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Ecological aspects and conservation practices based on local wisdom of lubuk larangan in Jambi

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ABSTRACT

Lubuk larangan is a form of local wisdom in which there is a tradition that has been owned for generations and is still developed and well maintained by the surrounding community in an effort to manage river water conservation areas. This study aims to identify vegetation and local wisdom-based conservation practices carried out at five stations, namely the Laman Panjang Hamlet area (1), Buat Hamlet (2), Lubuk Beringin Hamlet (3), Senamat Ulu Hamlet (4) and Sei telang Hamlet (5). Vegetation analysis uses the quadrant method with pole and tree level vegetation types and analysis of local wisdom-based conservation practices using the descriptive quantitative method, which provides a factual description and explanation of conservation practices and community perceptions including social, environmental, cultural and economic conditions and knowledge of the existence of animals around the lubuk larangan. The results of the study showed that the highest tree-level important value index is banyan (Ficus benjamina) which is 147.86 for pole-level INP, Duku (Lansium domesticum) which is 185.25. In addition, this study states that local wisdom-based conservation practices are conducting deliberations to prepare for the formation of the committee for opening and closing lubuk larangan. The existence of rules and sanctions changes the mindset of the community trying to protect the environment properly such as maintaining and utilizing the lubuk larangan area as a breeding ground for fish. using environmentally friendly harvesting tools such as nets and nets and prohibiting the use of stun and poison. The community believes that the rules for taking fish in the lubuk larangan area will be subject to customary oaths. There are many animals found around the prohibition hole, such as berang berang for river areas near plantation areas and rice fields.

Introduction

Marine Protected Areas according to Government Regulation No. 60 of 2007 article 2 are defined as protected water areas, managed with a zoning system, to realize sustainable management of fish resources and the environment. Currently, conservation has become a demand and need that must be met as a harmonization of the economic needs of the community and the desire to continue to preserve existing resources for the future. Various problems and forms of very serious threats to the fisheries sector related to fish resources in the management and development of aquatic conservation [1]. In the same direction, local wisdom is one of the cultural heritages traditionally implemented by traditional communities. Activities generally contain teachings to maintain and utilize natural resources (forests, land, and water) in a sustainable manner [2].

One form of local wisdom is lubuk larangan, which is one of the cultural heritages in the community (traditional) and has been carried out by the community for generations. This local wisdom generally contains teachings to protect, maintain and utilize natural resources (forests, land and water) in a sustainable manner [3]. Lubuk larangan is one form of wisdom that develops in local communities in utilizing fisheries resources in river waters. Lubuk larangan is a manifestation of the conservation principle carried out by the community towards river water fisheries resources [4].

The existence of lubuk larangan has an important role for the community because it is a form of fisheries resource conservation efforts. The existence of fisheries sanctuaries is legally guaranteed based on Law Number 45 of 2009 concerning fisheries, Government Regulation Number 60 of 2007 concerning the conservation of fish resources. Meanwhile, the regulation on the establishment of marine protected areas is regulated by the Minister of Marine Affairs and Fisheries Regulation No. Per.02/men/2009: PER.02/MEN/2009. Based on management objectives, fisheries reserves have barometers: 1. A place to live and breed one or more specific fish species that need to be protected and conserved; 2. Having one or more types of ecosystems as a habitat for certain types of fish that are relatively natural; 3. Having a water area that supports the sustainability of natural ecological processes as a fish habitat and can be managed effectively [5].

Lubuk larangan can be said to be the actualization of the ecological behavior of the community. The implementation of ecological behavior can be seen from 4 things, namely: 1). The ability to divide the management area based on ecological, economic and social interests. 2). The ability to make collective decisions so that it has implications for the psychological aspects of the community to own together and obey every joint decision. 3). The ability to build effective law enforcement mechanisms that minimize violations and reduce conflicts peacefully. 4). The ability to socialize well so that not only the community knows the lubuk larangan regulations, but people outside the village also know, appreciate and obey the local agreement [6].This research aims to identify vegetation and local wisdom-based conservation practices in Bathin III Ulu sub-district, Bungo Regency.

Method

Research Location

The research was conducted in Bathin III Ulu Subdistrict, Bungo Regency, Jambi Province in 5 hamlets, covering the areas of Laman Panjang Hamlet, Buat Hamlet, Lubuk Beringin Hamlet, Senamat Ulu Hamlet and Sei Telang Hamlet.

Data Collection Technique

Data collection techniques are carried out by conducting vegetation analysis to determine vegetation species vegetation analysis data in the form of relative density (KR), relative

frequency (FR), relative dominance (DR), important value index (INP) species that have been obtained are tabulated using Microsoft Excel and qualitative descriptive, namely to provide a description and explanation in reality and accurately about the facts and symptoms that exist at the research site by conducting surveys, data collection and direct observation in the field using questionnaire data or direct interviews with respondents. While secondary data includes an inventory of the social, economic, environmental and cultural conditions of the community in the lubuk larangan area. The data used is primary data obtained through field research in the form of field observations, in-depth interviews and focus group discussions.

Results and Discussion

Vegetation Species Diversity on the banks of the lubuk larangan river

Vegetation analysis that has been carried out in five hamlet areas shows different levels of species diversity. the level of species diversity in the five sampling areas can be seen in the value of the index of important value, relative dominance, relative frequency, and summed dominance ratio.

Table 1. Vegetation of Laman Panjang Hamlet

No	Species	Scientific Name	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Laban	*Vitex pubescens* Vahl	1	2.94	2.94	1.30	7.18	2.39
2	Rubber	*Hevea brasiliensis*	10	29.41	29.41	12.61	71.44	23.81
3	Areca nut	*Areca catechu*	1	2.94	2.94	0.85	6.74	2.25
4	Jackfruit	*Artocarpus heterophyllus*	1	2.94	2.94	2.03	7.91	2.64
5	Mangosteen	*Garcinia mangostana*	3	8.82	8.82	3.81	21.46	7.15
6	Durian	*Durio* Sp	4	11.76	11.76	1.03	24.56	8.19
7	Jengkol	*Archidendron pauciflorum*	2	5.88	5.88	2.23	13.99	4.66
8	Mango	*Mangifera indica*	2	5.88	5.88	3.34	15.11	5.04
9	Banyan	*Ficus benjamina*	1	2.94	2.94	4.77	10.65	3.55
10	Palm	*Elaeis guineensis Jacq*	9	26.47	26.47	68.02	120.96	40.32
Total			**34**	**100**	**100**	**100**	**300**	**100**

Table 2. Vegetation of Dusun Buat Tree Level

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Coconut	4	18.18	18.18	9.00	45.37	15.12
2	Rubber	8	36.36	36.36	5.95	78.68	26.23
3	Jengkol	2	9.09	9.09	6.55	24.74	8.25

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
4	Kandis	1	4.55	4.55	10.03	19.12	6.37
5	Jackfruit	1	4.55	4.55	9.39	18.48	6.16
6	Mangosteen	1	4.55	4.55	15.40	24.49	8.16
7	Yam wood	1	4.55	4.55	12.23	21.32	7.11
8	Durian	2	9.09	9.09	12.06	30.24	10.08
9	Bedaro	1	4.55	4.55	11.32	20.41	6.80
10	Balam	1	4.55	4.55	8.07	17.16	5.72
Total		**22**	**100**	**100**	**100**	**300**	**100**

Table 3. Pole Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Sungkai	1	3.85	3.85	1.66	9.36	3.12
2	Bedaro	1	3.85	3.85	1.87	9.56	3.19
3	Pinang	2	7.69	7.69	5.44	20.82	6.94
4	Kapung	1	3.85	3.85	4.24	11.93	3.98
5	Dukuh	4	15.38	15.38	16.19	46.96	15.65
6	Guava	1	3.85	3.85	19.41	27.10	9.03
7	Rubber	9	34.62	34.62	29.69	98.92	32.97
8	Jengkol	3	11.54	11.54	10.79	33.86	11.29
9	Aren	2	7.69	7.69	4.53	19.91	6.64
10	Durian	2	7.69	7.69	6.18	21.57	7.19

Vegetation of Lubuk Beringin Hamlet

Table 4. Tree-Level Alay River Village

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Coconut	3	21.43	21.43	3.73	46.59	15.53
2	Medang Peweh	1	7.14	7.14	0.89	15.18	5.06
3	Bedaro	2	14.29	14.29	23.39	51.96	17.32
4	Laban	1	7.14	7.14	1.47	15.75	5.25
5	Bacang	4	28.57	28.57	65.72	122.86	40.95
6	Mango	2	14.29	14.29	3.39	31.96	10.65
7	Durian	1	7.14	7.14	1.41	15.69	5.23
Total			**100**	**100**	**100.00**	**300.00**	**100.00**

Table 5. Pole Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Dukuh	1	8.33	8.33	14.83	31.50	10.50
2	Areca nut	4	33.33	33.33	22.60	89.23	29.74

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
3	Papaya	1	8.33	8.33	5.92	22.59	7.53
4	Leban	4	33.33	33.33	41.97	108.63	36.21
5	Jackfruit	1	8.33	8.33	7.40	24.06	8.02
6	Sungkai	1	8.33	8.33	7.31	23.98	7.99
	Total	**12**	**100**	**100**	**100**	**300**	**100**

Reservoir area

Table 6. Tree Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Bedaro	1	16.67	16.67	15.13	48.47	16.16
2	Dukuh	1	16.67	16.67	2.01	35.35	11.78
3	Banyan	3	50.00	50.00	47.86	147.86	49.29
4	Mango	1	16.67	16.67	34.99	68.32	22.77
	Total	**6**	**100**	**100**	**100.00**	**300.00**	**100.00**

Table 7. Pole Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Dukuh	4	66.67	66.67	51.92	185.25	61.75
2	Jengkol	2	33.33	33.33	48.08	114.75	38.25
	Total	**6**	**100**	**100**	**100**	**300**	**100**

Lubuk beringin Village

Table 8. Tree-Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Bedaro	2	14.29	14.29	55.42	83.99	28.00
2	Dukuh	3	21.43	21.43	12.89	55.74	18.58
3	Bacang	2	14.29	14.29	16.78	45.35	15.12
4	Coconut	4	28.57	28.57	3.75	60.89	20.30
5	Mango	2	14.29	14.29	3.75	32.33	10.78
6	Durian	1	7.14	7.14	7.41	21.70	7.23
	Total	**14**	**100**	**100**	**100**	**300**	**100**

Pole Level

Table 9. Pole-Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Jengkol	3	25.00	25.00	32.41	82.41	27.47
2	Mangosteen	1	8.33	8.33	7.86	24.52	8.17
3	Areca nut	4	33.33	33.33	16.06	82.73	27.58
4	Durian	1	8.33	8.33	8.71	25.37	8.46
5	Sungkai	1	8.33	8.33	5.68	22.34	7.45

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
6	Chocolate	1	8.33	8.33	8.11	24.77	8.26
7	Coconut	1	8.33	8.33	21.18	37.85	12.62
	Total	**12**	**100**	**100**	**100.00**	**300.00**	**100.00**

Vegetation of Senamat Ulu Hamlet Mudik Village

Table 10. Pole-Level Vegetation

No	Species	Number of species found	Relative Density	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Mangosteen	1	5.56	5.56	7.73	18.84	6.28
2	Coconut	8	44.44	44.44	9.29	98.18	32.73
3	Banyan	2	11.11	11.11	8.29	30.51	10.17
4	Rambutans	1	5.56	5.56	11.95	23.06	7.69
5	Baharu	1	5.56	5.56	34.74	45.85	15.28
6	Dukuh	1	5.56	5.56	7.19	18.30	6.10
7	Palm	2	11.11	11.11	8.08	30.31	10.10
8	Starfruit	2	11.11	11.11	12.72	34.94	11.65
	Total	**18**	**100**	**100**	**100**	**300**	**100**

Table 11. Pole-Level Vegetation

No	Species	Number of species found	Relative Frequency	Relative Dominance	Important value index	Summed Dominance Ratio
1	Mangosteen	1	7.69	12.82	28.21	9.40
2	Bidaro	2	15.38	21.16	51.92	17.30
3	Sungkai	4	30.77	23.02	84.56	28.19
4	Laban	1	7.69	5.47	20.85	6.95
5	Rubber	1	7.69	10.54	25.92	8.64
6	Bacang	1	7.69	11.29	26.67	8.90
7	Coconut	1	7.69	6.26	21.65	7.21
8	Areca nut	2	15.38	9.45	40.22	13.40
	Total	**13**	**100**	**100**	**300**	**100**

Conservation practices based on local wisdom

Lubuk Larangan is a form of local wisdom that is one of the cultural heritages in the community (traditional) and has been implemented by the community for generations. Lubuk larangan is a local wisdom related to the environment. The purpose of the existence of lubuk larangan, whether realized or not, is a form of cultural wisdom that aims to preserve nature and maintain the continuity of living things in it. Ecologically, the impact of the local wisdom of lubuk larangan culture is to prevent damage to the river environment, overcome river damage and restore damage to the water environment and aquatic ecosystems. as a togetherness, where at harvest time it is carried out jointly by the community, both old, young and so on.

The tradition of lubuk larangan in Jambi is still largely practiced, especially in inland villages such as Bungo, Merangin, Sarolangun and other areas. Villages that apply lubuk larangan usually have a collective agreement (sumpah serapahan) to protect lubuk larangan from illegal fishing violations. People who violate the ban will be subject to customary

sanctions and oaths, resulting in illness and death [7]. The function of lubuk larangan is to maintain the ecosystem, culture, economy and togetherness as follows :

a) Reserving forests, water, land and preserving local customs.
b) Prevent people from littering
c) Lubuk Laranganpun can be economically valuable
d) To strengthen the togetherness and mutual cooperation of the local community. A tradition that has been tested.

Opening and closing mechanism of Lubuk Larangan

1. Formation of a committee for the opening and closing ceremony of Lubuk Larangan.
2. Core activities include reading yasin letters and prayers, (reading yasin letters is as a confirmation or fence so that the lubuk larangan that has been bentuh is safe, and is carried out on the side of the river).
3. Words - Customary Words, ("Up is not punctuated In the middle of the middle in girik kumbang Down is not veined. which means: bald head or sulah, and eyes backward distended stomach or bloated. limp legs and can not move").
4. Stocking of Fish Seeds, (stocking of fish seeds is done together by the community).

This is similar to Lestari's research, closing the lubuk larangan, which is an activity carried out before the lubuk larangan is closed, is a hamlet meeting with the hamlet officials and the committee to determine the closing time of the lubuk larangan. The closing event was opened with a ceremonial event explaining the explanation from the Village Head / Datuk Rio, Ninik Mamak and Traditional Leaders about the prohibition hole and explaining the benefits of the establishment of local wisdom of the prohibition hole and reading the rules and sanctions in the prohibition hole which will be closed followed by installing the boundary rope of the prohibition hole area, then reading the prayer together after reading the prayer the prohibition hole is officially closed until the specified time limit [8].

Conclusion

In the lubuk larangan area of Bathin III Ulu sub-district in five hamlets a total of 38 species were found. Duku (Lansium domesticum) pole level with the highest INP with a value of 185.25, while the highest tree level importance value index is banyan (Ficus benjamina) which is 147.86. Conservation practices based on local wisdom, namely conducting deliberations to prepare the formation of the committee for opening and closing lubuk larangan. The existence of rules and sanctions changes the mindset of the community trying to protect the environment properly such as maintaining and utilizing the lubuk larangan area as a breeding ground for fish. using environmentally friendly harvesting tools such as nets and nets and prohibiting the use of stun and poison. The community believes that the rules for taking fish in the lubuk larangan area will be subject to customary oaths. There are many animals found around the prohibition hole, such as berang berang for river areas near plantation areas and rice fields.

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