



UTILIZATION OF FOREST BY WOLASI SUB-DISRICT COMMUNITY, SOUTH SULAWESI

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Abstract

This study aims to determine the utilization of forests conducted by communities in forest area of Wolasi sub-district. This research was conducted in Wolasi forest sub-district of Southeast Sulawesi Province. The research methods used were survey and interview with 86 and 87 respondents with purposive sampling by plotting two different villages characteristics to represent forest utilization form in different area (villages in lowland landforms) and Aoma village (village has the shape of hilly terrain). The result of this study examining the forests utilization of inhabitants in Wolasi sub-district, which is represented by two topographic characteristics. Reseacher selected two similar conditions that engage the forest as a source of daily needs and workplace that is considered as a resource, producing timber and non-timber products. Ranowila inhabitants occupations are dominated with farmers, while in Leleka village, despite being farmers, some inhabitants are craftsmen of non-timber forest products such as bamboo and rattan as well as furniture entrepreneur. This fact is influenced by residential areas that close to the forest and can be observed through the neighbourhood area which is close to the temporary forest area in Leleka Village. Temporary forest is located in an area which always extends land, since the topography circumstance encourages numerous people prefer to live closely towards their managed land. The forest is beneficial both in the term of land utilization or forest products, due to the distance there is limited knowledge, as well as limited work, it enhances low expenditure obtained.

Keywords: Utilization, Forest, Community in District Wolasi

1. Introduction

Forest plays notable role in order to cope upon poverty, increasing earnings, improving food availability, reducing vulnerability and developing the sustainability of natural resources. Forest resources in Indonesia are adequately large and widespread throughout the region. Nurbaya & Efransjah (2018: 29) states that Indonesia is a mayor nation with 120.6 million hectares or 63 percent of the nation's entire land is dominated by forests area.

Forest obtains a variety of natural resources in term of wood and non-timber products, but it should be noticed that forest is quite vulnerable when the management runs innappropriately, as well as gradual abuse. The lowland rain forest type possess the greatest reserve and diversity of wood in

Indonesia is currently hitting the dangerous risk, since rain forest almost completely disappear in Sulawesi region. Gibson et al. (2011) argues tropical forests have critical ecological and utilitarian values, so far tropical forest has been preserving numerous world's biodiversity and provides significant ecosystem services. Natural resources and ecosystems preservation in tropic region is an inherently multivariate issue, particularly in poorly known and rapidly changing ecoregions such Sulawesi (Cannon et al., 2007:45).

Sulawesi is one of the regions with extensive forest in main land of Indonesia, one of which is located in the Wolasi subdistrict, where still obtains sample of natural forests. The presense of inhabitants around the forest is an integral part of the forest itself. The suburb of Wolasi has extensive forest with a folded forest resource. The community has a notable profile upon forest resources. Silaen (2008: 585) states forest resources possess an important role in providing industrial raw materials, income sources and job opportunities. Those are some advantages of forests both as a component of life (*biotic*) or as a source of society (Pongtuluran, 2015: 70).

Commercial utilization of forests puts forestry as one of the economic recovery aspects within community. Referring to Dudley (2012:6) most commercial attempts to manage forests have focused primarily on timber and fibre, and indeed the increased efficiency of forests as producers of valuable raw materials has been a major driver behind the changes in the quality of the forests that remain. Forests obtains an important role, particularly towards neighbourhood inhabitants who do living near forests either for food or income sources. Forests and tree-based systems are part of broader economic, political, cultural and ecological landscapes that typically part of different food production systems and other land engagement (Parotta, 2015:155). Forest management involves managing forest ecosystems for the provision of ecosystem services (Wagner, 2014: 32). Residents of Wolasi Village in particular are considering forest as an economic source, attach forest products in daily life, timber sales, domestic needs and alternative land utilization for agriculture and horticulture in different scale. Forests and people (*communities*) are two things that can not be separated, the dependence of both sides can be observed as follows, (Figure 1)

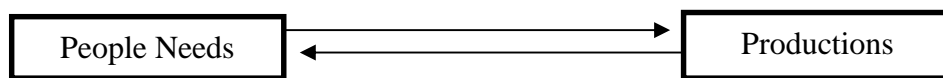


Figure 1. Forest and human relations

Aryadi (2012) states forest and human relation is an inseparable relationship, where forest and its benefits can not be separated upon human influence in managing the utilization of forest resources for life prevalence and environment. (Official Regulation) PP / No.6 of 2007 declares forest land utilization as an activity to exploit forest area, utilize environmental services, utilize timber and non timber forest products, collect timber and non timber forest products optimally and

moderately deliver community welfare while maintaining forests sustainability. Rural communities are living around to the forest mostly in term of forest resources as common property, even as an open access property that anyone is able to organize (Banowati & Sriyanto, 2013: 189). Based on the description mentioned above, forests utilization is significantly substantial for people, especially community who stays around forests.

2. The Methods

The basic method used in this study is survey method. Survey method was engaged to obtain data sources and information from respondents as research samples. Sampling was performed to attain representatives of two villages characteristics by purposive sampling. In order to determine the sample number that suitable towards the number of respondents, researcher engaged Slovin technique. Thereby, it attained 86 respondents for Ranowila Village and 87 respondents for Leleka Village with different village topographic characteristics. Questionnaire technique was performed as an instrument to collect data, questionnaire results were calculated using crosstab. Research subjects were targeted based on two different topographic characteristics to represent forest engagement in different areas, namely Leleka Village (village with rice fields form) and Ranowila villages (village with hilly terrain form). Primary data collection was obtained through surveys or direct observations directly in the field, namely observation, interviews and questionnaire. Secondary data was collected from various institutions that support the research objectives. Primary data collection was conducted in a participatory manner through questionnaire results while secondary data was attained referring to the previous research reports, such village monograph data, and other supporting literature. Figure 2 represents the framework of this study, as follows:

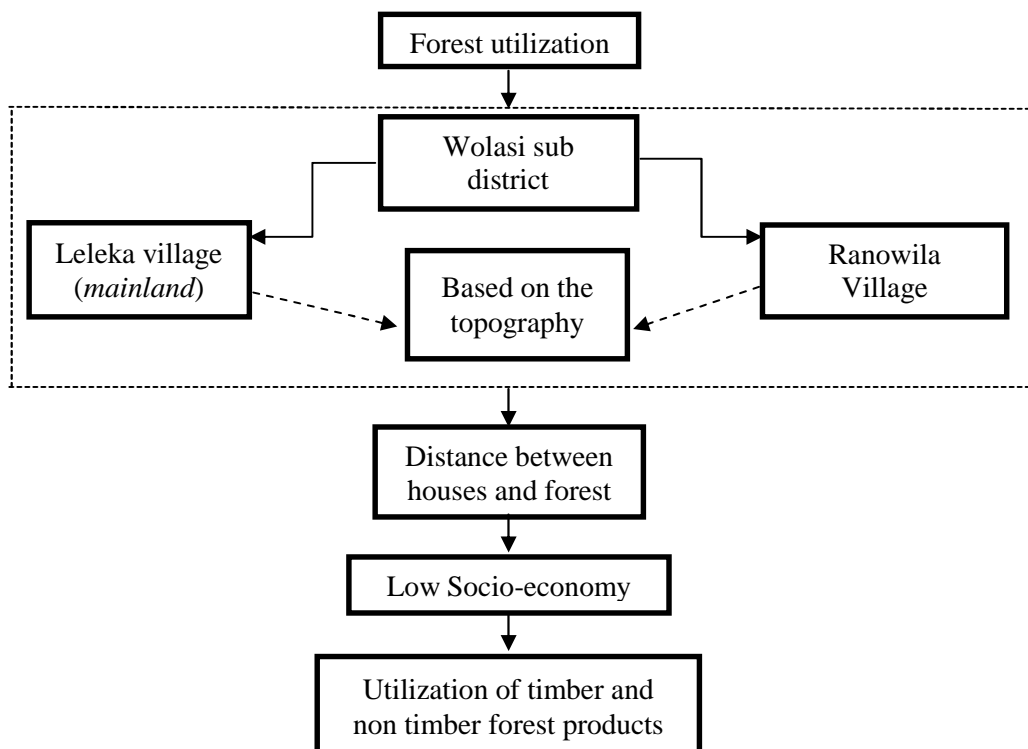


Figure 2. Research framework

Forest performance is observed based on forests utilization in the form of wood and non-timber, also could be identified from people characteristics who occupy near to the forest area, but with different topography and the distance of respondents' residence to the forest. Distance and socio-economic conditions of people who reside around the forest could be enhanced in order to empower themselves in developing forest products as the primary purpose. Adhikari (2003: 248) states forest products are defined as products found and used by local communities within forest area. Forest products namely wood, as well as non-wood products such as leaves and bark for medicinal purposes, medical plants and other plant products.

3. Results and Discussion

Wolasi sub-district has quite large forest with different natural features. People do preserving local traditions, hence they happen to obtain a significant dependence onto forest resources to support their needs. Wolasi sub-district has a large protected forest of 3,369,499 Ha. The existence of the protected forest it self has a very significant part in balancing ecosystem and as a form of protection upon buffer system to regulate the water system, flood, erosion and maintain soil fertility. In addition, other types of protected forest in Wolasi sub-district such as Forest Production fixed 420.518 Ha, 361.031 Ha of fixed production forest, Forest Production remains 41.102 Ha (Figure 3).

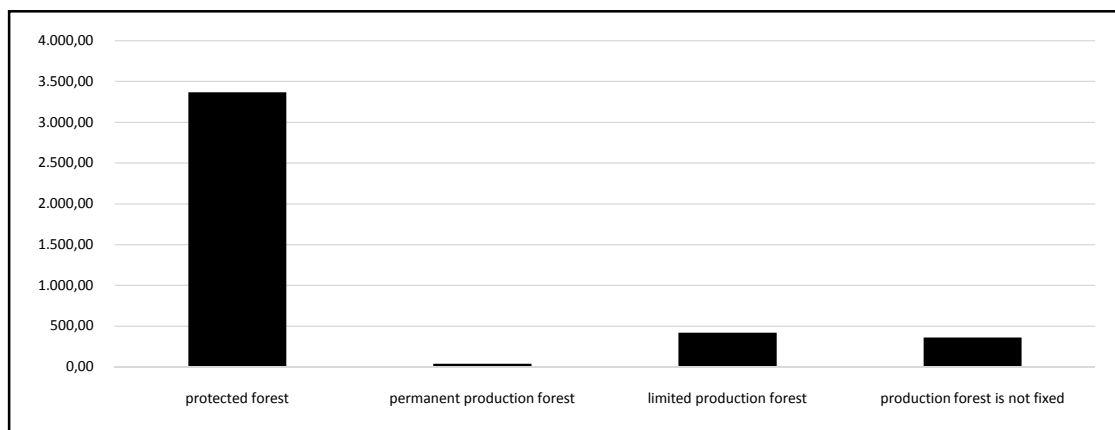


Figure 3. Type and extent of forest in Wolasi sub-district

The Wolasi forest area is located in Wolasi Sub district, Konawe Selatan District, Southeast Sulawesi Province. In 2016 it has 450605.53 Ha. Wolasi forest area is located in Gularaya production forest management unit that stands in the main land of Southeast Sulawesi. Wolasi

Subdistrict is a hilly area and part of the lowland based on geographical and topographic location. Wolasi is a mountainous region.

3.1 Wolasi Traditional Rituals

Wolasi sub-district is dominated by the existence of indigenous tribe from Southeast Sulawesi, namely the Tolaki tribe. Within this Wolasi tribe, they are still strongly dependent on rituals to respect the existence for the forest. In order to deliver respect towards the forest, people of Wolasi frequently do hold traditional ceremonies, particularly if there is an activity relating to forest resources utilization (timber and non-timber products), such as springs and other utilization of forest land both small or large scale. The traditional ceremony is known as *mooli*, which means to buy, the ceremony is held in a day performed by traditional elders and representatives of the community with no more than five people.

3.2. Inhabitants Circumstance Throughout Forest Area

Wolasi District is an area dominated by forests existence, particularly for the two villages which are the samples of this study, namely Leleka and Ranowila villages. These two villages are part of Wolasi sub-district with different topographic conditions. However, it is undeniable that between two villages have similarities and differences in the sense utilizing forests. Forests exploitation for rural communities or local inhabitants around the forest is likely influenced by certain needs. Most people attain relatively low education, low income, conventional manner and passive community attitudes. Hence, most people are strongly relying upon forest products and even consider forests as property treated.

3.3 The Number of timber and non-timber products of forest Utilization

Wood beneficial cannot be denied as a need that cannot be separated towards community. Wood existence accomplish the needs of clothing and money. Wood selling price is more expensive compared to the non-timber forests potential in the sense of people in Wolasi. Non-timber resources in the form of forest products that could be made for food and handicrafts are adequately to meet the community requirements. In addition, wood availability also brings numerous job opportunities, even for those with insufficient skills.

Non-timber forest product is categorized as non-timber species which is cultivated and often utilized by Leleka and Ranowila villagers with various allocation objectives. Those non-timber species utilized are available in forest areas. The number of timber and non-timber utilization within community can be seen in table 1 below:

Table 1. The number of timber and non-timber utilization within community of Ranowila and Leleka villages

Utilization of forest products	Ranowila Village		Leleka Village	
	Total	Percentage	Total	Percentage
Timber	39	45,3	67	77,01
Non Timber	49	57,0	79	90,8

Source: Primary Data Analysis (2018)

Based on the table description, the number of wood in Leleka Village is larger than Ranowila Village, which is 77.01 percent in Ranowila Village with 45.3 percent is being used as timber forest products. In Leleka Village 90,8% percent above respondents in Ranowila village only amounted to 57.0 percent. This concludes that timber and non-timber forest products are performed more by Leleka villagers.

3.4 Timber utilization in Ranowila and Leleka Villages

The statistic of wood utilization among respondents in Ranowila Village who engaged wood as much as 45.3 percent while in Leleka Village as much as 77.01 percent. Hence, more intens wood utilization is found in Leleka Village inhabitants. Wood in Leleka village is indicated by community endeavor emphasizes more in the forest and also community belief that the selling value of timber is more expensive compared to non-timber forest products. In addition, village location is quite near to the forest. People in Ranowila Village engaging the ample of land in the forest as primary source of earnings. The utilization wood is mostly performed based on distance between residence and forest, settlements in Leleka Village are more indented towards the forest and closer compared to Ranowila Village, which prefers settlement establishment around main road and their land. The following types of wood utilization in Ranowila and Leleka villages can be seen in table 2 below.

Table 2. Types of wood processed by respondents in Ranowila and Leleka Villages

Types of wood used	Ranowilla village		Leleka Village	
	Total	Percentage	Total	Percentage
Jabonmerah (<i>AnthocephalusMacrophyllus</i>)	0	0	12	13,6
Eha Wood (<i>CastonopsisSp</i>)	4	7,8	0	0
Flower Wood	5	9,8	0	0
Jabonputih (<i>AnthocephalusCadamba</i>)	1	2,0	9	10,2
Biti Wood (<i>Vitexcofasus</i>)	2	3,9	10	11,4
Jati Wood	16	31,4	30	34,1
Cendana Wood (<i>Santalum album</i>)	2	3,9	0	0
Dolken Wood	2	3,9	0	0
Mahoni Wood (<i>swieteniamahagoni</i>)	0	0	2	2,3
Meranti Wood (<i>shorea</i>)	8	15,7	22	25,0
Jangguan Wood(<i>Sonchusarvensis L</i>)	1	2,0	0	0
Kuma Wood (<i>saffron</i>)	2	3,9	0	0
Rawa Wood	8	15,7	0	0
Eucalyptus (<i>Melaleucaleucadendra</i>)	0	0	2	3,4
Total	51	100,0	88	100,0

Source: Primary Data Analysis (2018)

Wood utilization from both villages can be noticed in table 1. The locals of Leleka and Ranowila mostly perform teak species usage. However, respondents of Leleka village manage more types of meranti wood which possesses higher economic value within Leleka and the respondents were more varied in utilizing the types of wood available. Hence, wood exploitation activities could illustrate livelihood patterns and people preference in electing the types of forest related works in any form.

3.5 Non timber utilization in Ranowila and Leleka villages

The number of non-timber available in Ranowila Village were mostly using non-timber natural resources, apparently 57,0 percent. While in Leleka Villagethere werelessnon-timber resources usage than in Ranowila Village, apparently 90.8 percent. Non-timber utilization is not only relating to income earnings, but also engagingas food and fuel. Nonetheless, it cannot be denied that non-timber forest product is a source of community livelihood around the forest, due to limited capacity to obtain employment and lack of education or knowledge. There were more non-timber utilization activities in Leleka Village than in Ranowila Village. This fact is implied through the number of needs and jobs for each person. Wood and non-timber expansion resources is more dominant in Leleka Village. It can be concluded based on the extensive land of forest engaged in Leleka Village and more diverse forest functions are found, either land arrangement or utilization of timber and non-timber forest resources. The following table shows types of non-wood performance upon Ranowila and Leleka inhabitants (table 3 below).

Table 3. Types of Non-wood Managed byRanowila and Leleka Villages Inhabitants

Non wood species	Ranowilla village		Leleka Village	
	Total	Percentage	Total	Percentage
Bamboo	-	-	4	2,6
Firewood	45	68,2	69	45,7
Medicinal plants	8	12,1	-	-
Honey	5	7,6	11	7,3
Rattan	2	3,0	13	8,6
Sago	3	4,5	33	21,9
Vegetables	3	4,5	12	7,9
Decorative plants	-	-	9	6,0
Total	66		151	

Source: Primary Data Analysis (2018)

Non-timber managed in Ranowila and Leleka Villages are shown in the table above. It could be statedthat firewood is dominating non-timber product within Ranowila Village, apparently 68.2%, while in Leleka Village firewood is managed only as much as 45%. The use of firewood is more prevalent in Ranowila Village than in Leleka Village. Ranowila Village manage drugs

utilization with approximately 12.1%, as opposed to Leleka Village which is dominated by sago commodity with 12.5%. Non-timber resources management is more varied in Leleka Village such bamboo, honey, sago, vegetables and ornamental plants. Nonetheless, there were no respondents in Leleka Village who performed medicinal plants relying upon forest. There were respondents in Ranowila Village who engaged drugs, sago and were dominated by the use of firewood. This matter could be seen in Leleka Village that utilizing forest resources as dish substance. In order to increase domestic earnings, those commodities from Leleka are offered with other commodities produced in Ranowila Village which engages non-forest resources as meal ingredients.

3.6 Influencing Factors of Forest Utilization

3.6.1 Distance to the Forest

The proximity of villages inhabitants upon forest makes it convenience for them to obtain forest resources in the form of timber and non-timber as income means and food sources. Forest also produces boards and clean water for their daily needs. The following table is the distance of inhabitants settlements over the forest.

Table 4. Residence distance towards forest

Distance of residence with forest	Ranowila Village		Leleka Village	
	Total	Percentage	Total	Percentage
<500 m	15	17,4	70	80,5
500-1000 m	54	62,8	17	19,5
1000-2000 m	12	14,0	0	0
>2000 m	5	5,8	0	0

Source: Primary Data Analysis (2018)

The distance of locals residence with the forest in Ranowila Village is approxiamtely 500-1000 m, or 62.8% .While Leleka Village possesses a distance of <500 m as much as 80.5%. The location of Leleka Village is closer than Ranowila Village, hence it affects the way people organize the forest resources at time being, since closer distance reduces time for walk and saving the cost.

People who stay within topography area tend to settle with following the road pattern and plantations or agriculture path, while people who live on topographic slopes tend to live in a safe terrain pattern from the forest. The road condition along the protected forest in the form of a path is unlikely possible to travel by two or four-wheeled vehicles. Thus, people do establish a field inside the protected forest access area by walking along the forest alley.

3.6.2 People's Socio-economic in Ranowila and Leleka Villages

Socio-economic condition of inhabitants near forest encompasses a variety of lives, in term of economic dependence, hunting area for nutrient needs, cultivation and plantations, property materials, and some other functions. The relationship between community and forest is inseperable,

due to compulsory needs and socio-economic conditions encourage them to strongly depend on to forest and neglecting other kind of jobs. Considering the socio-economic conditions of Ranowila and Leleka Villages inhabitants, below is presented education, employment and income level in table 5 as follows.

Table 5. Socio-economic level of the community in Ranowila and Leleka Villages

Types socio-economy	Ranowilla village		Leleka Village	
	Total	Percentage	Total	Percentage
1. Education				
No degree	6	6,97	17	19,54
Graduated from primaryschool	47	54,65	53	60,91
Did not complete primary school	33	38,37	17	19,54
2. Work				
Farmer	59	68,60	20	22,98
Non wood crafts	7	8,13	30	34,48
Vegetable seller	15	17,44	7	8,04
Timber manager	1	1,16	20	22,98
Woodman	4	4,65	10	11,49
3. Income				
<Rp 500.000	40	46,51	24	27,58
Rp 500.000 - Rp 1.000.000	16	18,60	30	34,48
>Rp. 1.000.000	10	11,62	33	37,93

Source: Primary Data Analysis (2018)

In the table above, it can be seen that the level of education is significantly low, thus triggering the village community to encounter limited jobs opportunities, despite their dependence on the forest. Information and knowledge flow sluggishly, due to the affordability of the region, limited skills and education level enhance jobs availability dwindling. Job vacancies are not varied, despite depending on forest products existence such timber and non-timber products and extensive land of forest. Ranowila Village community is dominated by farmers, which is influenced by land topography that has been converted into agricultural land. Besides, the distance to the forest that is not closed compared to the people living in Leleka village, within hilly areas which forest is very dense and natural. Somehow, some people who depend on the forest also relying to it in obtaining food and earning to meet the needs. It could be observed upon jobs majority perform between two villages. For instance, while farmers are waiting for the harvest to get wages, for people who close to the forest are offering certain forest products such as vegetables, fruits, firewood and even wood that possess particular selling value for the community.

The distance between community residence and forest is one of the factors that triggers forest exploitation manners of inhabitants in term of their daily welfare. Distance is the trigger for forest utilization upon rural communities, as well as socio-economic should be considered as another factor that stimulates forest functions. Socio-economics is somehow related to accomplishment of people's needs, such as clothes, food, houses, education, health and others (Silaen, 2008: 218). The socio-economic encompasses education level which establishes limited

knowledge, especially for those who stay remote toward information sources, work that only depends on what is available. If there is land available, then managing is the only choice to do work. Thus, it influences uncertain opinions according to the daily wages earned.

Utilization of forests managed by community is plotted through socio-economic requirements, especially for communities that settle within the forest, which in this case are dominated by rural communities in general. The community around and inside the forest is generally under developed. Thereby, socio-economic condition of this community is basically poor. The community presence near forest who have direct or indirect access to forest areas to manage forest resources is a reality that cannot be ignored (Wirakusumah, 2003: 23). A high socio-economic level in a society illustrates a high level of welfare (Suradi, 2012: 145).

4. Conclusion

Forests utilization of people in Wolasi sub-district is represented by two topographic characteristics, posing similar conditions that plot forest as a source of daily needs and jobs that is viewed as a resource, producing timber and non-timber forests. Ranowila inhabitants occupations are dominated by farmers, while in Leleka village, among jobs as farmers there are also craftsmen of non-timber forest products such as bamboo and rattan. There were managers of wood, this is affected by residential areas that close to the forest and can be seen through the area which is significantly very close to the temporary forest area in Leleka Village. Leleka Village is located in which always demands more area, due to topography that allows number of people to prefer living close to their processed land. The triggers of forest utilization both in the form of land and forest products, due to distance, limited knowledge, as well as limited work, hence provides low expenditure.

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