

Duanu's Tribe Local Wisdom And Traditional Ecology: A Way To Survive

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Abstract

The Duanu tribe community still adheres to ancestral values and preserves nature, the value of local wisdom of the Duanu tribe maintains and prevents coastal areas from being damaged, this study aims to identify the socio-cultural dimensions of Duanu local wisdom in an effort to survive. There are two reasons why this field is sociologically interesting. Firstly, it is the oldest village. Second, the opportunity for economic intensification and the increase in Duanu's socio-cultural complexity. With a qualitative research approach and through a case study method, the results of the study revealed that the Duanu tribe has two types of local wisdom in the form of traditional ecological knowledge, namely Menongkah, Pembelat, Menumbur, wind direction, season, presence of animals, and shell holes, shrimp or snakes.

Keywords Social Culture, Local Wisdom, Traditional Ecology

Introduction

The modeling for natural resource management must be considered reasonable to the characteristics of their natural environment and region, along with socio-economic communities. Coastal areas for example, have the open access characteristic in which authorities are not regulated in a manner which ensures the chaos become vulnerable. In addition, the characteristics of coastal areas where the socio-economic level vary widely require more complex and composite controlling than other resources elsewhere. Thus in the process of managing, both the government and stakeholders should pay attention essentially to the local wisdom preserved by the local community because its values are commonly used to maintain the natural conservation as done by Duanu Tribe in Indragiri Hilir Regency Riau Province. Duanu is a tribe of people living along the coast that their lives depend on the sea.

The awareness regarding the existence of a sea as a source of livelihood initiates the tribe to uphold their local wisdom by avoiding over-exploitation decisively. In preference, they use

traditional ways to obtain seafood such as fish, shellfish, and lokan (kind of clam). Duanu tribe still relies on simple equipment to do fishing and hunting shells in the mud. Their chase becomes uncertain and insufficient that the income is consequently very few. The average amount of income is only adequate to survive within a destitute living condition. However, the Duanu tribe decides to retain their local wisdom in order to preserve the sea.

Duanu Tribe's decision to maintain their local wisdom is manifested in "Manongkah Masal" Movement, including their traditional way of shell hunting in mud that has been recognized by Indragiri Hilir regency. This activity has been recorded for MURI and registered as Intellectual Property of Sea Tribe. Nevertheless, the Duanu Tribe's persistence in maintaining the utilization and management of coastal resources based on local wisdom cannot be implemented in the most efficient way as large corporations have started to expand using modern equipment in coastal areas where it is concerned may damage the environment.

Lack of stakeholder concern over appropriate utilization and in accordance with regional characteristics can trigger not only the environmental imbalances but also the social changes of local communities. Duanu as a local community will be discarded and discouraged from the benefit of potential resources because massive capitalists and modern equipment begin to emerge. This phenomenon will also certainly affect the daily expenses of Duanu Tribe because they entirely depend on the sea in maintaining their life. Concerning the stake holders' ignorance towards local wisdom, Duanu tribe's continuance is also being at risk.

Thus it is necessary to examine the values of Duanu's local wisdom in remaining persistence, maintaining local wisdom, and preventing coastal areas from destruction. Thus, this study is conducted to determine how the social and cultural dimension of Duanu Tribe's local wisdom relates to their survival effort.

Coastal areas according to Dahuri, et al (1996) is a transitional region between land and sea, where the landward boundary is the arbitrary distance from the highest tide average, and the boundary to the sea is the jurisdiction of the province or nation in a country. The coastal physiology is considered as the area between the coastline to the land that is still influenced by the tides, with the width determined by the shoreline and the seabed, and formed by the clay deposits to the loose sand and sometimes the material is gravel.

Coastal areas as dynamic ecosystems have very unique characteristics. The uniqueness of this region reminds us of the importance of integrated and prudent management. Biophysically coastal areas have characteristics including a) Empirically there are ecological linkages (functional relationships) either between ecosystems in coastal areas and between coastal areas with upland areas with loose seas, b) In a coastal area, there are usually more than two natural resources and environmental services that can be developed for the sake of development, c) In a coastal area, in general there are more than one community group (people) who have different working skills and preference as farmers, fishermen, pond farmers, seaweed farmers, tourism companion, home industry and handicraft.

Furthermore, both ecologically and economically, monoculture coastal uses (single use) are highly vulnerable to internal and external changes that lead to failure, e) Coastal areas are generally common property resources that can be utilized by all (open access) so that in regional development and resource utilization often causes conflict of interest of space and resource utilization, along with opportunity of environmental degradation and externality problem that are increasing due to over exploitation of the utilization and limited resource management. Therefore, this condition often leads to a common tragedy Dahuri (1996).

Coastal communities have different characteristics from other communities. Through the anthropological perspective, this condition is based on the social fact that coastal societies have different cultural patterns as a result of their interactions with the environment and its resources. Cultural patterns become a disposition of coastal communities in daily living. Satria (2004) adds that theologically, coastal communities especially fishermen, believe that the sea has magical powers, so there should be a special treatment when the activities at sea such as catching fish in order to get plentiful results.

The condition of coastal community especially fisherman, is commonly not organized properly. In regards to the low quality of socio-economic condition, the long-term pressure on coastal resources includes the demands to fulfill the community necessities. People living in coastal areas are called coastal communities, who form a distinctive culture that relates to their dependence on coastal resource consuming Afiati (1999). The coastal communities based on marine resources are fishermen, fish farmers, sand mining or sea transportation.

Natural resources management is a human effort in transforming ecosystems to obtain maximum benefits, by seeking sustainability of production and ensuring the sustainability of these resources. Management of coastal resources basically is a process of controlling the actions of people or communities around the coastal area so that the natural resources are used wisely by following the rules of environmental sustainability (Supriharyono, 2000). The management of coastal resources has not been completely accomplished by the government. Furthermore, the local community does not obtain reasonable amount in return.

Coastal resource management should focus on the space within a single dynamic environment while still maintaining the unity and sustainability of the available environment. According to Supriharyono (2000) several considerations in the management of coastal natural resources include (a) economic considerations, (b) considerations of environmental aspects and (c) socio-cultural considerations. Moderate and sustainable use taken from coastal and marine areas must be carried out responsibly, intensive management planning is required.

Coastal communities are commonly familiar with the surrounding environment because they have been coexisted with nature in a harmony for long period of time. Thus, they are experienced utilizing natural resources through various ways in a sustainable manner. Traditional and coastal societies have unique characteristics such as simplicity, high emotional ties, culture and loyalty to the cultural leadership as well as in behaving, the community will be guided by various things that in essence have good and bad values as well as on activities based on right and wrong. (Brennan, et all: 2002)

Attitudes and behaviors acquired from the local wisdom are also manifested in actions by coastal communities in order to maintain the natural resources and environment as a form of conservation. Local wisdom according to Keraf (2002) is all forms of knowledge, belief, understanding or insight and customs or ethics that guide human behavior in life in the ecological community. Local wisdom not only deals with the knowledge and understanding of the people about human beings and how good their relationships, but also closely related to the knowledge, understanding and customs about human beings, nature and how relationships between the inhabitants of the ecological community must be built. Local wisdom is the values or behavior of local people living in interacting with the environment where he lives wisely (Anggoro, 2004).

Methodology

This research used qualitative approach of case study. There are three relevant sources in collecting the data during the research process including in-depth interview, observation, and documentation study (Creswell, 2010) The data obtained was analyzed qualitatively, focused on the meaning, description, and data arrangement based on the context available in the form of words through data reduction, data display, and conclusion and verification.

Result And Discussion

Bela River Village is one of the coastal villages in Indragiri Hilir regency prior to Indonesia's independence called Kampong and became a kenegerian. Sungai Bela Village has three Dusun consisting of 26 RT. The Duanu Tribe Village in Bela River Village extends to the river or beach. They set up a stage house with an area of approximately 6 x 11 m², which is approximately 2 to 4 meters in height aimed at avoiding rob or tidal water. Duanu Tribe House in majority are made of wood, its structure consist of supporting poles, floor, wall and roof using zinc. There is a board of wood and part of the concrete to connect among houses. Most of the houses contain large tubs to accommodate rainwater, because the groundwater quality is poor. Some residents also still place logs either from the shells or roots of trees for their safety.

Most of the Duanu Tribe communities in Sungai Bela live depend on coastal resources. They become traditional fishermen by looking for fish, coral or shrimp and other marine products. But many also have jobs in other fields such as agriculture and plantations. However, the products have not been optimized due to limited knowledge of the community and the absence of support from experts. In the field of social and culture, Sungai Bela village people maintain and uphold the culture and customs inherited by the ancestors. It is established through the cultural order and local wisdom in every wedding, harvest and some other community activities. The most important institution in preserving and maintaining the custom of the Duanu Tribe is the Traditional Institute of Sungai Bela Village (LAD).

The socio-cultural dimension includes routines, customs, values, and demographic characteristics of the societies in which the organization functions. The Duanu in the Bela River has a social and cultural dimension of routines, customs, and values associated with survival in accordance with its characteristics as coastal people living along Bela River. These dimensions are summarized into a local wisdom carried out from generation to generation.

Duanu Tribe has a local wisdom in fishing. This local wisdom is maintained because the tribe has a philosophy of "Piak Duanu Lap Dedolak" which means that Duanu is not lost in the sea and the existence of Duanu society with nature, especially the sea as their habitat is inseparable and extremely being involved. All marine-related activities have also taught the coastal people to survive which then led to the knowledge and technology related to the signals from several natural phenomena in fishing. The knowledge is believed and obeyed by the coastal people. Formerly, it becomes the local wisdom that deserves to be preserved.

Based on the results of interviews, observation, and documentation studies, it is obtained that Duanu's local wisdom in Sungai Bela Village is implemented as their efforts to survive and described as follows.

Traditional Technology In Capturing Sea Products

Traditional technology in fishing is still used and run by Duanu in Sungai Bela rural community. Traditional technology-based fishing has a characteristic of eco-friendly equipment, static, simple and effortlessly being more selective towards the catch. The advantages of this traditional technology including accessible cost, admission and is able to provide opportunities to increase the amount of catches.

A form of local wisdom that is known and owned by Duanu Tribe in Riau to survive is called Menongkah. Etymologically, it comes from the word tongkah. According to the Great Indonesian Dictionary published by Balai Pustaka (1999), tongkah is a board for pedestal (catwalk) usually placed in the mud or damp. This local wisdom is one of the traditional fishing technologies. The catches from sabongan activity are blood clam. It is called blood clams because the color of the flesh is red identical to blood.

According to the belief of Duanu community, menongkah has existed for ages. Primarily, the technique was done by the royal soldiers in a journey to get food along the beach because it was their primary food source. In other words, formerly the technique was established only to meet their eating demand, but menongkah subsequently become an occupation and cultural icon of Duanu. It is also being established in menongkah festival and several competitions.

Manongkah can only be found in seacoast villages, one of them is in Sungai Bela. The activity starts from Sungai Bela Village as the oldest village. Currently, manongkah also has become a tourist attraction because it was discovered in Indragiri Hilir by both local and national broadcasting.

Menongkah is assembled by tongkah or board. It is usually made of wood named pulai. Pulai woods are easy to obtain because of the plants are usually growing in peat swamp forest, near the coastal land, and around the river. Pulai wood is chosen because it has a wide diameter of 100 cm or even more. It is also light and smooth.

Pulai wood has a longer resilience, is more resistant to leaks, and has a high float capacity so the barrel can last for years. However, the current limited number of pulai wood has caused the community to turn to other type of wood to make barricades. The disadvantage of other woods is that in the process of manufacture, the container should be expanded to be wider. This often causes leaks that may obstruct the activity of menongkah. It will make it difficult to slide along. When the tool leaks slightly, then it has to be replaced and become fragile.

The attempts of material swap have also been done by Duanu people such as by using paralon. Paralon is designed to resemble the tool, but its intensity often makes the tool leakier due to the sand-friction and ends up to be difficult to move.

The reason why people keep using wood is because they are light. The board is made by combining 2-3 wooden boards with nails. One barrel is 50 x 150 cm, some are smaller. Then the barrel tips are made oval or thin and slightly curved upwards to ease its movement. The sharpness of the board tip greatly affects the speed because less curved board can cause it to stick in the mud while catching clams.

The curved tongkah shape is very unique and resembles the surfboard used by surfers. Just like surfing, using tongkah in manongkah requires a special skill in both balance, leg strength and hand prowess. In the process of manongkah, the right foot is used to push the tray board like

surfing, while the left foot rests on the tray board. The right or left hand take the coral that is in front and place it on a pre-prepared container. To steer the barrel, the right hand and the foot together point the board to where the direction will be. There is no standard rule in this process, the majority of Duanu tribes acquire self-taught skills and not everyone can do this technique.

Before leaving for manongkah, they usually begin praying, there is no special ritual that requires a lot of requirements on menongkah activity. The equipment they carry on the board is vessel, a container like used sack or a stereophonic box. Formerly, the container was used for hammering (ragu), ragu is a container made of tubular leaf. They can carry several containers for shells to anticipate plenty of catches. Once arriving, they will back up their tongkah offshore. There is no particular route in menongkah, they can sail either from land to sea or sea to river.

The Duanu people are doing a 2 to 5 km of menongkah starting from which area heading the coast faster, but usually within 30 km from their home. Both men and women in Bela River village may do the activity of menongkah because there are no restrictions, sometimes the children also join their parents going for menongkah. They begin to sail in the morning towards the afternoon tide. If the activities are done at night, they must prepare several lighting equipment in catching the shells. They use a very simple lamp, but some of them also use neon lights and batteries. The shells will emit will emit their light when the light goes on and the reflected light indicates that its location.

Catching the shells at night has its own advantages because the shells are bigger and easier to be found as the water recedes. However, this activity does not occur in everyday because at certain seasons the shells are small so they need to consider about the season and time before going fishing.

In addition to traditional fishing equipment, some of Duanu people also use traditional transportation such as paddling boats. The boat can only travel for two to four km from the village. However, some prosperous people are using modern technology such as machine boats that could sail further. The results obtained by using this boat can be up to 100 kg.

Usually when they go fishing in a group, one boat contains 6 to 10 people. Not everyone owns a boat so they ride on other person's boat. They have been doing it for a long time with their own revenue sharing rules. First, the group will give the boat owner an amount of money (for fuel and cigarettes). Second, the group must sell their catches to the boat owner, and the boat owner will make an offer with higher price.

During fishing, there are several restrictions, Duanu people believe that there are several prohibition regarding shouting during fishing as it may cause their catch to disappear. Also, while they are on the boat, they are not allowed to kill any animals, if this happens then they will not get any catch and get karma. In order to indicate a person who is going for menongkah is by looking at their clothes and the equipment they are carrying.

Besides menongkah, the Duanu also know how to catch silver mantis shrimp with a net. The tools used are usually nets of about 15- 30 meters long and 1-2 meters wide. This activity is usually done at night but it is not uncommon for the community to do it in the morning and evening. Silver mantis shrimp can only be found in the high-seas.

Menambur is another method of catching silver mantis shrimp by dipping some of the body into the mud to lure out the shrimp. Silver mantis shrimp is another commodity produced by Duanu

Tribe in Bela River. The transportation used is similar to traditional or machine boat. This activity can also be done individually or in groups, but is usually done by two or more people in order to spread the net.

During the fishing season, a fisherman can bring 50 to 100 shrimp at a cost of Rp. 2,000, but it can reach Rp. 15,000 each tail regularly. The catches are usually sold to the next merchant in the market up to Pekanbaru. However, the high rates of shell and shrimp do not make Duanu community live well all the time and are free from debt.

The inability to manage the money and wasteful lifestyle also cause Duanu completely dependent on their menongkah. Many fishermen are out of debt, especially during the settlement period. Most of them are tied to lenders so that their catch cannot be sold to others because of debt. If the fisherman fails to sail or the catch is less, they will pay the debt on certain conditions. Some fishermen borrow money to buy fuel, but have to sell their catch to the lenders.

Actually to improve the economy of the citizens once formed fisherman cooperative, but now the cooperative is not running. The Duanu Tribe people prefer to cooperate with tauke for certain reasons. In addition, the community is also familiar with the term Bank 47 (lenders) and pawn tax season with a fairly high interest that makes them entangled in poverty and lives in debt circles.

Knowledge of Natural Symptoms

The Duanu Tribe people have knowledge of natural phenomena that is similar to Orang Laut who lives in other provinces because they basically have the same ancestors. However, along with the development of time and different natural conditions, the knowledge of natural phenomena is developed.

Duanu's forms of knowledge about the natural phenomenon include seasons, wind, and signs that emerge from certain areas such as the presence of animals or others. This knowledge greatly determines their catch and safety.

The activities of the Duanu Tribe community on the Bela River also rely on natural phenomena to know when the time of shells is plentiful. According to the beliefs of the Duanu tribe, when the northerly winds, the shells will be plentiful and this period occurs around May-July, but when the south wind comes, the amount of shells is inadequate. In this month also came high waves and strong winds so they cannot go to the sea. In this season some people prefer to avoid doing menongkah or going to the sea. The catching amount is not as much as the fishing seasons. The advantage of not doing fishing in this season is that the shells will keep multiplying their amount and continue to reproduce.

Apart from the wind direction, Duanu also has the ability to the existence of certain animals, that is, when fireflies come at night, that's where the lunar location will produce many shells. This reference will be used in determining where to do fishing. In addition to the presence of fireflies, Duanu people also use other clues to capture seafood in the form of shellfish, fish and shrimp grandmother.

Clean hole is usually a sign of silver mantis shrimp house. Whitelipped Eel Catfish lives in the hole where it is surrounded by slight dirt. The clams hole are close to one another. A hole may contain hundreds of shells. Meanwhile, the snake hole contains of boiling water.

The results showed that the Duanu Tribe in Sungai Bela Village has local wisdom from generation to generation in livelihood activities. As explained by Ataupah (2004) and Nababan (1995) that local wisdom is historical but positive in which values are taken by the ancestors and then passed on orally and from generation to generation. Local wisdom is not only inherited but also grown continuously because as a form of human behavior, local wisdom is dynamic along the development of the era and order and social-cultural ties that exist in society.

Menongkah as local wisdom is only owned by Duanu Tribe in Riau Province. This local intelligence is a result of coastal who live dependently on natural resources without over-exploiting or destroying the environment. Coastal areas have a strategic role both as transitional areas between terrestrial and marine ecosystems as well as areas with very rich natural resources and environmental services. Coastal areas is rich in resources, as being revealed from Sungai Bela Village, the potential of coastal resources such as fish and shrimp for each year is 1,726,450 kg apart from the shells and sea products. Dahuri (1999) explains that the potential of coastal resources is generally divided into four groups, one of which is renewable resources such as fish, shrimp, shellfish, etc.

Coastal region as a dynamic ecosystem has a very unique characteristic because it covers the meeting area between land and sea, landward covering both dry and submerged land which is still influenced by sea properties such as tides, sea breezes and saltwater permeation, toward the sea including parts of the sea that are still affected by natural processes occurring on land such as sedimentation and freshwater flow, as well as those caused by human activities. Thus, it is necessary to manage in an integrated and prudent way to avoid damage.

Natural resource management is a human effort in transforming ecosystems to obtain maximum benefits, by seeking sustainability of production and ensuring the sustainability of these resources (Afianti, 2003) Management of coastal natural resources must consider the layout in a unity of dynamic environmental order and still maintain the preservation of abilities and environmental carrying capacity available. Coastal communities are generally familiar with the surrounding environment because it has long coexisted with nature in harmony, so they acquire various ways of utilizing natural resources in a sustainable manner.

Menongkah is one example of the management of coastal areas based on local wisdom by utilizing coastal resources using traditional method that does not damage the environment. The activities undertaken in an effort to defend the life using wooden board to search for blood clams. This activity is also done in certain seasons so as to give the biotas the opportunity to continue to breed and their environment remain survive. This is in line with one of the principles of conservation that refers to local wisdom in natural resource management that is the use of an appropriate, simple and energy efficient technology in accordance with natural environment.

Nevertheless, local wisdom-based utilization and management in Sungai Bela Village has the potential to be eroded by the use of other enterprises. As mentioned by Dahuri (2003) that one characteristic of coastal area is common property resources which can be exploited by all people (open access) so in regional development and resource utilization often cause conflicts of interest as well as environmental degradation and externalization problems due to over exploitation and limited resource management arrangements. This condition is certainly a threat to the life of the Duanu Tribe because the open access can invite foreigners to participate in utilizing and managing coastal areas along with its natural resources such as expansion of large-scale fishery

Table 1. Source of Vulnerability of Duanu Livelihoods

| No | Short-term | Long-term |
|----|---|---|
| 1. | Illegal logging of mangrove | Rising sea levels |
| 2. | Floods carrying wood and waste materials from upstream | Technological development fish catching |
| 3. | The use of illegal fishing techniques (bomb, putas) | Population pressure (Duanu and non-Duanu tribes) |
| 4. | Grabbing resources with entrepreneurs songkoengined | Decline in water quality caused by waste industry and household |
| 5. | Fuel price fluctuations | Expansion of international fishing companies |
| 6. | Fluctuation of the rupiah | Job opportunities at industry sector |
| 7. | Price fluctuations of fishery commodities, especially blood clams | Consumptive lifestyle |
| 8. | Policies, programs, and projects development that is not based on the sustainability of rural livelihoods | Economy Craysis |

Based on the above table, it can be seen that the Duanu Tribe has both internal and external threats that require efforts to help them to survive and have sustainable livelihood. As Clark (2006) points out that the sustainability their income depends on the availability of natural resources in coastal areas. It is closely related to their ability to respond to changes in the bio-physical environment and the ability to manage techno-economic aspects of coastal resource.

This aspect is important because of the nature of coastal resources which are easily contaminated, sensitive, and limited human resource capabilities that are socially and ecologically vulnerable. These two aspects are interrelated, so that if one of them is reduced it can also reduce the other aspect (Anggoro, 2004). Therefore, it is necessary to keep Duanu Tribe having the rights to control and maintain the ecosystem resources.

Life strategy is the choices for people to integrate and reach out certain activity to achieve their life goals (Daeng, 2008). The concept of a living strategy relates to the resources, access, and activities that influence the ecological and social systems of society. Daeng (2008) defines the strategy of living as the ways people earn their income through various activities, and ways to utilize various assets for investment and how they maintain their assets and income.

The livelihood strategy covers the a) capability and ability of individuals to realize and develop their potential by becoming, executing, doing what can be done with the economic, social and personal characteristics, b) asset, claim or access in the form of natural, human, financial, social, and physical capital, and d) activities or income-generating activities.

In other words, livelihood strategies means individual efforts to earn a living to meet consumption and economic needs by using existing opportunities and overcoming uncertainty or threats through several different options). Referring to the condition of the Duanu Tribe community, most of them are underprivileged, so they are very vulnerable to environmental changes because individuals who are less able to see opportunities will only be able to meet different basic needs with individuals who have knowledge, expertise and experience. They will be able to take commercial action based on the ability to capture economic opportunities and consolidate the capital accumulation.

Therefore, to maintain the sustainable income, it is necessary to create plan to improve the Duanu people's maintaining their coastal resources. It can be in the form of empowerment, which is by giving rights, redirecting capabilities or delegating authority to the less fortunate and also empowering and providing opportunities for others to do something.

The empowerment process should focus on several aspects that can maintain and develop the Tribe's distinctive character(Nababan, 2003) Therefore, in light of the principles of empowerment proposed by Sumodiningrat (1999) community empowerment should be readily accepted and carried out by the target group (acceptable, publicly managed and accountable), providing sufficient income and educating the community to manage financial activities (profitable), maintainable and sustainable fund management that can be easily implemented and developed by various community (replicable).

The program is expected to eliminate the consumptive and wasteful lifestyle that later will help Duanu avoid debts and have a dynamic social life. In addition, the material, spiritual, moral, peaceful, domestic and community that is able to enable them to make the most of their physical, spiritual and social needs. It is aimed at every individuals, families, and society by supporting human rights.

Conclusion

Duanu's local wisdom embraces two traditional technologies in fishing such as menongkah, membelat, menumbur and the knowledge of natural phenomena such as seasons, wind direction, animal existence namely shells, silver mantis shrimp or snake. Livelihood, technology systems and equipment are the example of their local wisdom. Duanu's local wisdom is closely related to marine life and coastal waters because they live in coastal areas, which is largely dependent on coastal resources. Duanu as one of Orang Laut in Riau can also be called as coastal community. As part of coastal communities, the Duanu are relying on coastal resources and become fishermen or farming (fish and shrimp). The characteristics of the community are also different that theologically, coastal communities, especially fishermen, have a belief that the sea has magical powers, so there should be particular activities in fishing.

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