Role of local wisdom community Dayak Kanayatn in the fire disaster prevention (forest fires for the opening of farming fields in West Kalimantan)

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Abstract. Human activities in meeting their needs such as fulfillment of clothing, food and shelter require people to sacrifice what is around them, for example in agriculture, so people have to burn the forest. For Dayak tribes, forests are also commonly used for farming. So that the role of government and local communities is very important in maintaining the preservation of forest areas, for example by optimizing the role of local wisdom owned by the Kanayatn Dayak community, Bahuma Batahutn. Bahuma Batahutn is a wise way to manage the environment owned by the Kanayatn Dayak tribe. Forest management for daily life with a seasonal calendar system to be planted in the fields. Forest burning as part of land clearing is done in the right way and time so that it naturally does not cause disaster. During the forest burning process, involving many people (family or community) by keeping the points prone to burning and providing water to prevent forest fires.

keyword: local wisdom, forest fire, disaster mitigation, Kanayatn Dayak community

1. Introduction

Forest fires are one of the environmental problems that often occur which on a large scale is one of the causes of forest degradation and is proven to cause damage and loss both in economic, ecological and social. The cause of the magnitude of the incidence of forest fires in Indonesia stemmed from weak legislation and enforcement of existing regulations and the lack of optimal system or institutional mechanisms that deal with forest fires. Traditionally indigenous peoples have become accustomed to burning techniques that are environmentally friendly that have been adapted to local natural conditions so as not to cause widespread impacts of forest and land fires. Reducing the risk of forest fires can be done by considering the local wisdom of traditional communities. According to Suhartini (2009), in adapting to the environment, people obtain and develop a wisdom that is in the form of knowledge or ideas, customary norms, cultural values, activities, and equipment as a result of abstraction managing the environment, especially in preventing forest and land fires. Often the knowledge of local indigenous people is used as an accurate guide in developing life in the neighborhood. The study of local wisdom in the prevention of forest fires is very necessary to minimize the risk of forest and land fires so that it can be a reference that needs to be developed for a wider area.
The Dayaks are one of the major tribes in Indonesia, this tribe is known for its friendliness and dedication in preserving nature on the island of Borneo. At first the word "Dayak" means people who come from the upper reaches of the river or who live in the hills. The term "Dayak" is a collective designation of English and Malay people for indigenous tribes inhabiting Kalimantan/Borneo. Over time the term was finally used as an identity that united various existing sub-tribes. In West Kalimantan the Dayak tribe itself consists of various sub-tribes and languages, even in this sub-tribe is still subdivided into sub-sub-tribes. Based on the results of ethnolinguistic research conducted by the Dayakologi Institute for 10 years since 1997, it was found that in West Kalimantan there were 151 Dayak sub-tribes and then 100 sub-sub-groups and 168 Dayak languages. The research outlines the Dayak sub-groups based on the language used in several languages such as the families Bidayuhik, Ibanik, Melayik, and others. Dayak Kanayatn or commonly called the Dayak ahe one of several hundred sub Dayak who inhabit the island of Borneo, precisely in the area of the districts, Mempawah, Kubu Raya, and Bengkayang.

However, the problem of forest fires is one of the major problems that often arise in people's lives, for example forest fires that are carried out to open new land or as part of the cultivation cycle process. Burning as part of the cultivation cycle is carried out after the tree felling process by destroying the wood that is already large enough. On a small scale the combustion that occurs does not cause problems or negative impacts, but if the combustion is carried out on a large scale, the impact will cause problems for the community in general, such as the uniform smoke haze. On the other hand, local communities (people who come from Dayak ethnic groups) have a tradition to overcome fire problems that are carried out naturally. In the Kanayatn Dayak community, they are familiar with the agricultural system commonly called "bahuma batahun" one harvest a year. When the farming process begins, the Dayak Kanayatn / Ahe tribe performs several stages of customary events. at the time of farming the Dayak community did not do it individually, but formed a group of farmers called aleatn uma as a form of collectivity and local wisdom in an effort to solve common problems.

2. Local wisdom concept

Local wisdom in this decade a lot of the talk. Discussions about local wisdom are often associated with local communities or indigenous peoples with varying understanding. Local wisdom is certain principles and ways that are embraced, understood, and applied by local people in interacting and interacting with their environment and transformed in the form of customary values and norms. Local wisdom is local (local) ideas that are wise, full of wisdom, good value that is embedded and followed by members of the community (Sartini, 2004: 4). While the formulation view by the Ministry of Social Affairs, local wisdom is interpreted as a view of life and knowledge and various life
strategies that are in the form of activities carried out by local communities in answering various problems of meeting their needs (Ministry of Social Affairs, 2006). According to Kongprasertamorn (2007: 2), local wisdom refers to knowledge that comes from the experience of a community and is an accumulation of local knowledge.

Thus local wisdom can be concluded as traditional views and knowledge which is a reference in behaving and practiced for generations to meet the needs and challenges in the life of a society. Local wisdom functions and is meaningful in society both in the preservation of natural and human resources, the preservation of customs and culture, and beneficial for life.

3. Dayak Community Life System

Term dayak means hickey. They are indigenous Malays in Kalimantan, Indonesia and Sabah-Sarawak, Malaysia. The term dayak is preferred compared to other words, for example: Kayan, Kenyah, Benuaq, Lun Dayeh and Punan. Traditionally, the Dayak community lives in a long house collectively (lamin), where many families in one clan live together under one roof. Each longhouse has a traditional leader who regulates the selection of community resources including Bengkar or forest resources and Simpunkung (forest gardens). The Dayak community has a complex social structure. However, in this modern period, the social strata underwent changes due to political intervention, trade and development activities. The Dayak people believe that the existence of natural resources is very important for human existence. Land and people have a dependency relationship as one of the basic philosophies inherent in the Dayak community. Latitana or forest land is a concept of land use management that deals with various aspects of life, namely: religion, family, social and economy. Dayak community is very care about natural resources and they do conservation sustainably. This has an impact on activities that are not can be separated from nature, including: hunting, gathering honey, kamfer wood, nuts and bird hunting, gathering forest products other than wood that are useful in their lives. At present, the majority of Dayak people practice traditional life, namely: permanent agriculture by logging wood alternately on several fields. They deliberately cutting down fruit trees in the forest for consumed. However, the majority of Dayaks still apply economic activities that have not yet been settled, namely farming activities, catching fish and gathering.

This farming activity is carried out on land with a variety of plants of approximately 51 species, including 12 glutinous rice varieties. In the selection of farms, the old habit is to check the signs in the forest that will be used as fields, such as checking whether there is a low type of grass, for example: penguu, soil conditions that should have a little or no rock and there is no river flow close to a farm. When farming is prioritized, the former fields which have been allowed to become forest again are called jekau, with an interval of approximately 8-9 years. The former fields that have not been used for a year are called bekau. Meanwhile, the land which is an area that will be used as a field must have special requirements, for example: the tubers are not too much, the leaves must have benaung leaves, the wood tree must be the size of a banana leaf. In this farming process, they are still affected by the belief of amen-amen and Adat Bungan. The custom requires some restrictions which resulted in cancellations field, for example: (1) the sound of deer, (2) isit birds and (3) slow lorises. If meet all three opening fields are canceled. If the requirements have been met, then the forest inspection phase has been completed, followed by field preparation activities, including: (1) cutting (midik); (2) cutting (braiding); (3) cutting branches (meto); (4) drying trees (holding); and (5) burning fields (profit).

During the process of burning the fields, previously carried out security around the fields to be burned, namely by cleaning the land around the land from branches, twigs, leaves with a width of approximately 1 meter, with the aim that the fire does not propagate into the forest. The method of combustion is done by studying the direction of the wind that blows in the field. Fire must be ignited based on wind direction. Combustion must be carried out simultaneously by people who have adjacent fields simultaneously so that all fields are burned and the fire does not spread everywhere. Post-combustion, other community activities is: burn the remaining (mekup), rice cultivation (menugan),
senguyun, pulun, mabe, grazing (mabau), harvest and make kelimeng. Meanwhile, harvesting systems vary in the long run by the Dayak community. Some communities plant tubers and non-irrigated rice.

4. The system of farming the Dayak community Kanayatn

Farming for the Dayak tribe in general is a very important aspect of life. With its typical Dayak farming system, understanding the relationship between humans and nature as a whole. Land, rivers and forests are the soul, body and united with Dayak cultural life. Farming systems that are carried out by Dayaks especially Dayak Kanayatn precisely in West Kalimantan adhere to the method of rotating land instead of moving or encroaching on forests. The farming system adopted is more friendly, called an integrated native farming system (integrated indigenous farming system), this system is a traditional agricultural method but takes into account the principles of natural sustainability. It is different from the swidden agriculture system with a forest pioneer farming system which is actually a system that does not pay attention to the preservation of forests and nature. With a growing population and increasingly narrow space for economic activity (forest areas), the practice of farming needs to adapt itself. Farming rotation systems with bero that used to be between 8-15 years old, are now in practice difficult to implement due to the narrowing of remaining forest area due to conversion to other activities such as oil palm plantations and large-scale encroachment activities by rogue barons but licensed from the state. Farming is not just planting rice and pulses, but there is a sacred element of ritual in it.

The Dayak community is authentic and has a tradition, recognizes the farming system once a year which is usually called "bahuma batahutn". In starting the cultivation process, the Dayak tribe Kanayatn / Ahe held several stages of customary events. In conducting cultivation, the Dayaks did not do it themselves, but formed farmer groups called aleatn uma. Each village with a large population can consist of 5 to 10 people. Stages custom events which do include:

4.1. Ceremony Nabo ‘Panyugu Nagari.
In starting a series of farming processes and opening agricultural land, the entire population first requested permission to pray in Panyugu (a place of worship) in the confinement. By doing abstinence during the three (3) days of not eating meat, fern, bamboo shoots (young bamboo), fungi, and taro. In addition, they may not expose swear or dirty words that can cause failure to abstain.

4.2. Ceremony Nabo’Panyugu Tahutn
Ceremony conducted to establish the place / location of the farm to pray in Panyugu to seek blessings and salvation. The Dayak Kanayatn community believes that the success of the ritual can determine the success of that year's harvest.

4.3. Ceremony Ngawah
Ceremony Ngawah is aimed at finding a suitable place for rice farming. Usually done at night by recognizing natural symptoms such as bird and animal sounds as clues in determining agricultural land. If the sound of a bird is on a hill, it means that the fields in the highlands will succeed. However, if the sound comes from the valley then it is a sign of agriculture in bleak conditions and results. If animal carcasses are found, the designated land is good for planting.

4.4. Ceremony Rasi Nangaratn
Ceremony nangaratn constellation or listen constellationis a ceremony conducted in the wild directly by listening to the signs of nature that says good or agriculture. If the message of constellations is good, the work is continued and the agricultural results are good. One example, according to the speech of the parents verbally in the Belitang Hilir area, Sekadau Regency, one of the constellations which was used as a sign by seeing "the constellation of waluku" such as an ax / machete just above the head at night was a sign that it was ready to begin cutting the land.
4.5. The activity of Ngaratas
Ngaratas is the activity of making boundary lines on agricultural land with neighboring land. This is done to avoid misunderstandings and to avoid taking other land boundaries. Afterwards bahuma (slashing) forest or bush until selasai and airy.

4.6. Nabakng
Nabakng is a tree cutting activity. After that, the traditional ceremony is Baremah usually done by making offerings for Jubata, as permission for the Almighty to be allowed to work on the land as agricultural land. If there is a large tree, then the tree is not cut down, but only reduced by its branches. The Dayak Kanayatn community believes that large trees are usually infested with kakok/pet birds Jubata or birds thanks to rice that maintains and weighs rice, so that at harvest time they will get good and abundant rice.

4.7. Ngarangke Raba'
Ngarangke Raba' is a ceremony to dry the slash and cut in a while to be burned. Before burning, done ngaraki is, which is to clean the surrounding area to be burned for the prevention of the widespread propagation of the process in modern conservation terms known as fire break. Field burning is usually carried out by seeing that all trees, felled leaves and twigs are dry and burned at midday in hot weather, this is so that the material that burns immediately becomes dust and does not cause too much and too long smoke.

4.8. Making Solor or Jalujur
It is done by making boundary markings between the fields owned by themselves and the fields of other people nearby, so that the land that is cultivated is not about the neighboring land.

4.9. Batanam Rice
Batanam consists of: (a) ceremony Ngalabuhatn, which is the ceremony to start planting rice; (b) ceremony Ngamalo Lubakng Tugal. This ceremony is carried out in the fields or fields intensively so that the planted rice can grow well, succeed and not be disturbed by pests; (c) ceremony Ngiriratn for rice by taking away the remaining pests from rice due to pests and animal bites so that the plants avoid pests and throw away the bad luck that makes rice plants unsuccessful.

4.10. Ceremony Ngabati
Ceremony is held in the middle of the field at the point of harvesting rice when rice yellow. This ceremony is a request so that the yellowed rice is not disturbed by rat pests and so that all rice is filled, so that when the harvest arrives the results are numerous.

4.11. The Naik Dango
Ceremony is not just gratitude for the harvest, but is accompanied by carrying, praying (nyangahatn), and entering rice in a storage container called baluh/stamps/dango.

Each region has different names in the thanksgiving of the harvest obtained during the rice harvest. Some call it baroa, ride dango, close tahutn, you know, nosuminu podi, employee, and others. Dayak Kanayatn of Landak and Pontianak Regencies celebrate the event baroaah after the harvest is finished, that is every family makes special cakes such as bread called tumpi', cooking pulut /rice baras poe' in bamboo by burning in English sticky rice and eat fresh, fragrant rice that tastes good. This ceremony baroaah is usually not enforced for every family. Nothing makes this simple depending on the small harvest tahutn or yearly. The event finished harvesting can be at the same time or different time for each village. In addition to the events after the harvest in each village, according to the agreement of the arts and culture activists, Indigenous Elders and Dayak Elders also made a great event of Naik Dango to be a culture of ancestors and hereditary as well as attracting visitors /
tourists, exhibiting arts and culture. *Naik Dango* is a big event after the events *baroah* that have been carried out by each Dayak village. This dango ride ceremony is a together and core event that is often held at the Betang House/longhouse. This ceremony is a ceremony of thanksgiving for the rice harvest which is held once a year, namely on April 27, which takes place in turns in each region where there are still similarities in customs and culture. The implementation is carried out in turn every district in Landak Regency.

5. Role of Dayak Kanayatn Community in Fire Prevention

Based on the book *Maneser Panatau Tatu Hiang* edited by Dra. Nila Riwut second mold in 2015 stated that the Dayak tribe was a common term in Kalimantan even throughout Indonesia. OK Rahmat and R. Sunardi said in *Manaser Panatau Tatu Hiang* that Dayak is a word to name non-Islamic stations that inhabit the interior of Kalimantan. The mandate of the ancestors as conveyed The Dayak Tribe Village Chief, written in Maneser Panatau Tatu Hiang's book, said that the message read "*Haga Lewun Keton, Plot Danom, Ela Sampai Tempun Nana Sare plot* " which means maintaining your hometown, not to happen, landowners must farm in the periphery. Nearly 80% of indigenous people Dayak in Kalimantan have their livelihood farming. Farming is not just to live but the fields form civilization Dayak people. Because of open land by the end of harvest there are rules that Hattush adhered to, customary that has shaped the culture of Dayak. Not true activity shifting cultivation together with the activities of forest destruction. Institute for Dayakologi mention that shifting cultivation as an agricultural system native integrated (*integrated indigenous farming system*) Not shifting fields but rotating fields.

Farms for the Dayak people are the world, the source of life, the position and role of the forest is what drives the Dayak community *Kanayatn* to use the forests around them and at the same time foster a commitment to preserve their existence and the survival of the forest it self. To do this, the Kanayatn Dayak community is provided with natural mechanisms and cultural values that support the use of forests in order to sustain life and preserve nature. Like the application of the 7 principles of natural resource management mentioned above. In addition to maintaining, safeguarding and protecting the existence of the forest arises from the treatment of customs, the role of customary institutions in regulating sanctions and fines and mechanisms that develop naturally from nature. Forests for the Dayak indigenous people *Kanayatn* play a very large role, this is evident from their livelihood sources sourced from the forest (farming), all elements of life are also sourced from forests such as materials to make longhouses, all obtained from the forest. The entire building is made of wood, of course there are many longhouses that use zinc as a house roof, steel nails as binders and pegs. Before all of this, the basic ingredients for making long houses from wood and rattan. Likewise transportation equipment, such as canoes, then household items such as mats, baskets and war tools such as shields, blowpipes, all made of wood. So it is not surprising that there is an expression that says that the destruction of forests will destroy the ideological, cultural, social and economic life of the Dayakin digenous people *Kanayatn*.

Local wisdom that still today, such as *exists Bahuma Batahutn*, is very instrumental in preventing forest fires. As previously stated, *Bahuma Batahutn* is a farming activity carried out by the Dayak tribe which is carried out with sacred rituals. Farming activities only harvest once a year. This will certainly have a positive impact on the environment which is used as a land for farming. So the land for farming is given to recover, only to be planted again. In farming activities this was carried out in a group called *Aleatn Uma* (fostering a spirit of mutual cooperation). Steps taken in these activities such as making a firebreak 1-4 meters wide. The cultivation is carried out on ancestral permission and wind direction readings are carried out by smart people or petalla guru. So that the role of activities is *Bahuma Batahutn* expected to be a form of safeguarding the environment, so that the disasters of land, forest and garden fires can be minimized, and keep away from the risk of haze.
6. Conclusion

Local wisdom is one tool that serves to preserve the environment, for example, such as local wisdom that is owned by the Kanayant Dayak tribe community, for example Bahuma Batahuntn, which is concerned with environmental management to be cultivated into agricultural land or plantation land. With the Bahuma Batahuntn system it is possible to manage nature in the long run so that forest fires can be minimized properly.

Natural management carried out by the Dayak community is able to prevent forest fires. According to the perspective of natural resource management, the behavior of Dayak people in managing natural resources uses an ecological perspective that is carried out in accordance with natural harmony, not just economic interests to get the maximum benefit from the availability of natural resources. In addition to the existing local wisdom and function as a deterrent to the rate of environmental damage, also need strong rules or regulations, especially regarding strict regional regulations on environmental destruction activities, especially forests because forests are the lungs of the world that must be conserved so that the earth is spared high global warming. So that the environment can be maintained and maintained properly.

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