PAPER • **OPEN ACCESS**

Empowered Communities: Increasing The Role of Communities in Management and Conservation in Meru Betiri National Park

To cite this article: A R Pratama *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **485** 012141

Empowered Communities: Increasing The Role of Communities in Management and Conservation in Meru Betiri National Park

A R Pratama[1], W Subchan[1*], R P N Puji[1], and R D Ramadani[1]
[1]Faculty of teacher training and Education, Universitas Jember

*wachju.subchan@unej.ac.id

Abstract. Economic industrialization has an impact on human to more frequently in exploiting forests. During the colonial era, forest management rights were fully centralized to the state, people living around forests were considered a threat that would damage forest sustainability. This results in the community losing control of access to economic resources from the forest. This discrimination continued until the New Order regime came to power. The paradigm that marginalizes the community around the forest becomes a catalyst for the community to loot the forest. The purpose of this study is to identify threats to forest sustainability and provide alternative solutions to solve the problem. The research site is in the Meru Betiri National Park, a unique area that was targeted for forest looting during the early reform period. The research method uses literature studies and Participatory action research. Literature study is needed to analyze how the structure of forest tenure, and Participatory Action Research is carried out to provide appropriate action in providing solutions to problems that occur. The results showed that the source of the threat of forest destruction comes from the lack of community role in the management of the forest itself. Troubleshooting solutions are presented in this article.

1. Introduction

This paper will review the extent of community involvement in managing and conserving forests in East Java. The existence of forests has a very important function to support human life, especially in agriculture and plantations. The extent of the remaining forests in Java is threatened by various forms of deforestation carried out by the community itself.

Previous studies in this study have been conducted by many researchers. Like the article written by Krisnadi entitled Forest Disasters And Preservation: Cultural Perceptions The National Meru Betiri National Wilding Community. This journal is used as a reference in viewing forest conservation not only from the view of the government, but also the views of local people who live near Meru Betiri National Park. [2]

Krisnadi saw how the Javanese and Madurese used their local wisdom to cope with the disasters in the Meru Betiri National Park by planting several types of plants that were able to withstand the rate of erosion, as well as being economically beneficial.

Based on the study of literature, we were moved to check how, the efforts of the community and government to conserve forests by obtaining two benefits at once, namely the benefits of ecological conservation and economic benefits

Research Location

Meru Betiri National Park is in the southern East Java region at geographical coordinates 8 ° 21 '- 8 ° 34' S, 113 ° 37 '- 113 ° 58' E, with elevations of 900 - 1,223 above sea level. The average rainfall is about

2,300 mm / year. Meru Betiri was designated as a national park since 1982 by the Minister of Agriculture. The National Park area around 58,000 ha with the name taken from the name of the highest mountain in the region, Betiri Mountain (1,223m). Administratively, Meru Betiri National Park is located in the Pesanggaran subdistrict, Banyuwangi Regency and Jember Regency, East Java Province. The appointment of the national park was endorsed by a decree of the Minister of Forestry, SK No. 277 / Kpts-VI / 97.

The status as a protected forest in Meru Betiri is based on Besluit van den Directuur van Landbouw Neverheiden Handel, on July 29, 1931 Number: 7347 / B and Besluit Directuur van Economische Zakken dated April 28, 1938 Number: 5751. In 1972 Meru Betiri National Park was Defined as a Wildlife Reserve covering an area of 50,000 hectares based on Decree of the Minister of Agriculture Number: 276 / Kpts / Um / 6/1972 dated June 6, 1972 with the main objective of protection of Javanese Tiger species (*Panthera tigris sondaica).*

Based on the Decree of the Minister of Agriculture No. 529 / Kpts / Um / 6/1982 dated 21 June 1982 the Meru Betiri Wildlife Reserve area was expanded to 58,000 Ha. (Bandealit and Sukamade Baru plantations cover an area of 2,155 Ha, as well as a northern protected forest area and sea water areas along the South Coast covering an area of 845 Ha). Statement of the Minister of Agriculture Number: 736 / Mentan / X / 1982 dated October 14, 1982 The Meru Betiri Wildlife Reserve was declared as a Prospective National Park.

Meru Betiri National Park is a representative type of lowland tropical rain forest ecosystem that has high ecological value. At least 499 species of flora have been recorded with 15 of them being protected, 239 have been known to have medicinal properties and 77 of them have been utilized by the local community. Meru Betiri National Park also has 217 species of fauna of which 25 are mammals, 18 of which are protected mammals, 8 species of reptiles, 6 of which are protected and 184 species of birds of which 68 are protected. Endemic flora of Padmosari (Rafflesia zollingeriana) and Leopards (Panthera pardus), Banteng (Bos javanicus), Kijang (Muntiacus muntjak), Peacocks (Pavo muticus), Turtles, and other types of primates, and other aves are unique flora fauna. in Meru Betiri National Park which is also known as the last habitat of the Javanese Tiger (Panthera tigris Sondaica).

Related to the management of Meru Betiri National Park, Government Regulation number 28 of 2011 concerning Management of Nature Conservation Areas and Nature Reserves states that "National Parks" are Nature Conservation Areas (KPA) that have native ecosystems, managed with zoning systems that are utilized for research purposes, science, education, supporting cultivation, tourism and recreation.

2. Method

The method used in this research is the use of literature studies related to the power of political relations in the management of forest governance. In the literature study found some data that states that by the ruling regime, the people or people who live around settlements are considered as a threat that can damage the sustainability of the forest. This research is trying to change the paradigm of the approach taken by the government, as well as test a hypothesis, that people who live around the forest must be actively involved to be able to protect the forest. The process for increasing the active role of the community is to use participatory research methods.

This research was conducted by directly interacting with the community around the forest. Researchers then are among the people around the forest, and begin to study what problems are faced by the community around the forest. Researchers finally formulated various alternative solutions so that the community would no longer encroach into the national park area.

Efforts to increase community involvement so that they can play an active role in preserving forests are by increasing their economic well-being. So the researchers assume if the community around the forest is prosperous, they will actively participate in preserving the forest.

Some ways that can then be done to improve the welfare of residents is to make batik patterned animals and endemic flora that exist in national parks using natural dyes. Provide tree seedlings whose fruit can be used as an economic resource. Make food diversification. Give permission to residents to be able to harvest non-timber forest products. It is expected that after the community around the forest can

feel the economic value of the forest that is still good, the community will consciously continue to preserve the forest. Researchers will continue to assist, so that the improvement program can run well.

The discussion held at the Meru Betiri National Park Management Office in Jember which was held in November 2019, has shown several programs and progress from the results of a long dialogue between farmers and the government. Like the results of our interview with a resource person who lives in the village of Curah Nongko, they get an increase in income due to planting that they did a few years ago. By using this partnership scheme, farmers can take advantage of a fairly stable, compared to using illegal logging methods. This resource person was originally a farmer who was determined to plunder forests. But after being socialized and given assistance and counseling with the right planting techniques, he finally wanted to be invited to work together and become one of the farmers who carried out land conservation.

From this discussion it can be seen that the government has taken a different approach to local farmers around Meru Betiri National Park, this persuasive approach is believed to be more humane than it was during the New Order era. This successful farmer finally gave his example to other farmers or residents around the Meru Betiri National Park to invite them to become farmers on degraded land, and obtain economic benefits.

3. Results and Discussion

Forest commodities in the form of wood have actually been used since the VOC's rule. Since the 1600s the VOC has been using teak wood originating from Java for shipbuilding purposes. The strong sea fleet owned by the VOC made them one of the strongest trade unions in the world at that time. A strong sea fleet is needed to secure trade routes that stretch from the archipelago to Europe. Therefore, for the maintenance of the fleet, and for the construction of new ships, the VOC badly needed a large supply of wood. [3]

In the early days, VOC ships were made without using teak wood. However, the condition has changed due to oak, eik, or also called oak (included in the genus Quercus) which is usually used to make ships in Europe getting scarce.[4] So, the VOC slowly began to use teak as a substitute for making ships. Teak wood (Tectona sp.) Is one type of hard wood in Indonesia. Teak wood is very strong, dense and wood stems grow upright and straight, making it easy to be processed into shipbuilding materials and other furniture. It is these superior qualities that make teak one of the best shipbuilders in the world compared to wood species in Europe. [5]

To fulfill the need for teak, the VOC required the regents who were subject to their authority to surrender a certain amount of teak. The VOC assumed that the forest owned by the sultan or the king they had conquered automatically had ownership rights transferred to the VOC. In 1733 an agreement was made between the VOC and Paku Buwono II. Paku Buwono II is required each year by the VOC to deposit 8500 large and small teak logs originating from the Jepara, Demak, Waleri, and Brebes areas.

The agreement also affirmed the VOC's full sovereignty over the forest and its labor force, the VOC claimed that all forest wood in Java must be handed over to the VOC. The wood can be used for own purposes by the regents, or the people, if they have obtained permission from the VOC. The VOC exploited the forest in two ways, the first was called contingenten, and the second was called mandatory surrender. In order to meet the needs of timber for the VOC, indigenous rulers usually mobilized the Blandong to carry out the task of cutting wood.

In the 19th century was a turning point for forest management in Java. During this time the colonial government established an organizational system for managing forests. Forest management organizations in the colonial period, have provided clear boundaries between forests and agricultural land on a map. Whereas in the field, this forestry organization forms forest rangers (jagawana) to restrict residents or people who do not have a permit when they are going to access the forest. At this time also, foresters (forester) has a fairly strong position. Foresters because they are one of the most important instruments in scientific forestry, they have the power to determine forest boundaries, determine and give rights to individuals or companies to cultivate forests.

Foresters have a huge dominance in making all decisions regarding forests. In addition, they also feel they have all the commodities in the forest. As a result, foresters easily regard communities as "criminals", because they make exploitation of forest resources in an "illegal" way. Actions that are categorized as "illegal" by the community according to foresters are, taking forest products without permission, tending livestock, collecting firewood, cutting wood for house construction, and traditional extraction activities. [6] Even though the traditional forest extraction activities they carried out by foresters were said to be illegal, they still insisted on fighting back. The traditional forest extraction actions carried out by the community, and unilateral claims made by the state for all forest ownership, have finally led to conflicts between foresters who are the government's representative and the community around the forest which has always been going on until now. forests need maintenance and protection to maintain human survival [1].

In 1865 the colonial government passed a Forestry Law which contained a classification of forest types found in Java. From these different classifications, a management system will be formulated that regulates each forest type according to the type and location of the forest. Non-teak forests located at a certain height, especially at the foot of mountains, and steep slopes are included in state forests, with this status the stands in the forest are prohibited from being cut down. These forests must remain and function to protect the soil from erosion as well as from other potential ecological disasters. The existence of these forests is also very important to support plantation policies that depend on the balance of the ecosystem to be able to obtain satisfactory results. The forestry law of 1865 implemented by the colonial government also stipulated that all forests that did not have ownership claims belonged to the state. This law is the basis of scientific forestry that continued to be applied until the New Order regime came to power in this country.[7]

The most striking implication of the Forestry Act of 1865 was the loss of control of the surrounding community over access to forests near them. Residents in villages around the state's forest are prohibited from felling, picking up fallen trees from fallen trees, and grazing their livestock in the state's forests. If the villagers are looking for firewood or collecting non timber forest product, then the activity should be monitored by the forest police in the area.

3.1 Forest Exploitation Under New Order

Since UU No 5 tahun 1967 concerning Forestry has been applied, the era of the forest concession system (HPH) was began. [8] The state-owned companies (BUMN) and private companies are competing to have HPH. These competition make the ruling elites then collaborated with traders to exploit forests massively, this step begin with ignorance from government to involve scientists to make a wise step or decision to exploiting timber forest. Because of the government easily give so many concessions to the private companies, so in 1995, there were about 586 HPH concessions with a total area of 63 million hectares. Over half of concessions located on the protected forest area, both exploited by private companies and Soeharto's crony [9].

Unfortunately, the majority of the forest areas granted for HPH are forest areas that have not yet been confirmed of the legal status. This means that the area does not yet have a formal legal claim that the forest belongs to the state. The implementation of the HPH concession system during the New Order was like a form of mass plundering of national forests and was done out vulgarly by the New Order elite political regime. The elite politician also supported by military who were domiciled at the time.[10] Ministry of Environment and Forestry released a fact of deforestation in 2016-2017 is about 496,370 hectares. This record has decreased from the previous year, which is around 630,000 hectares per year. That number is not small even though there has been a decline. However, Indonesia's forests are a huge mass of biodiversity, home to thousands of plant and animal species, and millions of Indonesians depend directly on forests for their livelihoods.

Meanwhile the sweetness of the economic rents from forest exploitation does not flow very much to the local population. In fact, in a number of cases, people who are very close to forest concessions are actually "poor" communities. Most workers who work in the forestry sector are brought in directly from outside East Kalimantan. So that the opportunity for local people to get dsplashed economic rent from the

forestry sector is getting smaller. Local people also sometimes have no access at all to forests that are close to where they live. In the end, they cannot get economic rent from forest commodities. So slowly but surely they were then marginalized by the forestry policies made by the New Order regime, just as Peluso said, Poor People's Rich Forest

3.2. Building the same vision: Protecting the Forest with Local Community Participation

Because during the New Order the local community around the forest was only considered a threat, so the New Order regime tended to treat them with acts of violence. However, when the reformation took place, acts of violence against local and adat communities were changed. Local and indigenous communities are also considered to have rights to use forest products. Therefore a social forestry policy is prepared, where there is a legal mechanism that guarantees the rights and obligations of indigenous or local communities to be able to access the economic value of their forests.

Local Communities that are members of the JAKETRESI farmer group (Rehabilitation Farmer Group Network) from Ekstnongko Village, Jember Regency can manage the rehabilitation zone of Meru Betiri National Park. This partnership signed in the MoU between the community and the Meru Betiri National Park Manager and the Village Government, related to community activities, in this case represented by JAKETRESI with Meru Betiri National Park regarding community participation in conservation, reducing emissions from deforestation and degradation, implementing forest rehabilitation and improving welfare Public.

In Permenhut Number: P.56 / Menhut-II / 2005 Concerning National Park Zoning Guidelines, it is stated that National Park Zoning is a process of spatial planning in national parks into zones taking into account studies of ecological, social, economic and economic aspects. community culture. This is the basis for consideration in determining the Meru Betiri National Park zoning.

Based on the Forestry Minister's Regulation and the Decree of the Director General of PHKA 2011 Regarding the Meru Betiri National Park Zoning, the zoning system or spatial arrangement within the area in Meru Betiri National Park is as the Core Zone, Wilderness Zone, Maritime Protection Zone, Utilization Zone, Utilization Zone, Rehabilitation Zone, Traditional Zone , and Special Zones.

The rehabilitation zone is part of the Meru Betiri National Park which, due to damage, requires activities to restore biodiversity and its ecosystem. The rehabilitation zone is managed by a farmer in Ekstnongko Village with a certain area bordering primary forest, plantation, settlement, and agricultural area.

The results of the mapping and inventory of plants in 2011, by KAIL (Indonesian Nature Conservation Conservation) together with JAKETRESI noted, in the rehabilitation land, there were 48 thousand trees with 34 species of trees planted by the community with an agroforestry system, which combines intercropping plants with medicinal plants and other multipurpose plants.

In 2009, Meru Betiri National Park became the location of the Pilot Project Reducing Emissions from Deforestation and Forest Degradation (REDD) which is a collaboration between the Ministry of Forestry and the International Tropical Timber Organization (ITTO). The Meru Betiri National Park carbon baseline totals 29,690,954.3 tCO2e.

The rehabilitation activities carried out by members of the farmer groups begin with the nursery, planting and maintenance of forestry plants and / or intercropping plants. Rehabilitation activities to harvesting are not only done by men. Nongko's village girl is also actively involved in it.

The main activity is to rehabilitate ecosystems with a target of 400 seedlings per hectare on critical land covering an area of 410 hectares. Ecosystem rehabilitation activities are carried out with an agroforestry system, which is by combining forestry plants that have conservation value and high

The PHKA Director General Approval Letter in 1998 and the 1999 PHKA Director General Approval Letter regarding community rehabilitation activities strengthened this MoU. The MoU related to community rehabilitation activities includes[11]:

1. Communities can cultivate land in the rehabilitation zone of Meru Betiri National Park area.

2. Communities are required to plant staple crops in the form of native plants (endemic) that are medicinal or other benefits from the Meru Betiri National Park area, which is provided by the TNMB Office and independently.
3. The community may plant intercropping plants between the main crops.
4. Not allowed / prohibited from growing plantation crops such as: cocoa, coffee, tobacco, etc.
5. Staple crops in the form of fruit are the rights of the sharecroppers while the trees cannot be cut down and are TNMB assets.
6. Land status is state land which must not be converted into ownership rights or other statuses.
7. The community is obliged to assist in securing the TNMB area carried out by officers (POLHUT) and the TNMB Office.

The community obtains management rights with the assurance that the rehabilitation zone is managed sustainably and the community receives long-term benefits in a sustainable manner, the object and scope of this collective agreement also includes the use of environmental services.

Plants that have economic value planted by local communities chosen by considering the authenticity of species originating from the Meru Betiri National Park area and at the same time considering the proposed types of plants from the community that can be accommodated in the provisions of rehabilitation land management as a national park area. These plants include; medicinal plants and other multipurpose plants, kenitu (*Chrysophyllum cainito*), Sirsak (*Annona muricata*), Pinang (*Areca catechu*) Kedawung (*Parkia roxburghii*), Kemiri (*Aleurites moluccana*), Rambutan (*Nephelium lappaceum*), Mango (*Mangifera indica*), Durian (Durio zibethinus), Alpokat (Persea Gratissima Gaertn), Pakem (Pangium edule Reinw. ex Blume), Joho (*Terminalia bellirica*), Petai (*Parkia speciosa*), Nangka (*Artocarpus heterophyllus*), , Mlinjo (*Gnetum gnemon*).

The benefits to be gained by returning to plant critical land is, the community can benefit from the fruit of the trees they plant. In addition, land is more stable and more resistant to erosion and landslides. Greening on critical land also has the potential to be able to restore the catchment area, and the springs will be restored. The existence of natural springs can be used as a function for water sources and as ecotourism objects.

Local people can also increase their income by developing ecotourism, in this ecotourism concept the community can also sell many products that they make by using sources from the forest. Like batik using natural dyes, in addition they can also sell a variety of processed food products that they process using natural ingredients.

4. Conclusions

To preserve forests no longer have to use the New Order regime approach using a violence approach. But there are events that can benefit all parties, namely by increasing their role in contributing and actively involved in the greening business. When people get a lot of benefits from forest preservation, then they will be the vanguard in the process of forest protection, including in the case of Meru Betiri National Park.

Recommendation to strengthen the role of the community in Meru Betiri National Park: 1. Provide legal documents about the status of land use. 2. Give Legal Permission to harvest non-timber forest products. 3. Adding more value of the forest products. 4. Empowering ecotourism by conserving critical land. 5. Enhancing Education to give local people opportunity to have a main role for conservation

References

[1] Dlamini 2010 Management of Forest Fire Disaster: Perspectives from Swaziland *Natural and Anthropogenic Disasters: Vulnerability, Preparedness and Mitigation* **8**
[2] Krisnadi 2018 Bencana dan pelestarian hutan: persepsi kultural masyarakat pinggiran hutan taman nasional meru betiri *Humaniora* **1**
[3] Peluso, Nancy L 1992 Rich Forests, Poor People: Resource Control and Resistance in Java. Los Angeles: University of California.

[4] Departemen Kehutanan 1986 Sejarah Kehutanan Indonesia I: Periode Pra Sejarah – 1942. Jakarta: Departemen Kehutanan Republik Indonesia.
[5] Abdurahman Martawijaya dan Iding Kartasujana. 1977 Ciri Umum, Sifat dan Kegunaan Jenis-jenis Kayu Indonesia. Bogor: Lembaga Penelitian Hasil Hutan.
[6] Warto 2009 Desa Hutan Dalam Perubahan: Eksploitasi Kolonial Terhadap Sumberdaya Lokal di Keresidenan Rembang 1865 – 1940. Yogyakarta: Penerbit Ombak.
[7] Cribb, Robert 1994 The Late Colonial State in Indonesia: Political and Economic Foundations of Netherlands Indies 1880 – 1942. Leiden: KITLV Press. [Verhandelingen KITLV 163]
[8] Roos, Michael L 2001 Timber Booms and Institutional Breakdown in Southeast Asia. Cambridge: Cambridge University Press.
[9] Robison, Richard. Terj. Harsutejo 2012 Soeharto & Bangkitnya Kapitalisme Indonesia. Jakarta: Komunitas Bambu.
[10] Colfer, Carol J. P and Doris Capistrano. (ed) 2006 Politik Desentralisasi Hutan, Kekuasaan dan Rakyat: Pengalaman di Berbagai Negara. Bogor: Central for International Forestry Research (CIFOR).
[11] Anonim 2020 Petani curah nongko selamatkan taman nasional. http://kpshk.org/2015/04/30/petani-curah-nongko-selamatkan-taman-nasional/ accessed January 10th, 2020