

## Women and Peatlands

### Editorial

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### Articles

Manifesting Ecofeminism in Peatland Restoration: Policies, Actions, and Challenges  
*Myrna Asnawati Safitri*

Women Fighting Peatland Fire: Rural Women's Experiences in Central Kalimantan and Riau Provinces  
*Catharina Indirastuti*

Being Away from Purun: Women's Experiences in Peatland Area of Hulu Sungai Utara, South Kalimantan  
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*Purun* and The Bitter Realities of Women's Struggle in Peatland Areas  
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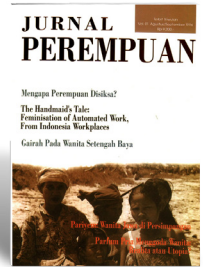
Women Village Facilitator Action on Economic Revitalization of the Women's Group: A Case Study in 3 Peatland Villages, Central Kalimantan  
*Nur Iman Subono, Andi Misbahul Pratiwi & Abby Gina Boangmanalu*

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## Contents

### Editorial

Women and Peatlands ..... iii-iv

### Articles

- Manifesting Ecofeminism in Peatland Restoration: Policies, Actions, and Challenges ..... 1-11  
*Myrna Asnawati Safitri*
- Women Fighting Peatland Fire: Rural Women's Experiences in Central Kalimantan and Riau Provinces ..... 13-23  
*Catharina Indirastuti*
- Being Away from Purun: Women's Experiences in Peatland Area of Hulu Sungai Utara, South Kalimantan ..... 24-34  
*Enik Maslahah*
- *Purun* and The Bitter Realities of Women's Struggle in Peatland Areas ..... 35-42  
*Taqiyuddin Ibnu Syihab, Yustina Ambarini Murdiningrum, Lukas Rumboko Wibowo*
- Women Village Facilitator Action on Economic Revitalization of the Women's Group:  
A Case Study in 3 Peatland Villages, Central Kalimantan ..... 43-56  
*Nur Iman Subono, Andi Misbahul Pratiwi & Abby Gina Boangmanalu*

## Women and the Peatland

Indonesia's peatland areas reach to 22.5 million hectares. It contributes to the 47% of the whole peatland area in the tropical region, and it is considered as a country with the widest peatland area in Southeast Asia. Therefore, the existence of peatland in Indonesia brings important meaning to the global environmental sustainability. Unfortunately, the discourse around peatland rarely surfaces except during certain situation such as during forest and land fires. The emerging discourse on peatland generally evolves around ecological and economical aspects, though its existence has such bigger dimensions, from social, cultural, political, including gender justice dimension. With such extensive peatland areas in Indonesia, it is obvious that peatland has important meaning to the lives of Indonesians, especially for people who live around the peatland area, including women.

As an environmental issue, discourse on peatland has been deliberately discussed for quite some time, at least since the adoption of *the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat* (Ramsar Convention) in the city of Ramsar, Iran, in 1971. Ramsar Convention has emphasized on the importance of prevention from destruction, prevention of the loss of wetland, and the importance of preservation of wetlands as part of sustainable development. Indonesia has already ratified Ramsar Convention since 1991. International Union for Conservation of Nature (IUCN) classify peatland as a valuable earth's ecosystem due to its highly regarded function for biodiversity sustainability, as source of water, prevention of flood, and to overcome climate change.

Ecofeminism generally identifies the roots of natural destruction, and oppression of women as the result of patriarchy dominance. Inline to Karen J. Warren's view, the hierarchical and oppressive of patriarchy's point of view have oppressed both the nature and women. The destruction of peatland area in Indonesia has happened since the New Order regime, and one of the examples of this was the *Rice Mega Project* that has turned the peatland area in Kalimantan into rice fields. Aggressive development, and disasters such as forest and land fires, that have been going on for decades have accumulated and became legacy of problem to the peatland area in Indonesia that we are facing today.

The biggest land and forest fires in Indonesia in the middle of 2015 was a warning and important threatening signal to the peatland area in Indonesia. This

was then marked by the establishment of the Peatland Restoration Agency (Badan Restorasi Gambut-BRG) by the government of Indonesia in 2016. BRG is a non-structural agency that reports directly to the President that is given mandate to coordinate and facilitate peatland restoration measures in seven provinces, namely: Jambi, West Kalimantan, Central Kalimantan, South Kalimantan, Riau, South Sumatera and Papua. BRG's peatland restoration concept acknowledges that land/ soil restoration cannot be implemented solely in its ecological-geological dimension, but it should also consider social recovery of the community as part of the peatland ecosystem. Consequently, then women should also be both beneficiaries and agent in the restoration process.

Women have big interest for environmental sustainability. Maria Mies and Vandana Shiva, ecofeminism thinkers and activists, argue that women have big stake in environmental sustainability. It is because the gender role charged to women to do parenting and daily life management. In order to give sufficient nutrition for their children and/or family, getting clean potable water, and to meet all daily needs, women would have the interest on the availability and sustainability of natural resources such as water, air, land, and flora and fauna.

Women who live in peatland area are clear depiction of the interrelation between environmental destruction and its consequence to women. One of the local economic and cultures in peatland area in Kalimantan is *purun* weaving (*purun* is one type of grass that commonly grows in peatland area and often used as weaving material). The skill of *purun* weaving is generally done by women, and are usually done during women's spare time of their work in caregiving in their household or family. The destruction of peatland area has caused the diminishing of *purun* that previously grew wild in nature around villages. When *purun* is no longer grow around the village, the women traditional weavers have to procure *purun* from outside of their village, or have to incur extra cost to purchase *purun* for their handicraft materials.

Forest and land fires in peatland areas have cause economic loss and trauma to the community. Women are the group who experience the direct impact of land and forest fires in their daily lives such as draining of water source, destruction of farms, and the extinct of

local natural resources such as fish. Despite of that, the forest fire's prevention programs still disregard women. Though when the fire happens, women also participate in extinguishing fires whether in the farm fields or housing settlement. Women also have to find measure to address the following impacts of forest and land fires to their families. For example, women have to find ways to prevent smoke to get into their homes, or they have to take care of family members who get ill due to the smog coming from the forest and land fires.

The experience of peatland destruction and its impact to communities and women amplify ecofeminism argument such as Ynestra King. King argue that the destruction and/or oppression against human being is rooted in the hierarchal and unequal relations. Similar to the unequal power relation between men and women, the impact of peatland area destruction, forest and land fires, smog, and many others, also describe the power relation in the existing management and use of peatland areas.

Nevertheless, ecofeminism does not stop on the argument of the interrelation between the exploitation against nature and the domination towards women. Ecofeminism also views women's agency in restoring and preserving the environmental sustainability. The experience of women facilitators in the Desa Peduli Gambut (villages that involve in peatland restoration program) show the political women empowerment in finding solutions in addressing structural and cultural challenges in the peatland restoration processes. Ecofeminism offers a transformation to the human perception that act superior against of the nature, through gender justice lenses. Similar call then is also proposed through the knowledge that are presented from women's experiences, as well as their efforts in restoring and maintaining the peatland areas, in the current Jurnal Perempuan's edition. Have a great time exploring! (**Atnike Nova Sigiro**)

Abstracts Sheet

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Myrna Asnawati Safitri  
(Badan Restorasi Gambut dan Universitas Pancasila,  
DKI Jakarta, Indonesia)

**Manifesting Ecofeminism in Peatland Restoration:  
Policies, Actions, and Challenges**

Kode Naskah: DDC 305  
Jurnal Perempuan, Vol. 25 No. 1, Februari 2020, hal. 1-11, 24 daftar  
pustaka

Degradation of peatland ecosystems occurs as a result of excessive exploitation leading to peat drainage and fires. This was influenced by a masculinity perspective in resource tenure and utilization. Ecofeminism presents a different perspective on narratives and inter-relationships of human with nature, including the place of women in them. Injustice that befalls women occur due to unequal power relations in the control and utilization of resources in the peatland ecosystem. This paper discusses the Government of Indonesia's efforts to reduce gender injustice through Peatland Restoration's policy. Two policies are discussed here, namely the Social Safety Safeguard and Peat Cares Village Program. It is concluded that women's participation must be able to resolve the imbalance of power relations among women as well as between gender. This requires sufficient time and everlasting education.

Key words: Ecofeminism, power relation, peatland, peatland restoration.

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Catharina Indirastuti  
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**Women Fighting Peatland Fire:  
Rural Women's Experiences in Central Kalimantan  
and Riau Provinces**

Kode Naskah: DDC 305  
Jurnal Perempuan, Vol. 25 No. 1, Februari 2020, hal. 13-23, 1 grafik, 9  
daftar pustaka

Forest and land fires that repeatedly burned millions of hectares of peatlands in Indonesia were the result of decades of unsustainable peatland governance and management. Rural women and men living on peatlands have different experiences of forest and land fires. Intersectionality between gender and classes, geographical locations, and ethnicity further adds nuances to these different experiences. This article explores women's experiences of fighting forest and land fires in three target villages in Central Kalimantan and Riau provinces where the Peat Care Village Program was implemented by the Peat Restoration Agency. The network of power relations that women must endure and a priori arguments on gendered roles and responsibilities have weakened women's position in fighting land and forest fires. Women do not have access to resources to prevent and fight against land and forest fires, while in reality firefighting activities require the involvement of women, particularly when they happen on their land or living space. Women's experiences of facing forest and land fires are reflected using the feminist political ecology approach to highlight the multifaceted impacts on women.

Keywords: forest and land fire, intersectionality, peat villages, women's access.

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Enik Maslahah  
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**Being Away from Purun: Women's Experiences in Peatland  
Area of Hulu Sungai Utara, South Kalimantan**

Kode Naskah: DDC 305  
Jurnal Perempuan, Vol. 25 No. 1, Februari 2020, hal. 25-34, 4 tabel, 10  
daftar pustaka

*Purun* is a typical plant that grow in peatland area that has important functions for people living in peatland area. The availability of *purun* is now decreasing due to changes in land management and environmental destruction. Almost all of the plantation commodities in the peatlands area, management of peatlands in the forestry, agriculture, plantation and fisheries sectors apply exploitative and pragmatic methods, while ignoring environmental sustainability. Furthermore, environmental damage also occurs due to disasters such as forest and land fires that often occur in peatland areas in Indonesia. One of the damages happen to peatland area is the damage and scarcity of *purun*. As users and beneficiaries of *purun*, women become the affected group that face the impact of peatland destruction. This paper describes the experiences and efforts of women in peatland areas to restore land and restore the existence of *purun* in their villages.

Keywords: women, peatland, *purun*, peatland restoration.

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***Purun* and the Bitter Realities of Women's Struggle in  
Peatland Areas**

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Jurnal Perempuan, Vol. 25 No. 1, Februari 2020, hal. 35-42, 2 gambar, 21  
daftar pustaka

This paper aims to examine the elimination process of traditional conservation that has been built for many years by women on peatlands. This article reveals the struggle and multiple burdens of women in conservation, to do reproductive and productive work in the midst of clashing interests in peatland area. Research conducted shows that there is a shift in the mode of production from subsistence toward exploitative hegemony by capitalistic interests, as a product of modern scientific knowledge. Corporations compete for peatland areas to accumulate capital which then threatens the *purun* and the *purun* weaving community of women. This has not only led to degradation of the *purun* ecosystem but also the loss of source of life and cultural identity for the *purun* weaving community. From an ecofeminist perspective, investment policies and regimes with minimum controls have systematically destroyed peat ecosystems, resulting in economic powerlessness and impoverishment of women.

Keywords: *purun*, women and natural resources, women and peatlands.

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**Women Village Facilitator Action on Economic  
Revitalization of the Women's Group: A Case Study in 3  
Peatland Villages, Central Kalimantan**

Kode Naskah: DDC 305

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grafik, 17 daftar pustaka

Peatlands play an important role in the ecological and economic aspects. Peatlands degradation in various regions in Indonesia brings economic issues, especially for women. The involvement of women in

the peatland restoration program as a strategy needs to be reviewed. This study focuses on the involvement of women in the peatland restoration as a village facilitator, mainly on aspects of economic revitalization. This study focuses in 3 Villages in Central Kalimantan Province, Jabiren Village, Tumbang Nusa Village, and Gandang Barat Village. The main question of this research is how are the actions, challenges, and strategies experienced by women as village facilitators in DPG program. Based on in-depth interviews with relevant actors and literature studies, this research finds, 1) the economic revitalization program conducted by women village facilitators build the economic resilience of rural women communities and changes the gender relations; 2) women village facilitators faced structural and cultural obstacles in their action; 3) the program is also the part of political actions for peatlands preservation.

Keyword: women village facilitator, peatlands restoration, economic revitalization, power.

## Women Fighting Peatland Fire: Rural Women's Experiences in Central Kalimantan and Riau Provinces

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### Abstract

Forest and land fires that repeatedly burned millions of hectares of peatlands in Indonesia were the result of decades of unsustainable peatland governance and management. Rural women and men living on peatlands have different experiences of forest and land fires. Intersectionality between gender and classes, geographical locations, and ethnicity further adds nuances to these different experiences. This article explores women's experiences of fighting forest and land fires in three target villages in Central Kalimantan and Riau provinces where the Peat Care Village Program was implemented by the Peat Restoration Agency. The network of power relations that women must endure and a priori arguments on gendered roles and responsibilities have weakened women's position in fighting land and forest fires. Women do not have access to resources to prevent and fight against land and forest fires, while in reality firefighting activities require the involvement of women, particularly when they happen on their land or living space. Women's experiences of facing forest and land fires are reflected using the feminist political ecology approach to highlight the multifaceted impacts on women.

Keywords: forest and land fire, intersectionality, peat villages, women's access.

### Introduction

The tropical peatlands are one of the ecosystems with a major role in regulating global climate. Peat has the ability to store a large amount of carbon, around 20 times more than the amount of carbon stored in ordinary mineral soils. On the other hand, without a sustainable governance, a peatland will affect significantly to climate change. The drainage of one hectare of peatland for land conversion has the potential to release 55 metric tons of CO<sub>2</sub>, equivalent to burning of 6,000 gallons of gasoline (pantaugambut.id 2017).

Dry peat fibers are also a combustible material. Once dry peat is burned, the fire will spread rapidly. A peat forest or peatland fire may burn for weeks or even months, because different from fire on mineral soil, the hotspots on peatlands are not always found on the land surface, but may penetrate deeper into the peat soils. Fires do not only burn forests, but also burn the rural community's farm land in peatland villages and scorched plantations that are used as the source of the community's livelihood.

Logging in peatlands areas and the drainage of thousands of hectares of peatlands through the construction of wide canals for massive land conversion since the 1980s—coupled with the slash and burn

method of land clearing—were a major threat to the sustainability of peatlands. Fires on dry peatlands could no longer be controlled and then the forest and land fires that eliminated hundreds of thousands to millions of hectares of peatlands occurred.

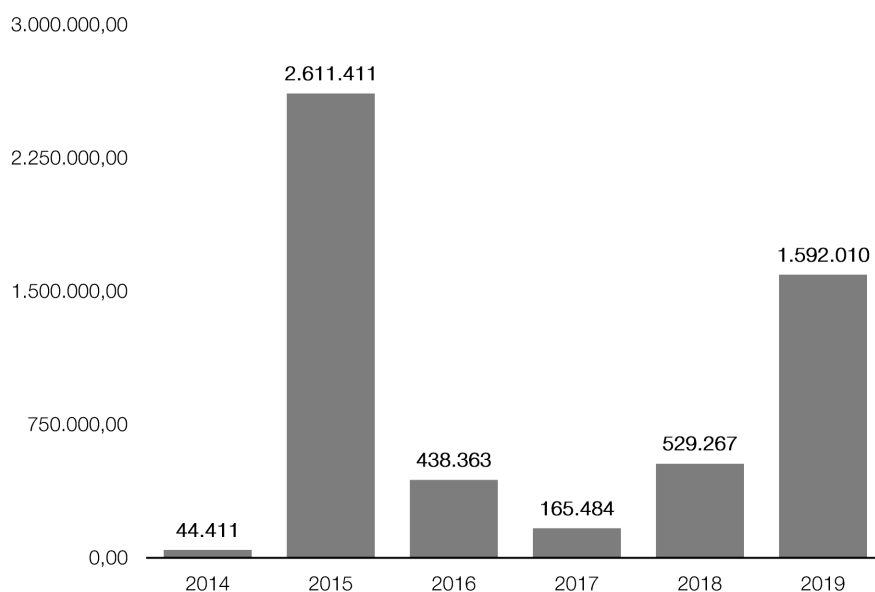
The use of burning method in land management is not the only cause of forest and land fires. Human carelessness when using fires in other activities, such as throwing away cigarette butts or the use of fire for hunting and fishing, were also could cause of forest and land fires. Other causes include the natural fire sparks during dry season. Drying peat has become worse as the change of global climate that cause a longer period of dry season.

Data from the Ministry of Environment and Forestry in 2019 presented in Graph 1 shows the increase in hectares of peat burned in the last three years since 2017. While it is not as large as the area of peatlands burned in 2015, this increase in area over the past three years needs to be carefully watched because the climate change also contributes to forest and land fires as the dry season becomes longer.

Forest and land fires are problems that in most of the time looms over peatlands. Every time the dry

season approaches, villagers living in peatland areas would imagine the high risk of fires that may burn their peatlands, including their arable land. Even when the arable land or village area are not burned, the dry season

still creates difficulties because haze will blanket the village's air space, changing the dry season to the 'haze season'.



**Graph 1. Trend in the Extent of Forest and Land Fires in Indonesia during 2014–2019**

Source: KLHK 2019 (Hardyanto 2020)

Meanwhile, peatland drainage also causes peat to lose its ability as a natural sponge to absorb water during the rainy season and to release it during the dry season. Consequently, disasters come consecutively to the peat villages whose peatland's quality are degraded. During the dry season, forests, plantations and peatlands are at risk of being burned, while during the rainy season, the villages located near peatlands are flooded.

The first major peat fires occurred in 1997. Since then, forest and land fires in some parts of Indonesia have been occurring nearly every year. The "haze season" becomes a new season that marks the weather in peat villages. However, it was the big fires in 2015 that really attracted global attention as the thick haze from the fires spread to neighboring countries. Protests from the neighboring countries and international community forced the government of Indonesia to be more serious in dealing with the haze disaster.

Women and men from different social groups have different experiences of interacting with the nature, particularly the peatlands, and also in dealing with forest and land fires. Robbins (2012) wrote that processes of human interactions with the nature are a gender-based one, meaning that men and women and men experience the environment differently and often have different access to and control over ecological systems, as a result

of their cultural and social roles that tend to lead to different things.

The different interactions that women and men have with peatlands are related to the differentiation of roles, positions and responsibilities between women and men, in both private and public spheres. As a result, vulnerability to disasters related to the environment also varies, it is gender biased, but it is also related to class, ethnic groups, and other things. This is in line with what Mia Siscawati stated that women are not a homogenous group, hence we cannot say that women are the most vulnerable group. Women from certain social groups may be the most vulnerable group (Gina 2019). Different positions make women and men from different groups have different access to and control over available resources, including natural resources, knowledge and information, finances, equipment and technologies, education to build capacity and skills, and other resources related to efforts to prevent and mitigate forest and land fires. This differentiation of access to and control over available resources leads to different vulnerability to the risk of forest and land fires.

Various planning and other activities carried out to prevent and mitigate forest and land fires at the rural level often overlook rural women who also have a living space on the peatlands. In fact, rural women have been

participating in peatland management and forest and land fire mitigation, both when fires burned their arable land and when fires approached their settlements. Those experiences should be taken into consideration in peatland management.

This article highlights the experiences of women living in peat villages that are prone to burning: 1) Sungai Rukam village in Enok subdistrict, Indragiri Hilir district, Riau province; 2) Buntoi village in Kahayan Hilir subdistrict, Pulang Pisau district, Central Kalimantan province; and 3) Paduran Mulya village in Sebangau Kuala subdistrict, Pulang Pisau district, Central Kalimantan province.

Central Kalimantan province has the second largest area of tropical peatlands in all of Indonesia after Papua, with 2.7 million hectares of peatlands, and the highest forest and land fire rate, with 134,227 hectares burned, in 2019 (Katadata 2019). Meanwhile, Riau province has the third largest area of peatlands after Central Kalimantan with 2.2 million hectares of peatlands, most of which have been converted to palm oil plantations. The villages focused on in this article are the villages that have directly experienced peat fires and have female community members going to the field to extinguish the fires during the dry season in 2019.

Data used in this article is the result of in-depth interviews with rural women directly involved in the mitigation of forest and land fires on their land and focus group discussions with women's groups in each of the villages. Data collection activities were carried out during the facilitation of the villages targeted by the Peatland Restoration Agency (BRG) in the Peat Care Village project. The project was implemented by Kemitraan-the *Partnership for Governance Reform*. Interviews were also conducted with members of the community-based fire management groups established at the rural level, called Masyarakat Peduli Api (MPA) and Masyarakat Sadar Api (MSA), as well as village government officials and public figures in the villages.

While not purely for research purposes, the discussions and in-depth interviews that were carried out with women and women's groups in the peat fire prone villages during facilitation can serve as a window to hear stories about how the women fought the fires that devoured their gardens and fields. Their stories are used to analyze more deeply the natural and social contexts encompassing the lives of women in peat villages, and offer ideas to make the experiences of the women and men as part of considerations in designing various peat management related programs.

### **Land Status and Vulnerability to Forest and Land Fires: Whose Land is Burned?**

Land status influences the model used to manage land in peat areas. Who owns the land? Who manages the land? Who owns access to benefit from the land? And who can determine what land management model will be adopted? Mapping the land status in peatland areas is not always easy as one plot of land can be managed by more than one individual with different levels of control.

Many of plots in the rural peatlands are owned by people from outside the villages. These land plots are not always managed and thereby susceptible to burning because of the overgrown shrubs. Unfortunately, when these unmanaged land plots were burned, the owners tend to neglect and they would even feel lucky because the land plots would be cleared and thereby can be cultivated and planted.

The neglect of the burnt land plots is a major problem in peat villages because the land plots are usually adjacent to a forest or rural people's arable land, making it at risk of getting burned. The land managers must monitor not only their own land plots, but also the surrounding land plots or areas.

Sungai Rukam Village was originally a coconut-producing village. According to one of the public figures in that village, during its heyday, coconuts from the village were exported to Thailand and Malaysia. The village's port was crowded transporting coconuts and the villagers were prosperous. In addition to sole coconuts, copra was also widely produced there. At some point, the local government issued a policy banning the export of sole coconuts due to a plan to develop local coconut-based industry—which eventually was failed to be realized. This policy resulted in the villagers losing their markets and the falling price of coconuts, and in the meantime Thailand and Malaysia were developing their own coconut plantations. The cost maintaining plantations and harvesting coconuts became higher than the coconut's selling price. Consequently, many farmers left their coconut farms to tap into other sources of livelihood. These coconut farms later were left unattended.

The unattended coconut farms are fully covered by shrubs. A large amount of money is needed to clear the farms and to replace the coconut trees with more profitable crops. Therefore, oftentimes fires are not seen as a problem because when a land plot full of shrubs burns, then the land would be cleared without spending money and the process is faster. Once the fire is

extinguished, the landowners who did not manage their land can immediately work on the land that is believed to be more fertile after burning. However, allowing forest and land fires creates a serious problem, that the fires in most of the time would spread to productive land cultivated by other farmers and burn their crops.

Not all uncultivated farms are left unattended. A landlord from outside Sungai Rukam Village, who owns up to a dozen hectares of land in that village, gave permission to several families to work on his unmanaged land. The families are mostly migrants from outside the village. One of them is Mrs. M, a 30-year-old woman with two children under five years old, who with her husband are working on a land plot owned by the landlord. The land plot that Mrs. M is working on with her husband is far from the settlement. Because the land plots are mostly far from the settlements area, the migrants who work as farm laborers usually live in semi-permanent houses that they built inside the farm areas. Some of the farm laborers do not have land in their own villages. Mrs. M only had one row of coconut trees that she had inherited from her family, and she sold them to buy a land plot in Sungai Rukam Village, which until recently she has not managed.

Under this system called *mengaron*, a farm laborer, such as Mrs. M and her husband, is responsible to clear the land, to plant, and to grow perennial crops on the land s/he borrows until it produces results. The types of perennial crops planted include palm oil, coconut and rubber trees. In the first five years, all the proceeds from the land would go to the farm laborer. After that, the farm laborer must share the proceeds with the landowner. But it actually takes five to eight years for a perennial crop to produce results. Farm laborers usually plant a portion of land with vegetables or other horticultural crops that can grow on peatlands in order to support their lives.

Working as a farm laborer does not make Mrs. M safe from the risk of forest and land fires, because she and other farm laborers work on land plots surrounded by unattended land plots—which are at risk of burning. Mrs. M had been working on the land plot for two years when the fire broke out in August 2019.

It is imaginable the loss that Mrs. M suffered when the perennial crops she had planted burned down, while she had no alternative livelihood except to work as a day laborer or cultivate the land from the beginning again. For farm laborers such as Mrs. M, letting the land burn is not an option. When a fire broke out in her vegetable field, Mrs. M refused to leave her house and land. She brought her children who were under five years old into the house when the fire began to devour her farm. Her

neighbors and MSA members also had difficulty asking her to evacuate to another area in the village. According to one of her neighbors, Mrs. M would not go to another area in the village if no one picked her up because she felt she was not part of the village community.

Mrs. M is a migrant who lives far from other villagers and the village center. She manages other people's land and has never participated in any activities in the village, including socialization about forest and land fires and haze. She is a representation of women who live in areas that are prone to fires, she manages a land but do not have access to available resources to prevent and to mitigate forest and land fires. She also comes from the geographically-marginalized and poor migrant groups.

To reduce the risk of forest and land fires on the uncultivated land plots, Sungai Rukam village is currently drafting a village regulation that can encourage landowners to manage unattended land plots in order to avoid becoming the source of fire. The village regulation is expected to regulate land monitoring and maintenance by landowners to reduce the risk of burning.

In other villages, different stories different land ownership status were found. Buntoi Village is a village with a majority of indigenous people of the Dayak ethnic. Their lands are predominantly family inherited, or locally known as '*Petak Pelaku*'. '*Petak Pelaku*' are fully owned by women (including the legality of the land), but usually are located in the villages where the husbands came from. The Dayak community in Buntoi have more than one farm that can be managed and thereby are resilient to forest and land fires.

Meanwhile, in Paduran Mulya Village, which is a trans-migrant village, nearly all of the villagers have at least two hectares of land per family. Slightly different from community in Sungai Rukam and Buntoi, the forest and land fires that broke out in Paduran Mulya village were closer to the settlement area, because the rubber farms were located not far from the settlement areas. This situation has led to greater involvement of women in forest and land fires mitigation because in some incidents told by the women villagers who engaging in firefighting, where most men were mostly away from the village when the fires broke out. The rural women who did not have access to firefighting training had to handle firefighting using limited equipment without personal protection gear. The risk of accidents in the short term and other long-term health risks that might arise must be borne by the rural women who fought the fires without protection gear.

## **Women Fighting Fires: Without Knowledge, Protection and Adequate Equipment**

### ***Paduran Mulya Village***

Paduran Mulya Village in Sebangau Kuala Subdistrict, Central Kalimantan, is now a quiet village. Some of the population left because earnings are difficult to find as the impact of peat fires that had consecutively happened since the big fires in 2015. The village, which was originally fertile and produced a lot of agricultural products, has experienced severe natural destruction since the surrounding forests were cleared. When forest logging was rampant, Paduran Mulya Village prospered because there was a large wood processing center that opened transportation routes, not only for forest wood but also various agricultural products. When the wood was used up and the nature was destructed, the market where the community sell their agricultural products has disappeared and fires broke out. Gradually young people began to leave the village. The absence of young people created another problem when the fires reached the settlement area, because many households consisting of elderly people that needed help.

The forest and land fires that occurred almost every year since 2015 have created trauma to Paduran Mulya community. Many of them felt frustrated in planting long-term crops—such as palm oil, coffee or rubber—because they were repeatedly burned. Furthermore, the spread of the fires to the housing areas has also caused trauma to women and children who were directly affected by the fires. Mrs. Y, who is currently living only with her husband, shared her experiences.

Large fires happened every year. Every dry season, there would be fires, everywhere. The fire that reached the [residential] location was the one in 2015, here everything burned, no one helped our house. The wind that was blowing was the rotating wind [a tornado], made it difficult to stop the fires. I pumped water while crying, because everyone was busy saving their own farms and houses. My husband was so busy putting out fires that he missed his meals that day. We sprayed our house [with water] to prevent it from being burned, but the fire had reached our roof. The fire was like an umbrella. I splashed water onto the house, while there was fire above me. At that time one of our children that were still living with us, after arriving from school he immediately joined in putting out the fire and almost passed out from missing his meal. Within one hour, the fire had spread. I did not get the chance to save one week's worth of rubber sap. The trees burned, many of them fell and died. I was so scared that I shivered, and I was finally evacuated. (Mrs. Y in 2019, Interview, 25 August)

There are quite many elderly in the community of Paduran Mulya. Quite often they live alone at the side of

rubber farms that pose larger risk of fires spreading to their houses. Mrs. W, a 60-year-old widower, has trauma of being trapped inside a house surrounded by fire. The fires destroyed two hectares of rubber farms that she owned; not a single tree could be saved.

Preparing shelter houses in villages that are prone to forest and land fires is important, particularly in villages with a large number of elderly. It is better to build the shelters in a free of shrubs area therefore it does not have potential to be burned, and also has sufficient water resources.

In addition to do mapping on peatlands areas that are prone to burning, it is necessary to map the villagers housing areas, including villagers that need special attention in the event of fires such as the elderly, pregnant women, and women head of households. Mapping to determine priorities is important given the limited resources available.

Forest and land fires that reached the residential area in Paduran Mulya required the the rural women to fight the fires themselves. The last farm fires occurred on Friday midday in August 2019 happened when most of the men were attending the Friday prayer. Most of the women of the village had participated in putting out the fire because they could not wait anymore. MPA members also involved to put out the fire, but the number of MPA members in this village was not big.

Seeing smoke from the street, 'how come the smoke is already thick?' I saw the children's father [her husband, an MPA member] was running while carrying equipment to the burning place to prevent the fire from spreading to the residential area or the forest... When I returned, I saw the smoke was thicker. I told my son, 'remove the cooker hose! I need to go across for a bit in case no one is there.' I went across and saw children were crying in fear. The girls who had never encountered such situation before were probably not used to it, and they were crying and screaming. We, the women, had to help our husbands because the fire was big. We carried water, helped people put out fire sparks, and splashed water onto the fire. When we splashed water onto the fire, the wind was blowing strongly towards us. The sparks flew to us, they felt really hot. We tried to make firebreaks quickly to prevent the fire from spreading. But because the wind was strong, the fire reignited. (Mrs. D in 2019, Interview 25 August)

According to Mrs. D, women should be equipped with knowledge about how to countermeasure fire and to be ready to act if a fire starts to approach residential area. A woman must make sure that her home, before she can go and helping to put out a fire in her neighborhood or her neighbor's house.

Mrs. D said, although she was the wife of an MPA member, she had never been involved in socialization and education processes about prevention and mitigation of forest and land fires. She had never received any training on safe firefighting technique using the firefighting equipment in her village. Firefighting is seen as a masculine activity and not as part of women's duties, while in reality women often have to directly involve in firefighting.

### **Sungai Rukam village**

The forest and land fires that happened in 2019 in Sungai Rukam village lasted for three months, from August to October 2019. In addition to the fires, the village was also blanketed by haze for months until the rainfall. These long-lasting fires destroyed the productive land, particularly palm oil and areca nut farms. The land plots were burned down because there were no close water resources to extinguish the fire, while the fire hose was too short to reach the water source.

Fire-affected landowners tried to extinguish the fires using limited equipment such as buckets and small tanks that could be carried. In addition to MSA members, landowners whose lands were not burned, had also participated in firefighting to prevent the fires from reaching their lands. The women also joined in the effort.

We were upset and disappointed during firefighting. The river was dry, it has already had canal blocks but [the river] was dry. So, even though it was blocked, there was still no water. We could only watch our farms burn. My farm was fully the farm. Now there is nothing left. There is no coconut, no areca nut, no palm oil. Our one-hectare farm has gone, it was our most productive inherited land. Now, even one coconut tree cannot be found. (Mrs. Y in 2019, FGD November 27)

Fire extinguishing in a vast area in Sungai Rukam could not easily be done as the water resources are limited during the dry season. The rivers and ditches are dried up; canal blocks that have been built seem useless. One plot to another are usually separated by a small ditch that is used to transport the harvested products. These ditches become the sources of water to extinguish fires. According to the farmers, these ditches only provide just a little water if the drought lasts more than six months. During that season, the wind would carry sparks that quickly spread from one plot to another, leaping over the small ditches beyond control.

Some were looking for water by digging into ponds. When we made the ponds together, the fire passed by us... so we had to leave our farms, rather than losing our lives, rather than to be dead. The farms can be rebuilt. I dug together

with my husband. Neighbors did not help, each of us were trying to save our own lands. My farm was eventually burned down, kept burned. We use bucket when we found a bucket. We dug using the available limited tools. (Mrs. J in 2019, FGD 27 November)

Women who directly involved to put out fires often work without proper protection equipment. The number of masks distributed through the village office or the local health center are limited, and priorities were given to children, the elderly, and men directly went to the field. Eventhough directly involve in firefighting, women usually do not get any masks and only use veils used as masks to cover their mouths and noses. Women sacrifice themselves to be the last person to wear a mask in the family.

### **Buntoi Village**

In Buntoi village, aside from afraid of losing productive crops, the community are also afraid of regulation of sanction of compensation that is imposed by the village authorities if fires coming from their farms spreads to other people's farms. Farms in Buntoi village are mostly planted with perennial crops, such as rubber, which do not need to be cleared using fire. For this reason, the women do not agree with the sanction of compensation because they would never intentionally burn their land.

We do not know where the fires came from. My husband was at home. Suddenly we saw smoke from the farm. He immediately went to the farm; it was really on fire. He came back home to get equipment. I followed after him, bringing everything that would be needed. He was assisted by MPA, quickly put out the fire, but 100 trees had been burned. Since the farm was far from water [resources], we had to take water from a pipeline, and hoses that are up to 200 meters long were used. I also splashed water. I used a bottle to splash water [onto the fire]. We used whatever could be used to splash water. We were very surprised. We were trembling, anxious, and afraid that the fire would spread to other people's farms. Next to our farm was an oil palm farm, and a Chinese albizzia farm, which had started to be harvested. The farm owners said, "If [the fire] spread to my farm, I will put you in jail." Similarly, if his farm is on fire, and [the fire] spreads to our farm, we can also take the same action. That is why we feel most afraid to hear that our land is on fire. (Mother A 2019, FGD 14 December)

Apart from MPA members, most villagers who involved in firefighting, including women, do not wear any protection gear or use any equipment to extinguish fire. They work with any tool they can find. Women who involved in firefighting usually have to go back and forth to the location of the fire while continuing to do domestic chores including providing food and drinks for their husbands and people who help to put out the fire

in their land. The women have to procure fuel needed to run the engine and pay the people who are asked to help. When a forest and land fires breaks out and destroy their farms, the economic pressures felt by Buntoi villagers then multiply: the loss of livelihood crops, possible sanctions and imprisonment, and the requirement to pay extra costs to put out the fire.

Like women from other villages, Buntoi women who attended the discussion also said that so far women had never been involved in any socialization related to the forest and land fires, although they participated in forest and land fires prevention and mitigation.

Armed with this experience, Buntoi women feel they need to be involved in various disaster prevention and mitigation activities to allow them to have knowledge and contribute in forest and land fire mitigation activities. In addition, not every woman in the village has a male family member. Some have to be the head of the family after divorce, or because their husbands have to work outside the village. The absence of activities that involving women to help prepare the village to handle forest and land fires and mitigate the risks, has made women do not really ready.

Women participations in various activities to prepare the village in handling forest and land fires is an essential part of recognition to the active role women in various efforts to prevent and mitigate forest and land fires and haze. This recognition enables women to gain access to available resources, including access to information, support, and personal protection gear. Moreover, women participation must be done in order to develop disaster prevention and mitigation strategies that take into account women's experiences in dealing with forest and land fires and haze.

### **The Impacts of Forest and Land Fires and Post-Fire Livelihood Alternatives**

Forest and land fires bring many impacts to the lives of the rural community. The economic impact is the one they feel the most. The burned arable land and productive crops that are almost or already harvesting would directly bring impact to the community's livelihood. If the owner of the burned land has other land plots as the source of his livelihood, s/he will be able to survive. If not, temporary migration from the village becomes an option.

Migration is mostly opted by adult men, especially if their families still have small children. Unmarried young men and women who are ready to enter the workforce

(often since they are still in their teens) are also most likely to leave the village to look for jobs or to be farm laborers. When this happens, women then must be responsible for everything that must be done in their households.

The large number of men who leave the village to make a living bring a big impact, as seen in Paduran Mulya Village, due to a shift in roles. Adult women who stay in the village to take care of the house and livestock, and also to attend the land perform almost all of the roles that initially were performed by men. The flexibility of women's and men's roles are needed for their families to survive.

Just like in Paduran Mulya Village, in Sungai Rukam village, when a farm was burnt down, the productive crops were destroyed, and thereby the family no longer has a farm or any other source of income. Then the men or children who are old enough will look for paid work to make money, even from outside the village. Some work in companies around the village, and some migrate to Batam or Malaysia to become laborers.

When adult women and men migrate, those left in the village are women and men who are too young or too old to migrate, and also pregnant women and/or women with young children. For these groups, there were not many alternative sources of livelihood that they can get except from seasonal work that is sometimes provided by their neighbors in the village.

The loss of farms due to forest and land fires do not only affect the livelihoods of the landowners. Areca palm orchards in Sungai Rukam were also become a source of livelihood for poor women and men who peel the nuts for wages. Since the orchards have been destroyed, they have also lost their livelihoods.

Most women whose farms were burned down said that they wanted to replant their farms, but capital and seeds were often become an obstacle. They hope the government will help provide new seeds. If seed aid is not available, they will have to look for seedlings that are accidentally grown on another people's land. However, replanting perennial crops such as areca palm takes a long time—from planting to harvesting. That is why many women also worked on other people's farms for fulfilling their families' necessities.

In Buntoi Village, land fires have caused huge losses. Mother A said that she lost a hundred rubber trees from a fire. The amount of sap that could be tapped from one big rubber tree was about 1 - 2.5 ounces of sap per day, hence, she could get a total of 15–25 kg of sap from 100 trees a day. With a tapping frequency of about three

times a week, Mother A earned at least 1 million rupiah a month. The fire has caused her to lose income. When the farms was caught by fire, some of the farmers would replace the perennial crops with Sengon tree (*Chinese Albizia*) because the price of rubber was getting lower. However, Sengon (*Chinese Albizia*) cannot be used to support daily lives because it can only be harvested once after several years.

Forest and land fires do not only have impact to the loss of farmer's livelihoods. Other villagers must also be able to survive amidst the haze that envelops the village. During haze season, people usually still tap rubber every day, but not in the morning because the haze would limit visibility. Rubber tappers, either women or men, must wait until the sun is high enough to reach their farms. This situation would affect their income from tapping rubber, because in normal condition, to get more sap, rubber tapping is done since early in the morning.

Buntoi women have another source of income that they can rely on when rubber does not produce results, that is rattan woven that serve as the primary source of income during the dry season. Rattan farms that are located around the residential area are mostly safer from forest and land fires because they are continuously be monitored. However, if the rattan farms are located in the forest, which is far from the residential area, the risk of burning will be greater. When it is burned, the livelihoods of the female weavers will also be at risk.

The diverse livelihoods, both for income and food resources, allow villagers to adapt to the changing environmental condition in each season. In this regard, rural women play a major role in ensuring a more diverse livelihood.

The loss of primary livelihoods do not always cause villagers to be unable to support themselves, because there is always wage work that they can do to support their lives. However, the loss of primary livelihoods will eliminate the ability of those living in villages prone to forest and land fires, to fulfil other needs, such as children's education and family member's health.

In addition to the economic impact, the impact of haze on villagers' health is also one of the existing problems—but cannot always be seen. Nearly in all villages that have experienced fires, the villagers claim to be “immune” to haze caused by forest and land fires. Recurrent fires in the villages are the reason why they think that they are used to haze, particularly with regards to respiratory problems. Only a few people would go to health center or the village's midwives for treatment. Many suffer from

coughing, dry throat, or sore eyes, but refuse to go to the local health center.

Almost everyone experienced these problems. Dry coughs and sore eyes from haze. These did not only happen when we were outside the house, but also when we were at home because our house was not tightly closed, there were holes under the doors and between window panes, and holes intentionally made to allow air to come in. We tried to reduce the incoming smoke by always closing the doors and windows all day long. (Mrs. P 2019, FGD 13 December)

Active public health checks are not carried out by health workers in the villages, who only wait for reports. Health posts had been built in several villages, but according to village midwives, not many people would voluntarily come to have theirselves to be checked-up. At least in three villages that become the focus of this article, there were no posters or other educational tools on the dangers of smoke for health were seen at where the village's midwives had their practice, or at auxiliary community health centers in the villages. Unlike the forest and land fires in 2015, in 2019 only a small amount of aid was obtained, hence, masks were given to priority groups.

In 2015 we received many masks donation. In this 2019 fire, initially we only received 20 masks, mainly given to MPA members who went to the field. In the second phase, masks were distributed through the auxiliary community health center, but the number was not enough. Therefore, children, pregnant women and those who came to the community health center because they had suffered from respiratory infections or other respiratory diseases were prioritized. Villagers that did not meet these conditions had to buy their own masks. (Mrs. A 2019, FGD 13 December)

### **Gender Dimension in Peat Forest and Land Fire Prevention and Mitigation**

Economic reform programs that favor domestic and global market expansion - rather than a social welfare agenda, policies that respond to climate change, pressures associated to population growth and intensified geographical mobility, urbanization and commoditization, have reconfigured the patterns of natural resources use and governance, at both national and local level which have complex effects on people's lives (Elmhirst & Resurreccion 2008).

With regards to the issue of peat ecosystem degradation, which ultimately lead to recurrent forest and land fires, there is an existing long history that has come from various policies adopted by the Government

of Indonesia since the New Order era. One of them is the economic policy to ensure the achievement of food self-sufficiency. One of the extreme measures taken to exploit the nature for this purpose was to convert peatlands into agricultural land. The development program that began with large-scale logging of forests and continued with draining peatlands have brought negative impacts in the long run. The policy of the central government,

which at that time was unfamiliar with the functions and characteristics of peatlands, has changed the method used to manage peatlands and has threatened the sustainability of the peat ecosystem. Programs launched to promote the economy at the global and national levels ultimately have major impacts on environmental management at the local level and on the daily lives of the local community.



**Picture 1. Women groups in Pulang Pisau tried to extinguish forest and land fires in 2019**

The process of ecological change that occurs due to changes in the management of natural resources do not have the same impact on women as that on men. Rocheleau et al. (1996) offer an open framework that places gender as a critical variable to strengthen access and control, which interact with classes, castes, races, cultures and ethnicities. These variables sharpened the ecological change, which should be the result of women and men's struggle to maintain an ecological life, and becoming the future of every community to achieve "sustainable development" (Rocheleau et al. 1996, p.4), focusing on three key themes: gender-based environmental knowledge, gender-based environmental rights and responsibilities, and gender-based grassroot and eco-political activities.

Gender is part of a multidimensional subjectivity<sup>2</sup>, consisting not only of class, caste, race, culture and

ethnicity, but also place and development practices. In this discussion, specifically about women and peat forest and land fires, I would like to underline two topics of focus of feminist political ecology: gender-based environmental knowledge and gender-based environmental rights and responsibilities.

Women's knowledge in managing natural resources within the peatland areas have not been considered in the efforts to mitigate forest and land fires, particularly women from lower economic classes who work at arable land that is not theirs.

Women's attachment to the nature makes them to consider various elements of nature. Women's observation about what happens to peat ecosystems shows sharpness due to women follow the changes in the nature on daily basis (Indirastuti & Pratiwi 2020). Thus, in observing the changes of nature, especially on

peatlands, women also have the sharpness to see the changes in peat ecosystems that mark an increased risk of fires and also floods. Involving women in monitoring peatlands, especially in areas where women interact a lot with peatlands, would strengthen the village resilience to peatland fires.

The web of power that encompasses the lives of women farm laborer, which starts from the power relations that exist between women and men in the smallest scope, the family, marks the position of women who, in the threat of disaster, still prioritize other people besides themselves in meeting needs related to forest and land fires. The unequal power relations between women from the farm laborer group and those from the landowner group are clearly illustrated. The method used by the landowners to manage their land is to let shrubs overgrow and burn on the land because this will benefit them. Whereas such method will make women from the farm laborer group more vulnerable to forest and land fires because they live in the middle of a stretch of land that is at risk of getting burned.

At the village level, the mapping of land based on the risk of fires has not yet fully taken into consideration the voice of farm laborers. While they are the group with little farm capital, then will be difficult to survive over forest or land fires. Women from farm laborer households must bear heavier burdens because they still have to meet family needs.

Furthermore, Rao (1991) as quoted by Elmhirst (2008) stated that to understand the linkage between gender, the environment and development, then a contextualization on women's lives must be done—because women respond dynamically to the complex environmental realities. According to him, it is also necessary to consider how women enter into and engage in social relations with men in social institutions that depend on nature, and not use *a priori* perceptions about women's roles.

Exploration to women's experiences in mitigating forest and land fires shows that women have lost their rights to defend themselves from the impact of forest and land fires. The benefits of the existing policy and protection schemes have not yet been felt by women, particularly the women farm laborers. The right to adequate knowledge, skills and equipment to prevent and extinguish fires is exclusively given to men. This have made women farm laborers in peat villages to experience multi-layered vulnerabilities in the midst of forest and land fires and haze disaster.

## Conclusion

Power relation and the governance of natural resources in peat areas greatly influence the risk of the occurrence of forest and land fires and the vulnerability of the people living in those areas. Ecological destruction that cause forest and land fires can be seen as the result of peatland management that failed to incorporate the principle of peat sustainability than has been conducted for decades. The economic reform policy adopted during Soeharto era, which led to changes in the environmental governance on peatlands, have caused massive ecological destruction. At the local level, peat drainage that continue for decades have lead to the degradation in the quality of peat ecosystems. Women groups who live in the midst of the complexities of peatland power relation and governance must bear the consequences of these exploitative development programs.

Looking their interaction with the forest and land fires in the peatlands, the experiences of women are not homogenous, as told by the stories of women in three peat villages above. Intersectionality between gender, economic classes (land owners and farm laborers), ethnicities (native and non-native) and even geographical location on peatlands (the locations of the residence and the land) provide different experiences in interacting with nature—including how each group tried to prevent and mitigate peat forest and land fires. They had experienced different physical, economic and social vulnerabilities due to forest and land fires and the haze that happened to their villages. Through understanding the various experiences of women affected by forest and land fires, gender-equitable strategies and approaches can be formulated to prevent and mitigate peat forest and land fires.

In patriarchal culture, women are not positioned as a group that must be involved in efforts to prevent and control peat forest and land fires. The justification used exclude women is the perception that this issue is a heavy burden and high-risk issue and women are considered to be incapable. However, from the exploration at the village level, it was found that women had directly involved in firefighting. There were many situations where women felt they must be involved. Restricting women's access to available resources to prevent and mitigate forest and land fires is actually detrimental to women, because they do not have knowledge about equipment and thereby cannot protect themselves well from fire hazards. They do not have any control at all of the various steps that can be taken to prevent and mitigate forest and land fires.

Disclosing the paradigm that places women and men in a rigid differentiated roles and responsibilities could provide opportunity for change in more fluid gender relations. The fluidity of role must be made possible when ecological changes have affected the existing gender order that exist in private and public spaces. Women, of different groups, should have space to play diverse and safe roles when ecological changes would affect their daily lives.

In efforts to prevent and mitigate forest and land fires, women and men of different community groups in a village must 1) be given equal space to obtain access to various available resources; 2) participation in the planning process of the forest and land fires prevention and mitigation; 3) have control in determining measures to be taken to prevent and mitigate forest and land fires. Therefore, efforts to prevent and mitigate forest and land fires would benefit all levels of community members that live in the peat ecosystems.

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## End Notes

- 1 A 'Petak Palaku' is a plot of farm land traditionally given to a bride as one of the dowries.
- 2 Subjectivity in feminist political ecology developed from the thought of Judith Butler. Elmhirst (2008), following Butler's thought, emphasizes the importance of gender performance – how masculinity and femininity are played to achieve the desired ontological effect. This approach allows masculinity and femininity to be seen as a process: fragmented, regulated for certain conditions and may change under other conditions (provisional), and forged in the interplay between cultures, classes, nationalities, and other fields of power, and particularly, according to Butler, within the framework of existing rules such as normative heterosexuality.



### **Expression of Gratitude to Reviewers**

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Jurnal Perempuan (JP) is a quarterly interdisciplinary publication in the English language that aims to circulate **original ideas in gender studies**. JP invites critical reflection on the theory and practice of feminism in the social, political, and economic context of Indonesian society. We are committed to exploring gender in its multiple forms and interrelationships.

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