INDONESIAN JOURNAL OF SOCIAL AND ENVIRONMENTAL ISSUES (IJSEI)
Journal Homepage: https://ojs.literacyinstitute.org/index.php/ijsei
ISSN: 2722-1369 (Online)
Research Article

Volume 5	Issue 3	December (2024)	DOI: 10.47540/ijsei.v5i3.1622	Page: 265 – 275

Gendered Scientization of Environmental Degradation: Countering Gender Stereotype of Village Women in Lakardowo, Indonesia

Aulia Izzah Azmi[1], Vita Lutfiah[2]
[1]Department of Sociology, Universitas Indonesia, Indonesia
[2]Institute of Human Rights and Peace Studies, Mahidol University, Thailand
Corresponding Author: Aulia Izzah Azmi; Email: auliaizz29@gmail.com

ARTICLE INFO

Keywords: Environmental Degradation; Gendered Scientization; Village Woman.

Received : 28 August 2024
Revised : 26 December 2024
Accepted : 28 December 2024

ABSTRACT

This research aims to explore the gender dimensions of the use of science by the women's movement to respond to environmental injustice in Indonesia. Previous studies have explored the vulnerability of village women to environmental degradation due to their multiple roles as domestic workers, farmers, and nurturers. It indicated the weak position of women affected by environmental conflict. However, the concept of gendered scientization highlights how the turn to science in dealing with environmental threats might result in gendered opportunities and challenges in collective mobilization by citizens. To deeply analyze and categorize the result, the method used in this study is thematic analysis. The data collection techniques used were in-depth interviews, focus group discussions (FGDs), and documentation of secondary data related to the study. The results show that women in the Lakardowo Village are driven by feminine urges and generational concerns to protect the environment to mobilize an ecological movement to protect their land. Others found it important to arm themselves with science when the broader social discourse portrayed contamination concerns as stereotyping women as overreacting due to their scientific illiteracy.

INTRODUCTION

The development of private industry located in rural areas has both positive and negative impacts on society. For the community, the presence of a factory can increase society's survival from an economic perspective, such as providing employment opportunities for people who live close to the factory area, so that it will automatically reduce the unemployment rate. On the other hand, the existence of industry could cause negative effects that are detrimental to society, one of which is the sustainability of natural resources.

Basically, the natural environment provides resources that can be utilized and managed sustainably by humans. In the rural context, the fulfillment of daily needs is obtained through the management of natural resources. For example, food fulfillment is obtained through agricultural activities and drinking water through groundwater. This shows the importance of preserving the natural environment as a source of meeting basic human needs.

One of the natural resources that holds a crucial position in society is water. According to Jain (2001), water is a natural resource whose demand will never run out due to its use at the micro and macro scales. Several studies have shown that water is a resource that drives the community's economy and a source of domestic needs fulfillment.

Women are often the main actors in fulfilling domestic needs. For example, ensuring the consumption of family needs is fulfilled, maintaining the cleanliness of the residence, and raising children. Some literature suggests that the tendency of women as actors in the domestic sphere is due to the binary division of labor that creates an invisible boundary between the roles of men and women. However, from a structural point of view, women have better abilities in resource

management than men so they tend to hold dominant roles in the domestic sphere.

Natural resource management that tends to be carried out by women is also intertwined with how women basically have connections with these resources. For example, in terms of utilizing water. Water is a public necessity that is utilized in large quantities for daily needs such as bathing, washing, and cooking. Water is "a giver of life" and the first environment for a new life is inside a woman's body; as a result, women and water have a special bond and women have a responsibility for taking care of the water (Anderson et al., 2013; McGregor, 2009, Robertson, et.al., 2022).

In driving the community's economy, women are often active actors in the dynamics. Several studies have shown a tendency for women to take on traditional resource management roles such as farmers in fields and community gardens (Sempertegui, 2019; Shiva, 1999). These roles encourage women to understand natural dynamics which are also used to predict the success of their work. This simultaneous interaction is women's capital to maintain sustainable management of natural resources.

Women's involvement in driving the economy occurs in Lakardowo Village, Indonesia. Lakardowo is a village with promising agricultural potential. About 95% of Lakardowo's people are farmers of corn, chili, eggplant, and rice. The area of wetland farming in Lakardowo village is 123 ha. Most of the wetlands are utilized by the community for the cultivation of plantation crops such as chili, and rubber, followed by food crops including rice, corn, and then horticultural fruit crops. This makes Lakardowo Village a village that relies heavily on natural resources to run the village economy to meet the domestic needs of each individual.

However, since 2016 Lakardowo residents have been troubled by the operations of a waste management company when residents observed waste transported by a truck labeled by the company scattered on the road because it was not properly padlocked when heading to the company. At the same time, local residents began complaining about well water that changed color and smelled foul. As a result, residents can no longer utilize well water for their daily needs as before.

Deteriorating environmental conditions prompted a women's group to mobilize an environmental awareness movement called Green Woman (Gerakan Lakardowo Mandiri). This movement is a response to environmental pollution that affects people's livelihoods. Basically, this movement is a representation of women who want a solution to the problems that occur in Lakardowo Village.

However, unlike other social movements (Dalal, 2020; Fletcher, 2017; Mikkonen, 2020), this movement is based on an understanding of science and involves women directly in its activities. The Green Woman movement does not only focus on action resistance but also on the production of knowledge about pollution. Through scientific activities, this movement conducts data analysis and develops strategies for mass mobilization, and recruitment of members.

This research further explores the role of science use in the women's movement. Some previous studies have shown social movements as a form of group representation and individual collective consciousness. On the other hand, social movements are also associated with masculine activities. In this study, the researcher elaborates on the feminine urge and awareness to reproduce knowledge as an integral part of social movements.

This research is based on the previous research conducted by Kimura (2017). Kimura proposed gendered scientization terms to further analyze the gendered challenges of the scientized collective mobilization by exploring how scientific organizations increasingly seek to frame issues. Scientifically and are increasingly seen as conducting science. Kimura also mentioned that gendered scientization refers to the condition when many women participating in science organizations see science as tools to organize their unrest on environmental pollution.

Kimura's (2017) theoretical foundation opens up new questions about gendered scientization. Kimura considers that science and social movements must have clear boundaries. Kimura argued that women also understood activism to be a highly masculinized space incompatible with the feminized caretaker role they had adopted, which motivated their involvement in citizen science in the first place. In the context of Kimura's findings, social movements are considered irreconcilable with science. The different domains of these two conceptions encourage the formation of separate

spaces between science and social movements so that the manifestations of their actions are different.

In building the literature review, I refer to the studies of scientization (Kimura, 2017; Williams, 2019; Blacker et.al, 2021) and feminist political ecology (Ojeda et.al, 2020; Leder et.al, 2019; Sultana, 2021). In confronting environmental and health threats, citizens often create counter-expertise to disrupt mainstream discourses that deny citizens' concerns and embodied experiences of ecological and bodily harm. Starting from these confrontation efforts, I define the "counter-expertise" as knowledge that is mobilized by local communities which needs to be reproduced from time to time.

Historically, social movements led by women have been at the vanguard of the fight for social reform, environmental justice, and gender equality. Collective public action is a common strategy used by these movements to confront systemic challenges that impact women and marginalized communities. However, the incorporation of science into these movements brings with it intricate, nonlinear dynamics shaped by discrimination, gender norms, and stigma. These elements are examined in this literature along with any research gaps that are found.

Women's social movements demand policy changes and increase awareness through open protests, petitions, and advocacy campaigns. Such public demonstrations are crucial for energizing neighborhoods and drawing attention to injustices. One prominent example of how women's public action may have a large impact on the environment and society is the Chipko Movement in India, where rural women organized to fight deforestation (Shiva, 1989 cited in Jain, 2019). In a similar vein, Tarrow (2011) and Moghadam (2003) highlight that, in spite of major political and societal barriers, women's groups frequently concentrate on using public action to bring about change.

Social movements adopt scientific knowledge selectively to support their advocacy needs, leading to the incoherent integration of science in their strategies (Kimura, 2017). The selective adoption sometimes reinforces existing stereotypes and stigma against women, portraying them as less competent in scientific discourse. Gender roles and discrimination further complicate women's participation in these movements, as they often face societal expectations to prioritize domestic responsibilities over public activism (Blacker et al., 2021). Science and social movements frequently have a complicated and non-linear relationship. The movements integrate the science incoherently if they selectively accept it to serve their advocacy goals. Kimura (2017) also talks about how local communities impacted by health and environmental risks generate counter-expertise, or knowledge that is mobilized to refute dominant scientific discourses that minimize people's concerns. The validation of the lived experiences of impacted communities and the provision of a counternarrative to mainstream scientific viewpoints depend heavily on this counter-expertise.

The participation and credibility of women in science-based social movements are sometimes undermined by stigma and preconceptions. These misconceptions have the potential to reduce the significance of women's contributions and cause their voices to be excluded from scientific discussions. Perceptions based on gender frequently portray women as being incapable of the impartiality and reason needed for scientific investigation. According to Fox (2001), stereotypes have the potential to dissuade women from pursuing scientific pursuits and to restrict their ability to participate in scientific research and activism.

An essential framework for comprehending the gendered aspects of environmental concerns is offered by feminist political ecology. Research by Sultana (2021), Leder et al. (2019), and Ojeda et al. (2020) highlight how gender, environment, and power are intertwined. This viewpoint emphasizes how women are especially vulnerable to environmental deterioration because of their jobs as carers, farmers, and domestic workers. It also highlights their special ability to organize for environmental justice by utilizing both scientific understanding and firsthand, locally acquired wisdom.

Moreover, gender biases in science and academia have long been a significant barrier to women's full participation and contribution to scientific research and advocacy. These biases manifest in various forms, including underrepresentation in STEM fields, lack of recognition for contributions, and limited access to education and professional networks. Women are significantly underrepresented in Science,

Technology, Engineering, and Mathematics (STEM) fields. The disparity is evident in the educational pipeline to professional careers. Fox (2001) noted that despite an increase in women earning degrees in STEM disciplines, they are still less likely to pursue advanced degrees or careers in these fields compared to their male counterparts. The underrepresentation not only limits the diversity of perspectives in scientific research but also perpetuates a cycle of exclusion, where fewer role models and mentors are available to support aspiring female scientists (Fox, 2001). Even when women succeed in entering STEM fields, they often face a lack of recognition for their contributions.

Rosser (2012) discusses how women's scientific work is frequently undervalued or overlooked in comparison to that of men (Jiang, 2021; McKinnon, 2020; Casad, 2021). The bias is reflected in fewer awards, grants, and high-impact publications for female scientists, which can impede their career advancement and visibility in the scientific community. Additionally, women are less likely to be invited to speak at conferences or to hold leadership positions in scientific organizations, further marginalizing their voices in the field (Rosser, 2012). Access to quality scientific education and professional networks is crucial for a successful career in STEM. However, UNESCO (2017) shows that girls and women often face systemic barriers to education in science and technology. These barriers include cultural stereotypes that discourage girls from pursuing STEM subjects, a lack of female role models, and inadequate support systems within educational institutions. Moreover, even when women enter the STEM workforce, they often lack access to professional networks that are vital for career development, mentorship, and collaboration. These networks are typically dominated by men, making it challenging for women to find support and opportunities for advancement (UNESCO, 2017).

Furthermore, the role of informal, indigenous, and experiential knowledge in women's environmental advocacy is underexplored. Women's experiential knowledge, often derived from their roles as domestic workers, farmers, and community leaders, provides valuable insights into sustainable practices and environmental stewardship. Therefore, this research investigates how women combine scientific knowledge with local wisdom and how this integration enhances their advocacy efforts.

This paper focuses specifically on the scientization to the collective mobilization in which lay citizens frame social issues in a techno-scientific manner and the will to participate in the creation of scientific knowledge themselves. People without credentialed scientific knowledge are at a considerable disadvantage in a technocratic system of governance in which science is seen as the most legitimate and objective basis for environmental and health decision-making. The excitement about citizen science stems from the promise that it can level the playing field and bring democratic ideals of inclusion and equality into the techno-scientific domain.

MATERIALS AND METHODS

This paper is primarily based on interviews with four women activists in environmental injustice, two ENGO workers, and a scientist in Lakardowo Village, Indonesia. This fieldwork study was conducted in a year (2021-2022). We applied constructive epistemology to sort the participants (Clarke, et al, 2020). We'd like to see diverse experiences on how women reacted to environmental pollution. Hence, we conducted interviews with women activists who lived in four different hamlets of the village.

During a year, we conducted in-person interviews with Mrs. SM who was the leader of the Green Woman Movement, and also one of the people who lived close to the polluted well. Mrs. SM showed me the location of the pollution that occurred in the residents' wells and around the company area. We also met Mrs. JM who also participated in the movements. She was a chili farmer and the one who was inventing a way to infiltrate raindrops into drinkable water. Mrs. JM shared her experience of witnessing her crops polluted by fly ash. She even showed us her farm which has healed in a month. To get more information about water pollution, We met two housewives who also participated in the movements named Mrs. PI and Mrs. RM. Mrs. PI and Mrs. RM spent most of their time in the household. Mrs. RM was also the one who realized the oil was polluting in her bathroom. On the other hand, Mrs. PI is the one who conflicted with her family who worked for the company. We aimed at the geographical spread

of four hamlets at Lakardowo Village. We also conducted an in-person interview with two NGO workers and scientists of ECOTON. They provided me with information on previous research conducted in Lakardowo Village.

The interviews were mostly conducted in the ENGO's office and the participants' homes and were usually 45 minutes to 1.5 hours in length. In many cases, people other than the main interviewee joined the conversation. All interviews were conducted in Javanese and Bahasa. Interviews were mostly unstructured, with interviewees leading the conversation, but also included standardized questions about the knowledge distribution, local beliefs, scientization process, and the rise of the movement during a year.

Interview transcripts and textual materials were analyzed for salient themes that described the participants' understanding of science and the challenge of integrating science with social movements against the company. We developed four main themes to describe the reflexive experience such as; gendered experience on resource polluting, knowledge distribution, gendered scientization, and meaningful movement. We also examined other values that interviewees brought to the fore (what it means to be a good mother, citizen power, reason behind studying science).

RESULTS AND DISCUSSION

Gendered Scientization

The concept of scientization can refer to the broad historical processes of the global and institutional spread of scientific institutions and their logic. Similarly, World Polity Theory has theorized scientization as a pattern of global diffusion of scientific norms (Drori and Meyer, 2006). This paper focuses more specifically on the scientization of collective mobilization in which lay citizens frame social issues in a techno-scientific manner, work to change the conduct of credentialed scientists and participate in the creation of scientific knowledge themselves as part of their collective organizing

In the context of water pollution in Lakardowo Village, the majority of village women who are affected by pollution are women with low educational backgrounds and work as farmers and housewives. According to data from Jetis Sub-district in Figures (Mojokerto, 2019) the majority of Lakardowo villagers have a low level of education. The document states that the number of residents who did not attend school amounted to 730 people, who did not finish primary school (SD) as many as 459 people and finished primary school as many as 1,201 people. This means that to capture the reality of water pollution, Lakardowo villagers do not have enough knowledge to state how harmful B3 waste is to their daily lives. Likewise, the women in Lakardowo village, the majority of whom hold domestic burdens that have nothing to do with analyzing the hazards of B3 waste.

The limited understanding of environmental pollution prompted the women of Lakardowo Village to seek help to learn their understanding holistically. In 2016, the women of Lakardowo Village met with an ENGO called Ecoton. Ecoton is an ENGO that focuses on environmental pollution, especially in river ecosystems. Together with Ecoton, the women of Lakardowo Village began to learn the importance of understanding science to support their resistance to companies that pollute the environment of Lakardowo Village. Based on an interview with Dr. Ndaru, a representative of Ecoton, understanding science helped the women in Lakardowo Village connect with reality, where they can identify what substances make water contaminated, signs of poisoning in the body, and analyze which well water points are not suitable for use.

Citizen science bridges science and society by involving members of the public in scientific discovery across disciplines (Bonney et al., 2014; Kullenberg and Kasperowski, 2016; Theobald et al., 2015). Although it can be implemented in all areas of research, citizen science has gained relevance, particularly as a tool to address environmental and conservation issues (Forrester et al., 2017; Newson et al., 2017; Pocock et al., 2017; Zapponi et al., 2017). By enabling people to engage with scientific inquiry, environmental citizen science can contribute to realizing goals in three important areas. First, it provides opportunities to generate knowledge and insights that are new and relevant to science, society, or administration and management, especially concerning nature conservation (Chandler et al., 2017; Danielsen et al., 2014; Turrini., 2018). Second, it can contribute to learning about science and the environment as individuals

can acquire knowledge that is new to them and gain skills as well as scientific and environmental literacy through involvement in citizen science projects (Aceves-Bueno, 2020; Bela et al., 2016; Bonney et al., 2014, 2016; Forrester et al., 2017). Third, citizen science can allow for empowering citizens by providing scope for civic participation and involving people in policy-relevant debates and decision-making processes (Dillon et al., 2016). By offering the potential to merge these three components, citizen science is embedded at the interface of science.

Ecoton applies knowledge co-production (Jennifer et.al., 2024) in helping women understand science. Rather than one-way learning, Ecoton connects science with things that are common to women's daily lives. For example, fly ash is referred to as "wedi" in Javanese, or associating certain substances with color symbols, black for poison and red for flammable substances. The output of the efforts to recognize chemical substances and their dangers to the environment is the independence of women to be involved in the process of observing and analyzing environmental pollution. Since 2017, women in Lakardowo Village have been skilled in using measuring instruments to measure water content. Data collection is done by village women, while Ecoton is involved in laboratory testing.

The village women worked with Ecoton to collect evidence of pollution by mapping the pollution of the villagers' wells. There were four sampling points. Two points are wells dug in the rice field area called points 1 and 4. The other two points are reservoirs located between the company's sewer line connected to the rice field area and residents' wells called points 2 and 3. Of the four samples, point 1 is known to have a TDS content of 952.9 mg/l. Meanwhile, the sulfate content reached 244.2 or 6 mg less than the regulated quality standard threshold. Even so, the results of water quality testing are still considered feasible. Same with point 4, the water quality is declared suitable for use.

At point 2, the test results were declared unfit because the chemical content at that point was quite high. For example, the TDS content reached 1,950 mg/l, manganese reached 0.73 mg/l. The specified quality standard is only 0.5 ppm/l (Rini, 2017). The same thing was also found in a borehole owned by a resident which is point three. The test results found that the TDS content reached 3,200 mg/l, far exceeding the quality standard. The research conducted by the village women and Ecoton gradually helped the women to propose a legal report in 2018. Hence, there was an opportunity to sue the company regarding their irresponsible act towards the village. Furthermore, the research results were used to map out an action strategy aimed at the government. The results of the research they have conducted together with Ecoton embody rigid evidence of pollution so that it can be used to prove that pollution is really happening.

Since then, the group of women in Lakardowo Village named the group "Green Woman" to represent their struggle against environmental injustice. Up until now, the Green Woman movement is still operating to keep remaining of the environmental issues. It is also clear that the practice of science has been beneficial for them to gain a network from local people and international forums. It enlightened their womanhood for the use of technology and to be capable of mobilizing other people into the movement as science-savvy women. Female interviewees were aware of the stereotypes of women as weak in science, and some took pride in doing science well and in countering the negative view of women's scientific literacy.

The Feminine Urge to Mobilize the Movement

Another reality that women in Lakardowo Village have to face is how the family's economic condition declines because they have to continuously buy clean water. Based on an interview with an informant with the initials JT, the money that used to be enough to fulfill daily needs is no longer sufficient to cover all household needs. At home, JT is responsible for managing household finances. Once the water pollution in Lakardowo Village occurred, he had to rack his brains to increase his income. Even with the diet at home, it tends to change since the air is polluted. Initially, farmers in Lakardowo village could consume rice that they cultivated themselves in the fields. However, the water used for irrigation was polluted by B3 waste, and Lakardowo residents hesitated to consume the rice. So they are forced to buy rice from grocery stores for consumption at home. Not only that, it has also become more difficult for the women of Lakardowo village to cook vegetables.

The connection between environmental degradation and the oppression of women is central

to ecofeminism. Vandana Shiva argues that women, especially in agrarian societies, are deeply affected by environmental issues leading them to become key figures in environmental movements (Shiva, 1989 cited in Jain, 2019). It is particularly relevant in Lakardowo Village, where women are on the frontlines of the struggle against water pollution. It highlights how women, especially in rural and marginalized communities, are often the first to mobilize in response to environmental degradation because of their roles as primary caregivers and providers of food and water.

Many traditional subsistence societies have lost power and control over their land and practices, including women's farming knowledge and capacity due to their interaction with the capitalist economy and the dominant Western worldview (Shiva, 2016). Ecofeminists argue that women and children are most disadvantaged by this process because women are not afforded positions of power or self-determination equivalent to those they had in a patriarchal capitalist economy (Mies & Shiva, 2014). Decision-making power, cash payments, and status are given to men in changing societal structures that marginalize women. Furthermore, the environmental degradation caused by accelerated 'development' and the loss of women's ability to use their traditional knowledge in this new Western system are said to be closely linked. Shiva's famous example is the Green Revolution. She argues that the Green Revolution did not feed the hungry but perpetuated hunger through a technological system that took control out of the hands of traditional female farmers and placed it in the hands of multinational corporations through technological and economic dependency. The erasure of local knowledge from decision-making the abstract and reductionist quality of Western science and the limited goals of the development paradigm create environmental degradation through poor land use, pest control, use of toxic chemicals, and the social dislocation of local populations. Shiva concludes that the devaluation of women in their political economic capacity and the devaluation of land as sacred and immanent are part of the same machination. Moreover, globalization entails the integration of local and subsistence-based economies into the global market that replaces 'local' interests with 'global' interests that are distinctly special and not universal interests at all. "Sometimes I worry if I want to cook tamarind vegetables or clear vegetables. Boiling vegetables requires a lot of water while we don't have enough water to cook vegetables like that" - JT, 2021

The water pollution issue in Lakardowo Village, East Java, is a clear example of how environmental degradation affects women. The contamination of water sources by hazardous waste (B3 waste) has made it difficult for women to access clean water for cooking, drinking, and washing. It has increased the financial burden on households, as women like JT must find ways to purchase clean water and food, often at the expense of other essential needs. Women like JT, who manage household finances and daily needs, are particularly vocal in demanding solutions, as they directly experience the consequences of environmental degradation. The experiences of women in Indonesia, particularly in cases like the women of Lakardowo Village, align with the themes discussed in Rachel Stein's "New Perspectives on Environmental Justice: Gender, Sexuality, and Activism". Stein's work emphasizes that women's unique roles and responsibilities often make them the first to experience the negative impacts of environmental issues, but also the first to mobilize and lead movements for change.

Moreover, the concept of "Motherhood as a Catalyst for Activism" revolves around the idea that the maternal instinct to protect and care for one's children can drive women to become activists, particularly in situations where their children's health and well-being are at risk. Sara Ruddick, in her book "Maternal Thinking: Toward a Politics of Peace", explores how the practices and responsibilities associated with mothering can influence and shape women's approaches to activism (Ruddick, 1995 cited in Ahmed, 2024). Drawing on the work of Sara Ruddick, we argue that her "maternal thinking" can be understood as a feminist "weaving" epistemology or flexible way of knowing that promotes meaningful inclusion, symmetrical power relations, and positive peace through three key practices: (1) living with dissonance, (2) creatively addressing the disconnect between self and other interests, and (3) bridging practical goals for current survival with more idealistic goals for future best practices (Williams & Massaro, 2016). In doing so, it provides an alternative to "exiling" practices at the individual,

national, and international levels that reinforce asymmetrical power relations, reinforce unjust social, economic, and political structures, and support violent conflict (Cockburn, 2007). In conclusion, we illustrate how this weaving epistemology supports human rights practices that prioritize people over profit, equity over discrimination and violence, and restorative rather than retributive forms of conflict transformation.

The activism of Indonesian women reflects the ecofeminist perspective that links the exploitation of nature with the oppression of women. In both Kalimantan and Lakardowo, women's close relationship with the environment, due to their roles as caregivers and resource managers, drives them to take action against environmental injustices. This is not just about protecting the environment, but also about defending their rights, livelihoods, and cultural heritage. The activism led by women in these communities often focuses on sustainable practices and the well-being of the entire community, which aligns with the "ethic of care" highlighted in feminist theories (Enloe, 2000).

Studies have found that motherhood as an identity can be an entry point for radical social movements. Even so, efforts to build strength continue. Based on the interview with Mrs. SM, building strength to strengthen the movement begins with cooperation at the family level. In their daily lives, Mrs. SM and her husband always share their roles. For example, in the morning they have to go to the rice fields, so in the afternoon Mrs. SM takes care of the livestock while her husband does the gleaning. Then in the evening, Ms. SM usually gathers with other Green Woman members to strategize the next action. This shows how Mrs. SM's husband is a man who can provide support to his wife to fight for justice in Lakardowo Village. Support at the household level has reduced Mrs. SM's domestic burden. This is also the case with Mrs. SM's children who are now attending boarding school. Mrs. SM's son can tolerate his mother's absence to fight for Lakardowo Village because the actions carried out by Mrs. SM have been going on since he was a child. "My husband and I just help each other. If I alone take care of the house, my husband and I just help each other. If I take care of the house by myself, I would collapse" - SM, 2021

Motherhood as an identity is often cited as an important entry point for women into radical social movements. Women tend to be more politically active when issues directly impact their children or their role as caregivers (Bacchus, 2016; Naples, 1998). A sense of responsibility for their children's future can motivate women to engage in activism, particularly in environmental and social justice movements. For instance, the concept of "maternal thinking" proposed by Ruddick (1989 cited in Ahmed, 2024) emphasizes that the protective nature of motherhood extends beyond the household, encouraging women to advocate for societal change. In the case of Mrs. SM, her involvement in the Green Women's movement in Lakardowo Village illustrates how domestic and maternal responsibilities can catalyze political activism. Her role as a mother and wife did not hinder her activism. Instead, it strengthened her commitment to fighting for the welfare of her community.

The support that women receive from their families, especially their partners, can significantly reduce the burden on the household and enable them to engage more fully in activism (Collins, 2000). The collaboration between Mrs. SM and her husband in managing household responsibilities and activism is an example of this dynamic. Their shared tasks of farming and tending livestock allow Mrs. SM to have the time and energy to actively participate in the Green Women movement. When husbands and other family members take on more household responsibilities, it reduces the pressure on women, giving them the space needed to pursue activism. This redistribution is not simply a matter of convenience but reflects a deeper ideological shift within the household, where gender roles are being renegotiated to support collective action.

In addition, the ongoing nature of Mrs. SM's activism since her son's childhood suggests how continued involvement in social movements can normalize political participation within the family. Its normalization can have a profound impact on the next generation, potentially creating a legacy of activism that extends beyond the immediate movement. Motherhood and domestic responsibilities, often seen as barriers to political participation, can actually serve as powerful motivators and facilitators of activism. The support of family members, particularly partners, is critical in enabling women to balance domestic duties with political involvement. Furthermore, the impact of activism on the family, particularly children, can

foster a legacy of political awareness and social responsibility. Mrs. SM's experience in Lakardowo Village is a fascinating example of how home life and activism are intertwined, challenging traditional gender roles and contributing to struggles for social justice.

CONCLUSION

In summary, gendered scientization includes a turn to science as a means of fulfilling gendered caretaker roles, as well as countering the perception of a feminine deficiency in scientific literacy. The responses given by the women of Lakardowo Village to the water pollution that occurred in their village departed from their experiences as the people closest to the environment. The response of Lakardowo Village women politically can be seen from how they try to accommodate the concerns and complaints of other women and voice them through actions held in several places. The consistency of Lakardowo Village women in voicing their interests is shown by the caping symbol and farmer attributes to represent their identity as farmers who interact a lot with the environment, especially water. In addition, Lakardowo Village women formed the Green Woman movement to represent Lakardowo Village women affected by environmental pollution. With the help of ECOTON and several other environmental NGOs, Lakardowo Village women who are members of the Green Woman movement maintain consistency in learning how to advocate the issue of pollution to the public.

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