sea and all its potentials therein are recognized as potentials created by the Almighty God who gives them the sea areas to be managed, maintained, and prevented from damaging it. As the older generations have been there, they entrusted messages containing customary wisdom about the marine and coastal environment be kept and maintained. The messages imply the philosophy of life learned. For the sea communities, the treatment towards the sea is full of wisdom in organizing and managing the resources in it.

A realization of obedience to all of these rules is the rules must be obeyed to promote maximum fish caught, enough to sustain the needs of the family and harmonic survival with the environment where they live.

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