WOMEN MANAGING FOREST: CASE IN GUNUNGKIDUL AND KULON PROGO REGENCIES, YOGYAKARTA SPECAL PROVINCE, INDONESIA

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ABSTRACT

The relationship between women and forests is manifested through women's involvement in maintaining forest ecosystems. The involvement of women in forest management is one of the strategic issues in the Special Region of Yogyakarta Province. This study aims to analyze forest management activities and assess the impact of forest management activities on women. This study used a qualitative descriptive analysis with the framework of Harvard model gender analysis. This study took place in the Special Region of Yogyakarta, and used 2 locations as case studies, namely Beji Village (Gunungkidul Regency) and Hargowilis Village (Kulon Progo Regency). In Gunungkidul Regency, forest management is directed towards conservation activities, while in Kulonprogo Regency it is forest utilization for agricultural activities. The impacts felt by the women (and men) of the Ngudi Lestari Ranger Group are more on ecological and social benefits. Meanwhile, the Mengger Rejo Forest Farmer Group also receives economic benefits that are equally felt by both genders. This study shows that forests in different locations with different geographic and socio-demographic characteristics will result in different management systems. However, both locations of this study show that women have an important role in forest management.

Keywords: forest management, forest management impact, gender and environment, women, women participation

INTRODUCTION

Forests are the source of life (Widiaryanto, 2019; Pambudi, 2020; Zhiyanski et al., 2021). This phrase is quite reasonable considering that the preservation of forest ecosystems is one of the parameters for the sustainability of life around it (Widiaryanto, 2019), not only related to the biophysical aspects of the forest environment but also aspects of social dynamics of community (Widiaryanto, 2019), the economy of the surrounding community (Palmolina, 2014; Mulyadin et al., 2016; Rahma et al., 2021), even aspects of forest governance

(Widiaryanto, 2019). In this context, efforts to renew and maintain forest ecosystems are prerequisites in realizing an equitable (Suliantoro et al., 2011; Pandey & Pokhrel, 2021), sustainable (Togubu et al., 2022), and sovereign (Widiaryanto, 2019).

To realize an equitable development, efforts to maintain ecosystem sustainability and utilization of forest resources require the role of various parties, including women (Fauziyah, 2018; Killian & Hyle, 2020; Kahsay et al., 2021; Pandey & Pokhrel, 2021). In her research in Ethiopia, Kahsay et al., (2021) outlined that the role of women in decision-making is necessary to achieve forest conservation and benefit their livelihoods. Meanwhile, Pandey & Pokhrel, 2021) elaborated that the gender approach in forest environmental management in Nepal is an inclusive development approach, where this inclusive development provides broad access for women in formulating policies (Suliantoro et al., 2011), managing and utilizing forest resources (Bingeman, 2001; Fauziyah, 2018; Pratama & Rijanta, 2021; Rahma et al., 2021).

The relationship between women and forests is manifested through women's involvement in maintaining forest ecosystems (Waani, 2010; Godbole, 2002; Suliantoro et al., 2011; Gabriel et al., 2020), sustainable forest management (Varghese & Reed, 2012; Togubu et al., 2022), as well as the participation of women as part of forest farmers (Rahmawati & Sunito, 2013; Wulandari & Budiono, 2016), where this is influenced by geographical aspects (Savari et al., 2022), as well as the socio-demographic of their location (Elias et al., 2020; Gabriel et al., 2020; Kuhlman et al., 2023).

The involvement of women in forest management is one of the strategic issues in the Special Region of Yogyakarta Province, moreover the Special Region of Yogyakarta Province has a forest area of 19,036.42 Ha, consisting of Protection Forest (Hutan Lindung/HL), Production Forest (Hutan Produksi/HP), and Conservation Forest (Hutan Konservasi/HK), which is divided into 4 regencies, namely Gunungkidul with an area of 15,027.65 Ha (Conservation, Protection and Production Forest), Bantul with an area of 893.61 Ha (Conservation and Protection Forest), Kulon Progo with an area of 1,050.89 Ha (Conservation, Protection and Production Forest), and Sleman with an area of 2,064.26 Ha (Conservation Forest) (Dinas Lingkungan Hidup dan Kehutanan DIY, 2021). Meanwhile, Community Forests (Hutan Rakyat/HR) in the Special Region of Yogyakarta Province has an area of 65,886.56 Ha (Dinas Lingkungan Hidup dan Kehutanan DIY, 2021).

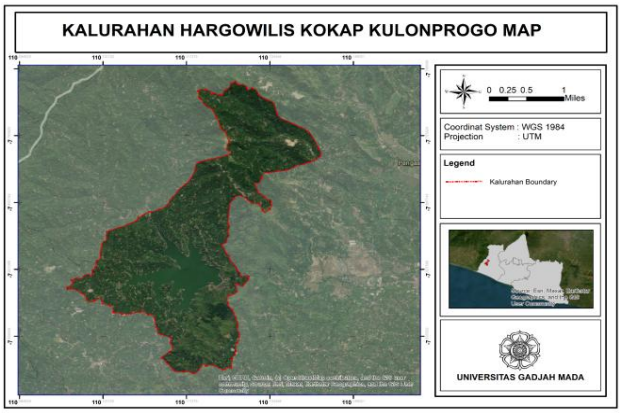
This research raises the discourse on the relationship between women and forests which focuses on the access and control that women have over forests.

Two cases are selected in this research, namely women as forest guards in the Ngudi Lestari Ranger Group in Beji Village, Ngawen District, Gunungkidul Regency and women as forest guards and forest farmers through the Mengger Rejo Forest Farmers Group in Hargowilis Village, Kokap District, Kulon Regency Progo. The aims of this research are (1) to analyze women's activities in forest management in Gunungkidul and Kulon Progo, (2) to examine the impact of forest management activities on women. There is a dualism in the perspective of the relations between women and forests, especially the role of women as forest rangers who maintain forest ecosystems and women as forest farmers who utilize forest resources is an interesting matter to study. Previous studies have not specifically reviewed the relations between women and forests in two different activities or locations with different geographic and socio-demographic characteristics.

METHODS

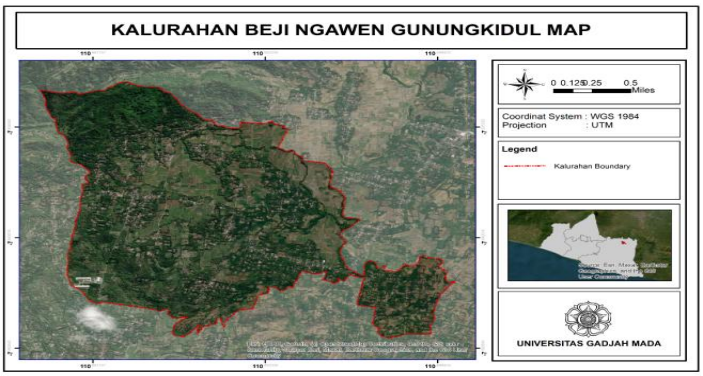
This research is qualitative research using a case study approach. The case study approach is a temporary (case) or limited-variety systems (multiple cases) qualitative approach, through detailed and in-depth data collection involving multiple sources of information (e.g., observations, interviews, audio-visual materials, documents and various reports), and report case descriptions and case themes (Creswell, 2014; K Yin, 2019).

This study took place in the Special Region of Yogyakarta, and used 2 locations as case studies, namely Beji Village, Ngawen District, Gunungkidul Regency, and Hargowilis Village, Kokap District, Kulon Progo Regency. Meanwhile, the research object is the relationship between women and forests, both as forest rangers and forest farmers.



Source: Author data processing, 2023

Picture.1. Hargowilis Village Map



source: Author data processing, 2023

Picture.2. Beji Village Map

Wonosadi Forest is located in Beji Village, Ngawen District, Gunungkidul Regency, where the Wonosadi Forest managed by a community group namely the Ngudi Lestari Ranger Group, functions as a protection and conservation forest. The choice of location of Wonosadi Forest is due to the relations between women and forests which is manifested through women's access and control in forest conservation management through the Ngudi Lestari Ranger Group, which is also chaired by a woman.

The next research location is Hargowilis Village, Kokap District, Kulon Progo Regency, where there is a Mengger Rejo Forest Farmers Group that has government access to manage state forests in the Petak (Plot) 28 area. The interesting thing about this location is the involvement of women in forest management through forest farmer groups, where women have the same access and control as men do.

In addition to being based on the unique characteristics of the relations between women and the forests, the selection of the two locations was also based on the characteristics of the research locations where there are differences geographically and socio-demographically, even though the two locations are both forest areas and located in a cluster of hills. Hargowilis Village, Kokap District, Kulon Progo Regency is located in a cluster of hills in the western part of the Special Region of Yogyakarta Province. Meanwhile, Beji Village, Ngawen District, Gunungkidul Regency is located in a cluster of hills in the southern part of the Special Region of Yogyakarta Province.

The collection of data and information is done through observation and in-depth interviews. Observations were made to see the research area, so that a general description of the condition of the research area could be obtained (K.Yin,

2019), as well as actual issues related to the relations between women and forests. In this study, observations were made to determine the characteristics of the two research locations and the characteristics of women's activities as rangers and forest farmers.

In-depth interviews were conducted with the aim of learning more deeply about the relations between women and the forests, both their activities as rangers in Beji Village, Ngawen District, Gunungkidul Regency, and as forest farmers in Hargowilis Village, Kokap District, Kulon Progo Regency. In this study, in-depth interviews were conducted with the Chairperson and members of the Jagawana Ngudi Lestari Beji Village, Ngawen District, Gunungkidul Regency; as well as with female members of the Mengger Rejo Forest Farmers Group in Hargowilis Village, Kokap District, Kulon Progo Regency.

This study used a qualitative descriptive analysis with the framework of Harvard model analysis, namely by analyzing the access, participation, benefits and control possessed by women both as rangers and forest farmers in the two research locations. Meanwhile, the data analysis technique in this study was prepared by adopting the developed qualitative data analysis technique (Miles & Huberman, 1992), namely interactive analytical model.

RESULT AND DISCUSSION

RESULT

Women activities in Forest Management: Women Activity in Wonosadi Forest, Gunungkidul

The Wonosadi Forest is a customary forest area located in Beji Village, Ngawen District, Gunungkidul Regency. The total area of this forest is 25 hectares with a core zone of 20 hectares which functions as a protection and conservation forest, and a buffer zone of 5 hectares which functions as a production forest. The Wonosadi Forest is managed into two parts, namely conservation area and Biodiversity Area (Kawasan Keanekaragaman Hayati/KEHATI). The conservation areas are maintained so that the existing conditions remain natural without human intervention. Meanwhile, in the KEHATI area, the existing resources may be utilized and managed for the welfare of the community.

The Wonosadi Forest is managed by a community group, namely the Ngudi Lestari Ranger Group. The group was founded on the community's initiative and desire to preserve the Wonosadi Forest. According to the Chairperson of the Ngudi Lestari Ranger Group from 2009 to the present, one of

the triggers for the group's establishment was forest destruction that occurred in 1965 which caused the land to become barren and there were no flowing springs (Indpeth interview, 10 June 2023). In 1966, a local resident invited the community to plant trees in the forest. Since then, people's awareness to protect the Wonosadi Forest has started to grow. Members in the group are mainly residents of Sidorejo Hamlet and Duren Hamlet.

The Ngudi Lestari Ranger Group currently consists of 25 members, 4 of whom are women. The rangers group is dominated by members aged 55-60 years. Meanwhile, the oldest members are around 70 years old and the youngest members are in the age range of 30-40 years. There is no specific requirement to joint the rangers group.

The activities conducted by the Ranger Group focus on mutual cooperation to maintain and to protect the sustainability of the ecosystem in the Wonosadi Forest. In the KEHATI area, the community uses the area for the cultivation of wood and fruit-producing crop commodities. Moreover, under the stands of forest trees are also used for planting herbal plants such as turmeric, ginger, galangal, and so on. The Ngudi Lestari Ranger Group also maintains the cleanliness of the forest site from inorganic waste that cannot be decomposed by the forest biome (Interview Results, 10 June 2023). In addition to ecological benefits, there is an economic benefit by processing waste wood branches and dry leaves into organic fertilizer.

Women Activity in Kulon Progo Forest

Forest management activities in Kulon Progo referred to in this study are forest management carried out by the Mengger Rejo Forest Farmers Group located in Hargowilis Village, Kokap, Kulon Progo. The Mengger Rejo Forest Farmers Group is one of 206 Forest Farmer Groups in the Kulon Progo Regency area, where the Mengger Rejo Forest Farmers Group is an intermediate Forest Farmer Group registered in 2015. The term Forest Farmers Group (Kelompok Tani Hutan/KTH) in Indonesia was coined by the Ministry of Forestry starting in 2014, through the Regulation of the Minister of Forestry of the Republic of Indonesia Number 57/Menhut-II/2014 concerning Guidelines for Fostering Forest Farmers Groups. However, this regulation has been revoked through the Regulation of the Minister of Environment and Forestry Number P.89/MENLHK/SETJEN/KUM.1/8/2018 concerning Guidelines for Forest Farmer Groups. Based on the Regulation of the Minister of Environment and Forestry Number P.89/MENLHK/SETJEN/KUM.1/8/2018, it is stated that the Forest Farmers Group is a group of Indonesian citizen farmers who manage businesses in the forestry sector inside and outside forest areas.

The Mengger Rejo Forest Farmers Group manages state forests in Kulonprogo Regency, both production forests and protected forests in the lower western part of Kalibiru Nature Tourism which is located in Menoreh Hills. This Forest Farmers Group was established on April 14, 1985. The Mengger Rejo Forest Farmers Group has a division to manage Plot 28 with a total area of 11.2 Ha. The numbers of community members in this group are 60 households, but only about 40 households are currently active. In its activities managing Plot 28, the Mengger Rejo Forest Farmers Group is divided into four blocks, each managed by 10-15 households.

The role of women in the organizational structure of the Mengger Rejo Forest Farmers Group, especially in administrative matters (Indept Interview, 16 June 2023). Almost the entire community is part of the Forest Farmers Group. Most of the community members who join are aged 40-70 years. The entire community can actually join the Forest Farming Group without any age limit. This shows that the younger generation is no longer interested in becoming members of Forest Farmer Groups.

As the name implies, the Mengger Rejo Forest Farmers Group focuses on utilizing forests for the community as well as learning to increase community capacity in managing forests. In practice, the people who are members of the Mengger Rejo Forest Farmers Group manage the forest by cultivating herbal plants, fodder crops, cassava, and kara benguk (some kind of soybeans). In addition to utilizing forest products from farming, through the Mengger Rejo Forest Farmers Group, the community also has access to develop their potential and capacity in managing forests. The Mengger Rejo Forest Farmers Group has a regular scheduled meeting, which is every Saturday night to discuss forest management programs. Apart from that, through the existence of the Mengger Rejo Forest Farmers Group, the community also carries out various empowerment programs, such as processing manure and making herbal medicine whose ingredients are obtained from forest products.

Impact of Forest Management Activities on Women

Forest management activities have some impacts on women's lives as forest management actors. In the case of Kulon Progo, forest management is their main source of income, resulting in an increase in women's productivity and economic added value. Forest products used by women in Kulon Progo are herbal plants, cassava, fodder crops, and kara benguk (some kind of soybeans) which are then processed so that they have economic value. It can be said that the women in the Mengger Rejo Forest Farmers Group process non-timber forest products.This is in accordance with Eneji et al (2015) statement that basically in

every forest community, women are more likely to take the impact of the use of non-timber forest products because it requires less time and energy to manage them. The results of forest management can then be sold independently as an additional income for them.

The involvement of women in the Mengger Rejo Forest Farmer Group also provides an opportunity for women to increase their productive role in the family. This gives benefits to people who do not own land. Through the Forest Farmers Group, each household will be given an allotment of forest blocks to be managed, for example by farming activities. As stated by a female member of the Mengger Rejo Forest Farmers Group, there is no fee to use the forest block, including no tax (Indept Interview, 16 June 2023). This is of course a plus point for the community income from forest management. Apart from the aspects of productivity and economy.

Forest management in Gunung Kidul is focused on forest protection activities. The ecological impact arising from forest protection is that there are springs. Indirectly, this has an impact on women's reproductive activities. It is easier for women in their role in the household to get clean water to meet their daily water needs, such as for cooking and washing. In addition, in their productive role, women forest rangers who also work as farmers can obtain water to irrigate their fields (In-depth interview, 10 June 2023).

However, despite their focus on forest protection, members of the Ngudi Lestari Forest Rangers Group also gain economic benefits. In the KEHATI area, they can plant crops that produce wood, fruit and herbal plants. They also gain economic benefits from processing waste wood twigs and dry leaves into organic fertilizer.

In addition to the impacts previously described women's capacity in managing forest products has also increased. Women in the Mengger Rejo Forest Farmer Group have the opportunity to receive training in making herbal medicine, weaving, and organic manufacturing (In-depth interview, 16 June 2023). Likewise, forest rangers in the Ngudi Lestari Ranger Group have also received various training, such as making organic fertilizers and herbal medicine (Indepth interview, 10 June 2023). This is certainly a big opportunity for women because it can be used as a new source of income for the community.

DISCUSSION

In the context of the relation between women and forests in the Special Region of Yogyakarta, there is actually a common thread between the role of

women as forest rangers through the Ngudi Lestari Ranger Group in Beji Village, Ngawen District, Gunungkidul Regency and women's involvement in the utilization of forest resources through the Mengger Rejo Forest Farmers Group (Kelompok Tani Hutan/KTH) in Hargowilis Village, Kokap District, Kulon Progo Regency. The two activities seem diametrically different, but there are intersecting areas, namely both activities are related to forest resource conservation efforts as a mitigation measure against climate change, where forest sustainability will minimize the risk of disasters as a result of climate change (Fajarwati et al., 2020), such as drought and lack of clean water, land and forest fires, as well as changes in the patterns of the growing season associated with food availability.

The involvement of women in forest management is divided into four aspects, including women's access, participation, control and benefits (impact) on forest management that occurred in the Ranger Ngudi Lestari Group and the Mengger Rejo Forest Farmers Group. Overall, the Ranger Ngudi Lestari Group and Mengger Rejo Forest Farmers Group have many similarities in several aspects, which show on the table 1.

Tabel 1. Profile of Access, Participation, Control and Benefits (Impact) of Women in the Ngudi Lestari Rangers Group and the Mengger Rejo Forest Farmers Group

Analysis	Ngudi Lestari Rangers Group	Mengger Rejo Forest Farmers Group
Access		
● Activities	v	v
● Tools	v	v
Participation	v	v
Control over planning and decision making	v	v
Benefits (Impacts)		
● Ecology	v	v
● Social	v	v
● Economy	v	v

Information:
v : Equal access and control between women and men
x : Women's access and control is lower than men's
source: Author data processing, 2023

Women's Access to Forest Management: Access to Forest Management Activities

Access to activities includes all activities carried out in forest management. Forest management activities in the Rangers Group focus on conservation activities. Meanwhile, forest management activities by the Mengger Rejo Forest Farmers Group focus more on production and utilization of forest products. Several activities are carried out in order to preserve the forest,

including planting crops, making fertilizer, cleaning the forest, and forest patrols. There are differences in the roles of women and men in carrying out these activities. Activities that are classified as strenuous, such as carrying seedlings, hoeing and weeding plants are carried out by men; meanwhile, women do work that tends to be lighter, such as sweeping, fertilizing, and weeding in the lower part of the forest. In addition, for patrol activities, women only patrol the lower part of the forest and men patrol the upper forest area.

Forest management activities by the Mengger Rejo Forest Farmers Group are more focused on production and utilization of forest products. These production activities include cultivating crops, harvesting forest products, and processing forest products. Farming and harvesting forest products are carried out by both men and women, so there is equal access to production activities. However, apart from utilizing forest products for economic activities, the Mengger Rejo group also preserves forests. There are other activities such as community service carried out to protect forests. Women who are members of the Forest Farmer Group have a special time to do the community service for forest protecting on Saturdays with the task of cutting down thick branches of trees. On the other hand, men get special time on Sundays by digging ditches.

This shows that in the Ngudi Lestari Ranger Group and Mengger Rejo Forest Farmers Group, even though there are differences in physical abilities between women and men, both still have the same access to forest management activities. Men and women have their respective roles and portions in forest management activities. Men are more involved in forest management activities that require heavy physical work and women are more likely to carry out lighter work of forest protection and conservation activities. This illustrates that women are also involved in sustainable forest management activities and play an important role in forest protection. This is in accordance with Nhem and Lee (2019) who stated that local communities believe that women are the ones who know best about sustainable management and use of forests for various purposes.

Access to Tools

What is meant by access to tools is the opportunity to use tools in forest management. The Ranger Group and the Mengger Rejo Forest Farmers Group have limitations in procuring tools, so there are no tools available for the group. The equipment used is still self-help because group members bring their own equipment, so that there is an equal access between women and men to the tools. In its utilization, women tend to use tools that are not heavy. Heavy equipment, such as hoe, are mostly used by men.

Women's Participation in Forest Management

In conducting their activities in forest management, women and men have differences, especially in time allocation and place of forest management activities. It is undeniable that gender differences lead to differences in roles, functions and responsibilities between women and men in forest management. Basically, each gender has three main roles, namely productive, reproductive and social roles (Suksesi et al., 2017; Utaminingsish, 2017; Dalimonethe, 2020). However, because women have great responsibility in their reproductive role as housewives, there are differences in the allocation of time and place in managing forests. The following is an explanation of the allocation of time and place for women in forest management activities in Gunungkidul and Kulonprogo:

In total there are 4 female members who join as women rangers in Wonosadi Forest; one person acts as the leader of the group and the other 3 as members. The four female rangers have different backgrounds which causes differences in the allocation of time allotted to maintain the forest, be it as entrepreneurs, farmers, and even a hamlet head. Female rangers who are farmers have more flexible time to participate in the activities of the Ngudi Lestari Ranger Group (The Head of the Ngudi Lestari Ranger Group, In-depth Interview, 10 June 2023).

The distribution of time in maintaining the Wonosadi Forest is regulated according to the members' time availability. All female forest guards (including group leaders) allocate time in the morning for their reproductive activities, such as washing and cooking. Female members carry out work caring for/guarding the forest after completing their reproductive obligations. Each female ranger allocates 2-3 hours of their time a day to patrol and clean up the forest, but with different intensities. The group leader has the most intensity when compared to the other three female members. Almost every day she has activities in the forest. Another female member with a profession as a farmer does activities in the forest 2-3 times a week. Two other female members, who are entrepreneurs and hamlet heads, have erratic intensity of activities.

The Ngudi Lestari Ranger Group also has an agenda to clean the forest once a week by both female and male members. However, there are differences in the location of activities between men and women. Men with stronger physical abilities are placed to work in the upper forest areas, while women work in the lower forest areas.

In Mengger Rejo Forest, forest care activities are carried out everyday together with managing crops and farming activities by the Mengger Rejo Forest Farmers Group, by both men and women. This farming activity is a source of

income for them. Similar to the women rangers in the Wonosadi Forest, female members of the Mengger Rejo Forest Farmers Group also have to divide their time to care for the forest while also carrying out productive activities with their reproductive obligations as housewives. The distribution of the time allocation for the female members is presented in Table 2.

Tabel 2. Time Allocation of Female Members

of the Mengger Rejo Forest Farmers Group in Managing the Forest

Roles	Allocation of Time	Activities
Reproductive	Morning	Doing household chores
Productive (Managing the forest)	Afternoon	Farming in the forest
Social	Afternoon-Evening	Organizing and socializing with the community

source: Author data processing, 2023

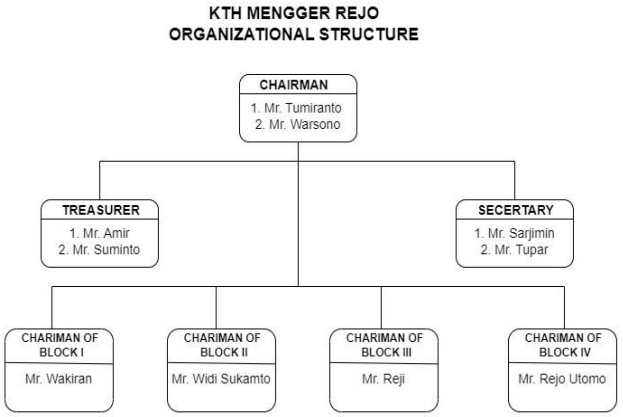
In addition to the special allocation of women in managing forests, the Mengger Rejo Forest Farmer Group also has differences in time distribution between women and men, especially in community service for forest protection every week. The forest protection carried out by the women's group is on Saturdays, while the men's group is on Sundays. However, it is possible for men and women to work together on Saturday if there is heavy work that women cannot do. However, the difference in time allocation between women and men was only found during forest protection activities. There is no difference in farming activities in the forest in term of time allocation. Moreover, in farming and managing forests, there is no difference in the distribution of farming areas between male and female members of the Mengger Rejo Forest Farmer Group because the division of places is based on the division of blocks into Plot 28 which are managed by each family.

Women's Control in Forest Management

Based on studies conducted on the Ngudi Lestari Ranger Group and the Mengger Rejo Forest Farmers Group, control is a benchmark that distinguishes forest management in Gunungkidul Regency and Kulon Progo Regency. This difference can be shown by the position of women in the organizational structure of the two groups. In the Ngudi Lestari Ranger Group, women occupy the role of a group leader (Picture.2).

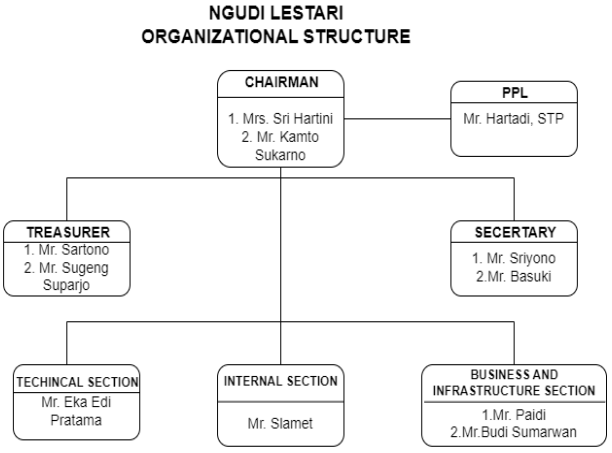
There is an interesting thing found in the Mengger Rejo Forest Farmers Group. As seen in picture.2, there is not a single woman who is the administrator in the group. Several cases in forest management groups in the world show that

rural women are often underestimated and have low social status (Agarwal.,2009;Mukherjee et al., 2017;Begum et al., 2022). Previous study, show that women voices in forest management meetings are not respected by men (Choudhurry et al., 2016). Thus, the reason why women have less involvement in organizational structures. Involving women in administration tasks plays an important role in forest management because it can effectively enhance women participation (Killian & Hyle, 2020). Thus, in the case of Mengger Rejo Farmers Group even though women are not officially become the administrator of the group, women still participated informally by taking large part of secretarial duties and involving in the group meeting actively.



source: Organizational structure document of KTH Mengger Rejo

Picture.3. Organizational structure of Mengger Rejo Forest Farmers Group



source: Organizational structure document of Ngudi Lestari Ranger Group

Picture.4. Organizational structure of Ngudi Lestari Ranger Group

In addition, Ngudi Lestari Ranger Group is led by woman. Good practices of woman participation in forest protection found in this group such as, planning discussion and decision making. Even though there were only 4 female members (including the chairperson), they were all involved in the discussion. The positive point of this involvement is that all opinions from female members are accommodated in the discussion. On the other hand, in Mengger Rejo Forest Farmers Group, the large number of female members meant that they had less control over planning and decision making. This is because not all female members are involved in discussion activities, so that the results of the discussion do not represent women's opinions.

Assessing the Impact of Forest Management Activities on Women

Forest management activities have an impact on women's lives as forest management actors. Impacts are studied from three perspectives, namely ecological, social, and economic impacts, combined with an analysis of benefits in the Harvard Analysis Framework (Overholt et al., 1984). In Ngudi Lestari Ranger Group and the Mengger Rejo Forest Farmers Group, both feel a positive impact from forest management even though the activities carried out are different. The Ngudi Lestari Ranger Group focuses on forest conservation activities, while the Mengger Rejo Forest Farmers Group more focuses on their activities as forest farmers.

From an ecological perspective, forest resource conservation activities carried out by the Ngudi Lestari Ranger Group in the Wanasadi Forest, Beji Kapanewon Ngawen Village, Gunungkidul Regency have real impacts and benefits for the community and, in particular, women, around the forest. The ecological impact that can be felt is the balance of the ecosystem in the Wanasadi Forest area, including the availability of water resources that never run out, thus bringing benefits to women, especially those who are active in the domestic sector. This is related to increasing women's capacity and understanding of the importance of conserving forest resources (Ellias et all, 2017).

Meanwhile, women’s activities in the Mengger Rejo Forest Farmer Group in Hargowilis Village, from an ecological perspective, are realized by protecting trees, especially stocked stands from illegal logging activities and community service in order to protect the forest (Indepth Interview, 16 June 2023). Not only the community in general and women in the Wanasadi Forest Area of Gunungkidul Regency who benefit from the forest, the community and also women in the Petak 28 State Forest area experience the same thing with farming activities carried out through the Mengger Rejo Forest Farmer Group. The

benefits obtained from an ecological perspective are also related to the paradigm shift in women's understanding of forest sustainability (Waani, 2010).

From a social perspective, the activities of the Ranger Group in the Wanasadi Forest of Gunungkidul Regency have the benefit of strengthening social cohesiveness in the community which is marked by the activity of cleaning forest areas involving communities around the forest, with the division of roles and tasks between men and women (In-depth Interview, 10 June 2023). This social cohesiveness is also found in the relations that arise in the women's activities in the Mengger Rejo Forest Farmer Group through regular meetings, farming activities, and cleaning Plot 28.

The norms and living order of the local communities which prioritize harmony, local values and traditions, as well as a sense of trust between members of the community in the two research locations become social capital that is strong enough to strengthen the bounding of the local community. Inclusiveness in forest management is one of the benefits from a social perspective (Varghese & Reed, 2012), both through the Ngudi Lestari Ranger Group in Gunungkidul Regency, and the Mengger Rejo Forest Farmers Group in Kulon Progo Regency.

From an economic perspective, the Ngudi Lestari Ranger Group benefits economically from supporting activities around the forest, such as food stalls (In-depth Interview, 10 June 2023). Meanwhile, in the case in Kulon Progo, forest management is their main source of income, which has an impact on increasing women's productivity and providing added economic value. Through forest management, women in Kulon Progo, especially those who are members of the Mengger Rejo Forest Farmers Group, are able to carry out production activities that increase economic welfare. In this context, both efforts to protect and utilize forests have an impact on improving the household economy (Palmolina, 2014; Rahma et al., 2021), including ensuring the sustainability of household food supplies.

There are differences in the distribution of time, location, and work assignments between men and women in managing the forest. This difference is one of the efforts to fulfil and protect women in their roles as forest rangers and farmers, which means that organizational members are aware of women's rights that must be respected. This condition shows that there is gender equality, which does not have to be 50-50, considering the biological conditions. It must be recognized that biological differences affect the potential ability of men and women. The existence of this biological differences causes 50-50 equality to be inappropriate, because the means to achieve it are not the same between men and women (Megawagi, 1999: 29-30). For example, in the Ngudi Lestari Ranger

Group, when there is a facility construction project, women are tasked with carrying the material to a location which is often in the upper areas of the forest. Another example is that women in this group are also assigned to patrol the forest which is very risky because of the steep terrain, deep forest and the threat of wild animals.

In this regard, although women are the most vulnerable, women are also central figures who have a strategic role as active agents who have developed strategies and responses in accordance with local conditions and are sustainable despite limited access to resources and unfavorable gender power relations(Wulan, 2007; Nellemann et al., 2012). In addition, the role or participation of women in forest conservation and utilization of forest resources will affect the involvement of surrounding circles, namely husbands, other family members and also fellow women. Involving women is an effective way to increase community participation (Zikrillah et al., 2021) and the process of information dissemination (Mustangin, 2017).

CONCLUSION

Forest management activities carried out by each community group in Gunungkidul and Kulonprogo Regencies show differences. In Gunungkidul Regency, forest management is directed towards conservation activities, while in Kulonprogo Regency it is forest utilization for agricultural activities. Women have an important role in forest management. In the Ngudi Lestari Ranger Group in Kulonprogo Regency, a woman even becomes the group leader who coordinates various forest management activities. Meanwhile in Mengger Rejo Forest Farmers Group, women's participation in farming even has activities that are not distinguished from men's. The benefits or impacts felt by the women (and men) of the Ngudi Lestari Ranger Group are more on ecological and social benefits. Meanwhile, apart from the ecological and social impacts, the Mengger Rejo Forest Farmer Group also receives economic benefits that are equally felt by both genders.

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