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# The geographic literacy analysis of community social economy in conservation zone Meru Betiri National Park using dusung method

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**Abstract:** This study was aimed to know implementation of dusung method in geographic literacy of the ecosystems return in Meru Betiri National Park. The research method was use survey. The findings indicated that the community empowerment in the ecosystem return area in Meru Betiri National Park using dusung method impacted in alleviating the poverty of the community problem. The land conservation pattern by combined agricultural crops and forestry plants in a period of time.

## 1. Introduction

Rational and sustainable use of natural resources for the welfare of the community. Utilization of natural resources by prioritizing understanding of environmental sustainability and not only enhancing welfare but also environmental benefits in daily life. Utilization of natural resources for land use is optimally a major problem of geography literacy in the territory of Indonesia. Geographical literacy can have a broad influence on individuals and society in developing knowledge, skills, and habits of thought towards the phenomenon of environmental damage [4].

Processing of natural resources for national parks is in accordance with the Decree of the Minister of Forestry No.277 / Kpts-VI / 1997 dated May 23, 1997 concerning Meru Betiri Wildlife Reserve into Meru Betiri National Park. Based on the letter put forward three main missions including:

(1) Protection of living systems; (2) Preservation of plant and animal species diversity and their ecosystems; and (3) Sustainable use of biological resources and ecosystems. These three missions are indicators of geographic literacy in land conservation. Important values found in Meru Betiri National Park are used to protect hydrological functions, tourism geography, and land conservation that benefit the buffer zone community. The function of environmental carrying capacity is needed to protect Meru Betiri National Park. The existence of a national park is very beneficial for the community in the surrounding villages and sub-districts. Many people take forest products in fulfilling their daily needs by selling forest products, even some people make them as basic jobs. Geographical information is needed in communicating the findings of potential places and spaces used in land ownership [14].

Understanding of geographic conditions is needed in supporting the conservation of land both socially and economically. Interrelated relations between humans and forests in interactions occur due to the dependence of the community around the potential of the forest. These symptoms need action in safeguarding the land conservation area. Strategy efforts that touch community empowerment in land conservation are needed in geography literacy [16]. Strengthening people's lives needs to be given more value [1]. Overall land area data from Meru Betiri National Park is 58,000 Ha. Based on the data on the total area, around 4,023 hectares have been damaged without vegetation and become critical land to increase soil erosion.

Community relations with land and community resources are needed in meeting intrinsic needs in survival. Activities to strengthen community capacity are needed socially and economically for forest communities through institutional strengthening and activity assistance [6]. Assistance activities for community activities are expected to be able to improve the mastery of technology, productivity, capacity and ability to strive towards independence in forestry-based sustainable development.



Land damage is influenced by community activities in clearing new land. Unwittingly, the activities of clearing damaged land for agricultural activities have an impact on the conditions of soil aquifers, soil fertility, environmental carrying capacity, hydrology and land conservation. Geographical literacy used in land conservation in the Meru Betiri National Park area is the dusung method. This method is needed in the literacy analysis of the socio-economic level of the people living around the national park.

Community understanding of land resource management needs to involve the participation of individuals and organizations to emphasize the function of water catchment areas with dusung systems in meeting economic needs [12]. The dusung method provides a potential source of income for the economies of families and communities living around forest land conservation areas [13]. The success of managing natural resources has a relationship between society and nature [7]. Geographical literacy of the socio-economic conditions of the community in the conservation zone of Meru Betiri National Park Jember and Banyuwangi is needed with the concept of dusung so that residents in the region can prosper and have behavior in maintaining environmental conditions.

**2. Methods**

The method used in this study is a survey. This method is used to determine the geographic literacy analysis of the socio-economic conditions of the community in the conservation zone of Meru Betiri Jember and Banyuwangi National Parks with the Dusung concept. Survey research aims to collect all data both units or individuals simultaneously from predetermined variables [17]. The subjects in this study were assisted farmer groups.

The data collection technique in the geographic literacy analysis of the socio-economic conditions of the community in the conservation zone of Meru Betiri Jember National Park with the method of dusung was carried by observation, interviews, and documentation for assisted farmer groups. The data analysis technique of the research results was carried out in descriptive analysis.

**3. Results and Discussion**

The understanding of the zone conservation area Meru Betiri National Park has not been well understood by the surrounding communities. This understanding includes zoning conservation areas. Damage to the national park ecosystem is caused by the social and economic conditions of the community. The following are data on the social and economic conditions of the community in the Meru Betiri National Park area:

**Table 1.** Socio-Economic Conditions of Meru Betiri National Park Patronage Farmers

Literacy Analysis	Percentage	Information
Social Conditions		
a. Education level	44,71%	Elementary
b. Living standart	67%	Poor categories
Economic Conditions		
a. Income	30,6%	Non-agriculture (Rp 432,002.00 per month)
b. Empowerment activities for nurseries	69,12%	Agroforestry activities

Source: primary data processed, 2018

Understanding of geographic literacy is very necessary for people who live in the conservation zone. This is needed in understanding the location and place on the surface of the earth that is suitable as a destination in settling elections and economic activities. This condition is inseparable from the facts in the field which shows that the majority of the people use nature more in fulfilling their needs. Geographical literacy trains students and society in learning the characteristics of a location or place so that they can have a correct understanding of the world [18]. The function of geographic knowledge for the community in the conservation area of Meru

Betiri National Park as an educational medium that understands geographic phenomena according to the function of the use of the region.

The community that conducts exploration activities utilizes the forest in the conservation area of Meru Betiri National Park. Illegal and legal exploration does not have an impact on the social conditions of the people who are members of the assisted farmer groups. The poverty level with the poor category is 67%, this shows that the community is still not prosperous especially those who rely on life from their environment. The causes of society in poor social conditions are caused by factors such as low education of the people, cultural community, low motivation, a small population, and difficult accessibility. All of these factors contribute multidimensionally to people living in conservation areas. The handling of social problems, especially population poverty around the forest, requires synchronization of community poverty reduction programs with the needs of village area specifications through participatory planning and mentoring processes in poverty reduction efforts [9]. This problem of poverty is socially influenced by the level of education of the community. Based on data in the field, the people living around the conservation area of Meru Betiri National Park were elementary school graduates, amounting to 44.71%. This factor is the main indicator in maintaining the conservation of the conservation zone.

The problem of undeniable welfare also affects the economic aspects of society. The low opinion of each head of household influences the economic level of the people who are members of the built economy. Economic problems are more influenced by geographical factors and accessibility of facilities and infrastructure. The economic focus of the community is more on the utilization of the potential of the environment around the residence in meeting their needs. The average income per month is 432,0002.00 indicating that the level of economic welfare is far from the standard of living. Economic problems have an impact on changing landscape and ecosystem conservation zones of Meru Betiri National Park. Optimization of forest land use must take into account environmental and socio-economic aspects that are prepared based on people's desires, system behavior (through erosion, growth and economic subsystems) by considering plant species to obtain optimal results [8]. Economic factors become an inseparable system for every citizen who is part of a trained farmer group.

Landscape changes changed the landscape and canopy of the conservation area of Meru Betiri National Park. Illegal logging activities such as illegal logging and burning of land change the carrying capacity of the environment in a room to meet the socio-economic needs of the community. Ecological changes and soil quality are the impacts that affect the condition of the ecosystem of each conservation zone. These changes include the category of physical and environmental geography studies. The impact affects water catchment areas in the conservation zone of Meru Betiri National Park. Land clearing contributes to groove erosion that affects the physical condition of the land surface. Changes in the physical properties of soil surface can affect the amount of soil porosity in a macro which has an impact on the process of decreasing the infiltration rate on the amount of surface runoff [15]. The process of returning land ecosystems and conservation by applying the dusung method. The form of application of the dusung method in table 2 follows:

**Table 2.** Implementation of the Dusung Method for Land Degradation Rehabilitation of Meru Betiri National Park

<b>Implementation of Dusung Method</b>	<b>Description</b>
Nutrient supply	Collaboration with
Cultivation of plant seeds	farmer groups
Income of organic fertilizer for soil	assisted by
productivity Development intercropping crops	National Park
Development of seasonal plant microclimates and	Meru Betiri Hall
plantation crops to increase soil productivity	
Development of family medicinal plants	
Developing agroforestry processes returns	
Ecosystem	

Source: Primary Data Processed, 2018

Ecosystem and landscape changes in the conservation zone in Meru Betiri National Park can apply the dusung method as in my Maluku province. The dusung method is a landscape and natural resource management system that combines agricultural, forestry and livestock commodities [12]. Collaboration on the utilization of these four potentials has been carried out between national park halls and community members. One of the goals is to repair and control the damage of degraded ecosystems.

The dusung method is used to reduce illegal logging of land, destruction of conservation areas, reforestation, and utilization of intercropping plants. This goal is part of the ecosystem restoration activities that are mostly carried out by the community in the assisted villages in the conservation zone of Meru Betiri National Park. The impact of the implementation of the dusung method that can already be felt is the change in the microclimate decreases, erosion decreases, and the condition of the socio-economic welfare of the community begins to improve. This shows that the dusung method is beneficial in increasing people's income by maintaining a relatively high carrying capacity of the environment with the aim of increasing the superiority of planted species [11]. [4] The advantages of the dusung system are: 1) very low erosion; 2) change in micro climate is not real; 3) formation of multilevel vegetation; 4) increase in economic value; 5) improve environmental quality; 6) providing family food needs; 7) preservation of local wisdom.

The results of applying the dusung method provide knowledge to the community through empowerment and coaching activities. This activity is a form of assistance in an effort to restore the ecosystem. Changes in socio-economic conditions are carried out through collaborative activities between the Meru Betiri National Park and the communities that live nearby. The following are forms of empowerment carried out in the application of the dusung method:

**Table 3.** Results of Community Empowerment of Farmers with Methods Dusung

Village that Obtain Empowerment from TNMB	EMPOWERMENT RESULTS					
	Strengthening Community Institutional Institutions	Increasing the Role of Citizens	Establishment and Development of Community Business	Involve ment in Rehabil itation	Mentoring Programs	Effective Value empower ment of
Wonoasri	3.45	4.09	3.13	4.80	3.49	3.79
Curahnongko	3.18	3.21	3.59	3.83	3.48	3.48
Sanenrejo	2.32	3.06	2.11	2,07	3.34	2.50
Andongrejo	3.10	3.06	1.90	2.93	2.55	2.73
<b>Average yield</b>	<b>3.02</b>	<b>3.37</b>	<b>2.67</b>	<b>3.41</b>	<b>3.20</b>	<b>3.13</b>
Kebunrejo	4.21	2.99	3.08	3.89	3.77	3.65
Kandangrejo	3.66	3.37	3.38	3.88	3.76	3.62
Sarongan and Rajegesi	3.94	4.78	3.13	4,34	4.38	4.27
<b>Average results</b>	<b>3.95</b>	<b>3.73</b>	<b>3.19</b>	<b>4.04</b>	<b>3.89</b>	<b>3.81</b>
<b>Average results of Jember and Banyuwangi</b>	<b>3.49</b>	<b>3.53</b>	<b>2.93</b>	<b>3.73</b>	<b>3.54</b>	<b>3.47</b>

Source: primary data processed, 2018

The process of community empowerment with dusung method in the process of rehabilitating the Meru Betiri National Park area was 3.73 which was followed by a logging program with an effectiveness value of 3.54. This shows that the community wants to be invited to cooperate in the process of returning ecosystems using the dusung method in the area of Meru Betiri Jember and Banyuwangi National Parks. Landscape changes in land conservation zones that have been damaged due to human activities. The location of the land degradation at certain points is difficult to access by supervisors from Meru Betiri National Park. The process of land clearing by burning and illegal logging is an activity that is mostly carried out by the community, especially those who live in rural areas. These activities are difficult to control given the inter-village accessibility in the Meru Betiri National Park zone which is still a rocky road.

The results of implementing ecosystem restoration cannot run optimally without the support of the community. Implementation of dusung method by collaborating farming systems and forestry to be more effective in restoring overall environmental conditions. The distribution of uneven population settlements makes implementation need to be accommodated by applying the dusung method. The aim is to improve social and economic conditions, especially for those who depend on their lives from the environment and nature around their homes. The following are activities for the implementation of intercropping and agroforestry cropping methods that have been carried out by farmer groups assisted by Meru Betiri National Park.



**Picture 1.** Process of Returning Agroforestry Ecosystems with Method Dusung

Members of farmer groups who accept the concept of the dusung method in the return of assisted ecosystems in the application of preserving the environment and conservation forests. The coaching process activities carried out need to be carried out continuously in an ecosystem return program that is promoted by stakeholders. One of the farmers' decisions in land management is based on economic flows that involve trade nationally, regionally and internationally [3]. Land conditions can be good with reforestation activities on privately-owned degraded land [10]. Cultivators and utilization of plants can support food security, and contribute to increasing the income of poor farmers in sustainable village development [2]. Therefore, the program to restore the conservation area of Meru Betiri National Park must be carried out sustainably. The hope is that the people who live around the conservation area will better preserve the environment in

space and territory.

#### 4. Conclusion

The understanding of geographic literacy needs to be applied to community members in the land and forest conservation zones that are incorporated in the assisted farmer groups resulting from the collaboration of the national park hall with residents around the conservation zone. Communities belonging to assisted farmer groups are still in the poor category due to low education as an impact of accessibility that is difficult to reach geographically. Erratic community income every day increases activities in the utilization of protected conservation forest potential. The implementation of the dusung method is very useful for farmer groups and communities for the restoration of ecosystems in Meru Betiri National Park, especially degraded land. Excess implementation of the dusung method can reduce damage to conservation forests, soil erosion, soil hydrological crises, natural and environmental landscape changes, landslides, development of family medicinal plants, and be able to restore the Meru Betiri National Conservation Area ecosystems sustainably.

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