

## The Ecofeminist Perspective on The Impact of Climate Change on Women's Health: Study Case of Coastal Women in Sendang Biru Hamlet, Indonesia

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### ABSTRACT

Climate change poses major challenges for vulnerable groups throughout the world, especially women in coastal areas of Indonesia. Climate change presents a complex set of challenges that disproportionately impact vulnerable groups, with women often bearing the brunt of the impacts due to existing socio-cultural norms and unequal access to resources and decision-making processes. In Indonesia, coastal communities face increasing risks from rising sea levels, extreme weather events and coastal erosion caused by climate change. Women, who are often the primary caregivers and resource managers in these communities, bear a disproportionate burden of disasters caused by climate change. They experience increased vulnerability due to socio-cultural norms, limited access to resources, and limited power in making decisions. The impacts of climate change on women in Sendang Biru coastal areas are seen in various forms, including increased economic insecurity, loss of livelihoods, increased health risks, and disrupted access to health facilities. In addition, women's traditional roles as natural resource managers and family caretakers make them vulnerable to environmental degradation and displacement. Integrating an ecofeminist perspective in climate change strategy and mitigation explains how coastal women are exposed to risk, experience vulnerability, face problems in access to health and safety.

**Keywords:** Ecofeminism, Coastal women; climate change; health; global health

### ABSTRAK

*Perubahan iklim menimbulkan tantangan besar bagi kelompok rentan di seluruh dunia, khususnya perempuan di wilayah pesisir Indonesia. Perubahan iklim menghadirkan serangkaian tantangan kompleks yang memberikan dampak yang tidak proporsional terhadap kelompok rentan, dimana perempuan seringkali menanggung dampak terberat karena norma sosial budaya yang ada dan akses yang tidak setara terhadap sumber daya dan proses pengambilan keputusan. Di Indonesia, masyarakat pesisir menghadapi peningkatan risiko akibat kenaikan permukaan air laut, cuaca ekstrem, dan erosi pantai akibat perubahan iklim. Perempuan, yang seringkali menjadi pengasuh utama dan pengelola sumber daya di komunitas-komunitas pesisir, menanggung beban bencana yang tidak proporsional akibat perubahan iklim. Mereka mengalami peningkatan kerentanan akibat norma sosial budaya, terbatasnya akses terhadap sumber daya, dan terbatasnya kekuasaan dalam mengambil keputusan. Dampak perubahan iklim terhadap perempuan di wilayah pesisir terlihat dalam berbagai bentuk, antara lain meningkatnya ketidakamanan ekonomi, hilangnya mata pencaharian, meningkatnya risiko kesehatan, dan terganggunya akses terhadap fasilitas kesehatan. Selain itu, peran tradisional perempuan sebagai pengelola sumber daya alam dan pengasuh keluarga membuat mereka rentan terhadap degradasi lingkungan dan pengungsian. Pengintegrasian perspektif ekofeminisme dalam strategi dan mitigasi perubahan iklim menjelaskan bagaimana perempuan terpapar resiko, mengalami kerentanan, menghadapi masalah dalam akses kesehatan dan keselamatan,*

**Kata Kunci:** ekofeminisme, perempuan pesisir; perubahan iklim; kesehatan; kesehatan global

## Introduction

As a coastal area with large fisheries potential, Sendang Biru Hamlet, which is located in Tambakrejo Village, Sumbermanjing Wetan District, Malang Regency, is one of Indonesia's international fish ports in East Java where many of its fishery products are exported to foreign countries such as Japan and Australia<sup>1</sup>. The fisheries potential in Sendang Biru Hamlet is also supported by the existence of a Coastal Fisheries Port, namely the Pondok Dadap Coastal Fisheries Port Technical Implementation Unit (UPT PPP) which operates under the East Java Province Fisheries and Maritime Service<sup>2</sup>. As one of the biggest Fisheries ports in East Java, Sendang Biru is located directly opposite Sempu Island, making it the only natural fishing harbour that does not have artificial coastal structures in East Java. The unique character of Sendang Biru lies in its traditional fisheries where almost all of the fishers in Sendang Biru still use manual labour, where the porters will travel to transport the fish that are unloaded from the boat to the Fish Auction Place. Moreover, these activities not only involved male fishers but also coastal women who mostly helped the fishers with fish processing or buying and selling fish products.

Working in the fisheries and marine waters sector these people are prone to all risks related to natural cycles, including climate change. According to the World Food and Agriculture Organization (FAO), the fisheries sector, especially small-scale fisheries, is very vulnerable to climate change when viewed from geographical and economic aspects. Because of its location on the front line of the coast, the coastal area, which is generally inhabited by fishing groups, is quite easily affected by natural disasters such as typhoons, rising sea levels, ocean acidification, flooding, and coastal erosion. People who live on the coast often cannot avoid frequent coastal flooding. Climate change affects important aspects of the fisheries sector such as rainfall, temperature, humidity, and wind. These aspects will affect the stability of marine natural resources, ecosystems, and even weather conditions at sea which have an impact on fisheries activities. Not only that, changes in climate in water areas also have an impact on aspects of the health and welfare of coastal communities<sup>3</sup>.

In Indonesia, climate change is also having a shifting effect on coastal ecosystems and fisheries. As an archipelagic country that has approximately 108,000 km of coastline, almost 3/4 of Indonesia's territory is territorial waters. Fisheries alone contribute to 2.6 percent of Indonesia's GDP. Thus, all forms of threats to the fisheries sector will also have an impact not only on marine and coastal ecosystems but also on the economy and welfare of coastal communities, including health<sup>4</sup>. According to the report by The Asian Development Bank (ADB) in the Climate Risk Country Profile 2021 and the Journal Nature Sustainability 2023, Indonesia is ranked third highest among countries at risk of climate

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<sup>1</sup> Nina Evi Nur Laila and Siti Amanah. "Strategi Nafkah Perempuan Nelayan terhadap Pendapatan Keluarga". *Jurnal Sosiologi Pedesaan* Vol 03 No 02. (Aagust 2015): pp.162-164. Accessed February 2024. DOI:10.22500/sodality.v3i2.11340

<sup>2</sup> Keppi Sukei, Yahya, Wahyu H, Henny R, and Jedda A.I. *Rekayasa Sosial Ekonomi dan Kebijakan Kampung Nelayan Migran Berbasis Gender Equality and Social Inclusion (GESI) dan Inovasi di Era Pandemi Covid-19*. (2023). Malang: not published.

<sup>3</sup> FAO. *Impacts of climate change on fisheries and aquaculture*. Rome: Food and Agriculture Organization of the United Nations, 2018, p.2. Accessed February 2024. <https://www.fao.org/3/i9705en/i9705en.pdf>

<sup>4</sup> Kaczan, D, et al. *Hot Water Rising: The Impact of Climate Change on Indonesia's Fisheries and Coastal Communities*. Washington, D.C.: The World Bank, 2023, pp.10-11. Accessed February 2024. <https://www.worldbank.org/en/country/indonesia/publication/hot-water-rising-the-impact-of-climate-change-on-indonesia-fisheries-and-coastal-communities#:~:text=Climate%20change%20is%20driving%20increases,the%20center%20of%20these%20challenges>.

change, after India and Nigeria. As a country located on the ring of fire with a tropical natural climate, Indonesia has a high level of exposure to floods, drought, rising sea levels, forest fires, changes in rain patterns and extreme hot weather. This threat is expected to become more intense as climate change is getting worsens<sup>5</sup>. However, it is interesting how the impact of climate change to people's wellbeing is somehow being neglected.

In general, the influence of climate change on earth's temperature, rainfall and biodiversity not only influences the condition of ecosystems, both land and sea, but also has an impact on human health, food security and people's livelihoods, as well as the quality and existence of natural resources<sup>6</sup>. One of the parties who feel the big impact of climate change is women. Compared to men, women are less likely to own productive assets and are more dependent on natural resources for their livelihoods. Especially in coastal areas, women and children are increasingly vulnerable. It's not just women's livelihoods in the region that have been impacted by extreme weather and other disruptions to the fishing industry. Likewise, in the context of health, women have a higher dependency on health access and facilities because of their different reproductive functions than men. Several natural disasters such as tidal floods also make it difficult for women and girls to access health facilities.

Historically, the role of women in fishing industry activities in coastal communities has been quite diverse. Starting from daily necessities trading activities, assembling fishing gear, restaurants around the port, fish traders, to ship owners. Like in several coastal areas of Indonesia such as West Sulawesi, Maluku, Rote Island, West Java, and East Java. Therefore, everything that influences fishing activities not only impacts male fishermen who go to sea, but also coastal women<sup>7</sup>.

## Literature Review

Climate change has emerged as one of the most pressing global challenges of the 21st century, with significant implications for human health, particularly in vulnerable populations such as coastal communities.<sup>8</sup> In Indonesia, a nation with a vast coastline and extensive reliance on marine resources, the impacts of climate change on coastal women's health are of particular concern<sup>9</sup>. Several studies have explored the multifaceted impacts of climate change on coastal communities in Indonesia. These impacts include rising sea levels, increased frequency and intensity of extreme weather events, coastal erosion, and ocean acidification, all of which have direct and indirect implications for the health and

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<sup>5</sup> UNFPA Indonesia. *Dampak perubahan iklim terhadap kekerasan berbasis gender di Indonesia*. Jakarta: UNFPA Indonesia, 2023, p.35. Accessed March 2024. [https://indonesia.unfpa.org/sites/default/files/pub-pdf/1\\_hasil\\_riset\\_full\\_report\\_gecc\\_2023\\_bahasa\\_indonesia\\_1\\_0.pdf](https://indonesia.unfpa.org/sites/default/files/pub-pdf/1_hasil_riset_full_report_gecc_2023_bahasa_indonesia_1_0.pdf)

<sup>6</sup> UN Women. *Gendered Impacts of Climate Change: Empirical evidence from Asia*. New York: UN Women, 2023, p.3. Accessed February 2024. <https://data.unwomen.org/sites/default/files/documents/Publications/2023/impact-climate-change-gender-asiapacific.pdf>

<sup>7</sup> Nolan, Brooke. *Ekonomi Politik Masyarakat Nelayan Skala Kecil: Sebuah Studi Perbandingan Masyarakat Pendatang di Rote Ndao dan Jawa Timur*. Malang: Universitas Muhammadiyah Malang & Australian Consortium for In Country Indonesian Studies (ACICIS), 2011.

<sup>8</sup> FAO, 2018; Kaczan, D, et al.2023; Giainelli, 2023.

<sup>9</sup> UNFPA Indonesia. *Dampak perubahan iklim terhadap kekerasan berbasis gender di Indonesia*. Jakarta: UNFPA Indonesia, 2023, p.35. Accessed March 2024. [https://indonesia.unfpa.org/sites/default/files/pub-pdf/1\\_hasil\\_riset\\_full\\_report\\_gecc\\_2023\\_bahasa\\_indonesia\\_1\\_0.pdf](https://indonesia.unfpa.org/sites/default/files/pub-pdf/1_hasil_riset_full_report_gecc_2023_bahasa_indonesia_1_0.pdf)

well-being of coastal populations, including women.<sup>10</sup> Despite the growing body of research on the impacts of climate change on coastal communities in Indonesia, there remains a significant gap in understanding the specific vulnerabilities and adaptation strategies of coastal women. Existing studies often overlook the gendered dimensions of climate change impacts, focusing primarily on broader community-level effects rather than disaggregating data by gender.

This literature review contributes to the existing body of knowledge on the impact of climate change on coastal women's health in Indonesia by synthesising findings from diverse disciplinary perspectives, which is ecofeminism. By systematically reviewing and analysing existing research, this study aims to identify key gaps and priorities for future research and policy interventions. This review emphasises the importance of incorporating a gender-sensitive approach in climate change adaptation and mitigation strategies. By recognising the differential impacts of climate change on men and women and addressing underlying gender inequalities, policymakers and practitioners can develop more inclusive and equitable responses that promote the health and well-being of all coastal communities, particularly women.

## Methodology

The design of this paper is qualitative, which generally aims to analyse the mechanisms of the impact of climate change on the health of coastal communities and what adaptation policies are needed to resolve this problem. Qualitative selection is based on the aim of describing in written words the results of research on research subjects observed to understand something more deeply. Qualitative analysis uses a theoretical basis as a guide to focus research, as well as highlighting the processes and meanings contained in the phenomenon. This paper written with a method of collecting as many detailed facts as possible in depth about a problem or symptom to obtain as much of the nature of the problem as possible<sup>11</sup>.

### a. Definition and Impact of Climate Change

The global climate crisis, environmental degradation, biodiversity loss and gender inequality are the world's most complex and pressing issues, each of which has multi-dimensional challenges and far-reaching implications. These four challenges reinforce each other and create increasingly greater risks and threats for all parties, especially developing countries. Climate change is the cause of biodiversity loss and environmental degradation. At the same time, ecosystem and environmental damage hampers the Earth's ability to regulate greenhouse gas emissions, thereby accelerating climate change. In addition, the impacts of climate change, environmental degradation, and biodiversity loss reinforce gender inequalities by causing and exacerbating food crises, poverty, disease, and displacement, all of which have a negative and disproportionate impact on women and girls<sup>12</sup>.

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<sup>10</sup> Ade Latifa and Fitranita. "Strategi Bertahan Hidup Perempuan dalam Menghadapi Dampak Perubahan Iklim". *Jurnal Kependudukan Indonesia*, 8(1). (2013): pp.53-62.

<sup>11</sup> Suyono, Ariyono. *Kamus Antropologi*. Jakarta: Akademi Persindo. 1985. p. 307.

<sup>12</sup> OECD. *The Gender Equality and Environment Intersection*. Paris: OECD, 2023, pp.10-12. Accessed on February 2024. [https://one.oecd.org/document/DCD/DAC/ENV\(2023\)10/en/pdf](https://one.oecd.org/document/DCD/DAC/ENV(2023)10/en/pdf)

Climate change refers to significant changes in long-term weather patterns worldwide or in a particular region that occur over several decades or longer. These changes can include variations in temperature, rainfall, wind, and other extreme weather phenomena. The main cause of modern climate change is human activity, especially the release of greenhouse gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), which increase the greenhouse effect and result in global warming. The impacts of climate change are broad and varied, depending on geographic location, adaptive capacity, and the vulnerability of ecosystems and communities.

Some of the main impacts of climate change include the increases in global temperature that also cause an increase in the average temperature on the Earth's surface, which affects weather patterns, melts polar ice, and increases the frequency and intensity of heat waves. Second is the changes in weather patterns that can cause changes in rainfall patterns, resulting in droughts in some areas and floods in others, disrupting food production and water availability. Third, is the rise of the sea level caused by melting polar ice caps and thermal expansion of waters, which contribute to sea level rise. This will threaten coastal areas and low-lying islands, causing coastal erosion, flooding, and displacement of communities. Fourth is the disturbances to ecosystems and biodiversity, affecting species migration, breeding patterns, and interactions between species. This could threaten the survival of some species and reduce biodiversity. Next is the impacts on agriculture and food security that will affect food production, reduce food security and increase the risk of hunger and malnutrition in some parts of the world. Human Health will also be affected by the increased risks of water- and food-borne diseases, health problems due to heat waves, and vector-borne diseases such as malaria and dengue fever. The other impact is the socio-economic impacts include losses due to natural disasters, reduced productivity in critical sectors such as agriculture, and high adaptation and mitigation costs.

## **b. Gender and Environment**

It is widely understood that threats related to the environment are generally not neutral when it comes to gender. Environmental problems have different intensity impacts on women and men, where women are considered more vulnerable to the impacts of environmental problems, such as climate change. Women are seen as those who are more dependent on natural resources in their livelihoods and daily activities compared to men<sup>13</sup>. Social norms often place women in tasks that are highly dependent on natural resources, and climate change has affected the availability and quality of these resources.

When there is a scarcity of natural resources, women are the parties most affected in terms of social, economic and women's health aspects. For example, when a natural disaster occurs which affects economic conditions, it is women who are more often asked to drop out of school or leave work to help with the daily needs of the victims such as collecting food, collecting water, and fetching fuel for cooking<sup>14</sup>. In terms of health, reduced access to clean water and sanitation due to climate change has a significant impact on the health of women's reproductive systems. Extreme climates also cause hormonal imbalances which can disrupt the health of women's menstrual cycles which can lead to

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<sup>13</sup> UN Women. Gendered Impacts of Climate Change: Empirical evidence from Asia. New York: UN Women, 2023, p.3. Accessed February 2024. <https://data.unwomen.org/sites/default/files/documents/Publications/2023/impact-climate-change-gender-asiapacific.pdf>

<sup>14</sup> OECD. The Gender Equality and Environment Intersection. Paris: OECD, 2023, pp.10-12. Accessed on February 2024. [https://one.oecd.org/document/DCD/DAC/ENV\(2023\)10/en/pdf](https://one.oecd.org/document/DCD/DAC/ENV(2023)10/en/pdf)

depression and stress<sup>15</sup>. Women's capacity to overcome the impacts of climate change is also hampered by their structural weaknesses where many women tend to be in lower middle economic status, are not involved in decision-making regarding environmental issues, and have unequal access to natural resources<sup>16</sup>. Overall, climate change places women in a vulnerable position due to their weak adaptive capacity to overcome the negative impacts of climate change.

One sector that is of concern in analysing the impact of climate change is the fisheries sector and marine ecosystems. The impact of climate change on marine ecosystems is of global concern because of its potential impact on ecosystems and also ecosystem services such as nutrient recycling, carbon sequestration, and fisheries. Climate change studies have demonstrated long-term changes in environmental conditions in many marine ecosystems. When compared to previous years, ocean temperatures are currently warmer and have lower pH and dissolved oxygen concentrations. In addition, climate change changes rainfall, regional wind patterns and ocean circulation and causes sea levels to rise. These impacts have changed the dynamics of marine food webs, from phytoplankton to fish, reducing marine productivity, and resulting in habitat changes and shifts in the distribution of fish and other species<sup>17</sup>. In general, climate change affects the productivity, structure and composition of marine ecosystems on which the fisheries sector depends<sup>18</sup>.

For countries that rely on a water economy, such as Indonesia, the impact of climate change on the fisheries sector has important implications for livelihoods, food security and economic growth. Indonesia is one of the few countries that has fisheries resources where fisheries resources are a source of livelihood and daily nutritional needs of the community. Indonesian fisheries contribute 2.6% of the country's GDP and constitute 50% of the national protein source<sup>19</sup>. Climate change which has an impact on increasing sea temperatures causes the movement of marine biota to more suitable water areas which then causes a reduction in the supply of fish in Indonesian seas. One example is in the waters of Aceh, where tuna fishermen now find it more difficult to catch fish due to the reduction in the tuna population in the waters of Aceh due to the increase in seawater temperature and the intensity of sea waves<sup>20</sup>.

Not only fishermen who are tasked with fishing, but the impact of climate change also has an impact on the welfare of fishermen's families, especially women. The rise in seawater due to climate change has resulted in a reduction in the supply of fresh water in the ground, causing a scarcity of clean

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<sup>15</sup> OXFAM Research Report. "Climate Change and Women's Health and Rights: Women Voices from Mena" Nairobi: OXFAM International, 2023, p.10. Accessed February 2024. <https://www.oxfam.org/en/research/climate-change-and-womens-health-and-rights-women-voices-mena>

<sup>16</sup> OECD, 2023; UN Women, 2023; Eversten, 2023

<sup>17</sup> Bryony Townhill, Olivia Harrod, Suzanne Painting, Emmanuel Acheampong, James Bell, Benjamin Kofi Nyarko, and Georg Engelhard. "Climate change risk and adaptation for fisher communities in Ghana." *Journal of Coastal Conservation*. (2023): pp. 27-45. <https://doi.org/10.1007/s11852-023-00967-7>.

<sup>18</sup> Ignacio Gianelli, Luis Orlando, Luis G Cardoso, Alvar Carranza, Eleonora Celentano, Patricia Correa, Andres de la Rosa, et al. "Sensitivity of fishery resources to climate change in the warm temperate Southwest Atlantic Ocean." *Regional Environmental Change*. (2023): pp. 23-49. <https://doi.org/10.1007/s10113-023-02049-8>.

<sup>19</sup> Kaczan, D, et al. Hot Water Rising: The Impact of Climate Change on Indonesia's Fisheries and Coastal Communities. Washington, D.C.: The World Bank, 2023. Accessed February 2024.

<https://www.worldbank.org/en/country/indonesia/publication/hot-water-rising-the-impact-of-climate-change-on-indonesia-fisheries-and-coastal-communities#:~:text=Climate%20change%20is%20driving%20increases,the%20center%20of%20these%20challenges>.

<sup>20</sup> S Chan, H.A Haridhi, A Damora, R.M Aprilla, A Rahmah, and K Asni. "Economic loss as the impact of climate change on tuna fishermen in Northern Indonesian waters." *IOP Conf. Series: Earth and Environmental Science*. 2023. doi:10.1088/1755-1315/1221/1/012072.

water and threats to sanitation. Coupled with the limited facilities available to women, this makes the challenge of climate change a heavy burden. Women fishermen in Makassar and Lombok have felt the impact of climate change on coastal women. Many fishermen's wives or female fishermen do not earn an income due to extreme weather that disrupts shipping. Apart from that, tidal floods which cause a reduction in the supply of clean water also have an impact on women's health<sup>21</sup>

Several things that can become health problems due to climate change include:

1. Reproductive and Sexual Health.

Climate change could worsen access to sexual and reproductive health services in coastal areas, with negative impacts on women's reproductive health due to increased incidence of natural disasters and ecosystem changes.

2. Water Related Diseases

Changes in rainfall patterns and temperatures increase the risk of water-related diseases, such as diarrhoea and dengue fever, with women and children being the most vulnerable groups.

3. Nutrition and Food Security

Climate fluctuations affect local food production, worsening food security and the nutritional status of women, who are often responsible for household management and family nutrition.

4. Stress and Mental Health

The economic and social impacts of climate change, including loss of livelihoods and migration, cause psychosocial stress and mental health problems for women.

The literature shows that climate change has a significant impact on women's access to health, in the context of this research in coastal areas, with various mechanisms affecting physical, reproductive and mental health. A multi-disciplinary and gender-inclusive approach is needed in responding to climate change. As an output, the emphasis is on the need for adaptation strategies that focus on increasing the resilience of women and coastal communities.

### c. Ecofeminism Theory: The link between climate and women.

In the context of climate change adaptation and disaster risk reduction, it is important to understand who is at risk. The idea that some people are more at risk from disasters than others is closely related to the idea of vulnerability, a well-known concept in disaster and development studies. Vulnerability was launched in disaster and development thinking as a counter to the view that disasters are caused only by external forces. In contrast, political ecologists who support the notion of vulnerability argue that disasters are the result of external hazards meeting social vulnerabilities. So that people who are vulnerable to risk can be helped and protected, they need to be identified and studied<sup>22</sup>. Women are identified as the main victims of climate change both in terms of increased poverty and reduced physical security as climate change is expected to have a greater impact on poor communities due to their dependence on natural resources.

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<sup>21</sup>Malik, et al, 2021; Latifa & Fitranita, 2013.

<sup>22</sup> Evertsen, Kathinka Fossum. "Women as subject of risk in Bangladesh's coastal riskscapes." *The Sociological Review* 71 (5). (2023): 1154-1171. doi:10.1177/00380261231175223.

Ecofeminism is an understanding that links women and the universe, especially in the context of vulnerability, helplessness and injustice experienced by both. This movement, which was first introduced by Françoise d'Eaubonne in 1974, seeks to apply an ethic of care to create ecologically oriented social justice, by prioritizing feminine values and opposing patriarchal culture<sup>23</sup>. The concept of ecofeminism developed from criticism of environmental damage caused by excessive human population and a patriarchal system that controls women's reproduction without giving them the right to regulate their reproduction. In this case, the ecofeminist movement is considered as an earth conservationist whose aim is to improve the condition of nature by returning it to its original state, emphasizing cooperation, care, love and tolerance as a way to preserve nature<sup>24</sup>.

Ecofeminism also notes how natural imbalances affect women's lives, providing specific examples such as the water crisis in Rembang which shows how women farmers experience the direct impact of these imbalances because of their closeness and understanding of water and the importance of protecting water sources. Ecofeminism challenges systemic views that rely on discrimination, competition, and violence, encouraging cultural transformation toward ecological justice and political transformation that eliminates the separation between humans and nature. This movement also highlights the role of women in environmental conservation, with examples of sensitive and empowered female leaders in the movement to save the environment such as Greta Thunberg, Alexandria Ocasio-Cortez, and Vandana Shiva. Ecofeminism criticizes the separation between private and public, showing how the subjugation of women occurs through limiting their space to only the domestic or private sphere, and how social movements initiated by indigenous women can bring about substantial changes in environmental conservation.

Overall, ecofeminism proposes a holistic view that combines an understanding of the unity between humans and nature and emphasises the importance of women's roles and concerns in overcoming environmental issues through an ethical and sustainable approach.

Ecofeminist theory uses number of indicators or parameters to analyse and understand the relationship between environmental exploitation and the domination of women in a patriarchal social structure. These indicators help in identifying how gender power dynamics influence the environment and vice versa:

1. The Relationship between Women and Nature

Ecofeminism explores the historical and cultural relationship between women and nature, often showing how women have traditionally been closer to nature through their social roles, such as managing household resources and preserving sustainability.

2. Environmental Impact on Women

Identify how environmental change and degradation affects women in particular, often more severely than men, due to their unique social, economic, and domestic roles.

3. The Role of Women in Environmental Conservation

Assess the contribution and active role of women in the environmental conservation movement, including their role in social movements, advocacy, and sustainability practices.

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<sup>23</sup> Nkechi & Emmanuel, 2017; Öztürk, 2020.

<sup>24</sup> Öztürk, Yıldız Merve. "An Overview of Ecofeminism: Women, Nature and Hierarchies." *The Journal of Academic Social Science Studies* 13 (81). (2020): 705-714. <http://dx.doi.org/10.29228/JASSS.45458>.



4. Patriarchal System Analysis  
Examines how patriarchal power structures contribute to environmental exploitation and domination of women. This includes criticism of economic and political systems that promote the exploitation of natural resources and gender discrimination.
5. The Link between Violence Against Women and Nature  
Explores how violence against women and nature are often interconnected in the context of social and economic systems dominated by patriarchy.
6. Ecological Justice and Gender  
Emphasises the importance of achieving justice not only in environmental matters but also in the gender distribution of power, recognizing that solutions to environmental problems must also address gender disparities.
7. Ethics of Care  
Focusing on an ethic of care and cooperation as an alternative approach to interacting with nature, in contrast to exploitative approaches dominated by patriarchal values.
8. Intersectionality  
Understand that ecofeminist struggles are not only limited to gender issues, but also involve consideration of race, class, nationality, and other factors that influence a person's experience of discrimination and exploitation.

Indicators from an ecofeminist approach offer a complex and multidimensional analytical lens for understanding and addressing environmental and gender issues in an integrated manner, showing how social justice and environmental justice are interrelated and cannot be separated.

## Analysis

According to Ecofeminism, there are several indicators that can be used to explain how natural changes such as climate change can affect coastal women's health.

### a. Coastal Women Connection with Nature

Based on ecofeminist perspective, women and the environment are two things that are closely related and can be seen in everyday interactions, and this connection is often overlooked. Activities related to women such as giving birth, caring for the family, and all other domestic activities are always connected to nature and the environment<sup>25</sup>. Women in general have roles which according to Moser can be categorised into double roles and three roles, namely reproductive, productive and social roles. The reproductive role is the role of women in taking care of the family and family members. Productive roles relate to roles that produce products, services or work that economically generate income for the

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<sup>25</sup> Ifechelobi Jane Nkechi and Asika Ikechukwu Emmanuel. "Women and Ecology: An Eco-Feminist Reading of Chinua Achebe's Things Fall Apart". *International Journal of English Literature and Social Sciences (IJELS)*. Vol.2, Issue 4. (2017): pp.33-34. <https://dx.doi.org/10.24001/ijels.2.4.5>

family. Meanwhile, the social role is related to their involvement in social activities such as organising religious studies, social gatherings and assemblies<sup>26</sup>.

In the Coastal Community in Indonesia, Indonesian female fishermen mostly have similar roles. First, the reproductive role, which are the role of wife, caretaker of the family and carrying out other daily activities such as washing clothes, cleaning the house, cooking, and so on. Second, is the productive roles. Due to the uncertain income of fishermen, many women in coastal area also have side jobs to increase their family income. Many Indonesian coastal communities rely on fishing, aquaculture, seaweed farming, and other marine-based livelihoods for their sustenance. Women are often actively involved in these activities, including fish processing, seaweed cultivation, and small-scale trading, contributing significantly to household incomes and local economies. Many fisherwomen work in markets to sell their husbands' fish catches, or pursue other jobs such as farming or trading.<sup>27</sup> Indonesian fisherwomen generally have a dual role, namely as housekeepers and working to help their husbands process fishery catches, such as fisherwomen in Sendang Biru coastal area.<sup>28</sup> . Several women in Sendang Biru work as boat owners or traders who are active in fishing activities in coastal communities. Not only that, women from the Sendang Biru coast also play a role in the marketing and processing business of male fishermen's fishery products. Indonesian coastal women often possess rich traditional knowledge about the environment, including fishing techniques, marine resource management, and medicinal plant usage. They play crucial roles in passing down these practices through generations, contributing to the sustainable use of coastal resources. Coastal women usually tend not to be involved much in social activities because the intensity of their activities is largely divided between taking care of their families and helping their husband in processing or marketing fishery products.

Through all of these roles, it is emphasised how inseparable women are from nature. All daily activities done by women, from washing clothes to fish processing, are related to natural resources and the environment. This relation also emphasises how women are more prone to the impact of environmental problems compared to men.

## **b. The Role of Indonesian Coastal Women in Environmental Conservation**

Coastal women often serve as stewards of their local environments, actively participating in community-based conservation efforts and advocating for sustainable resource management practices. They may be involved in initiatives such as mangrove restoration, marine protected area management, and waste management programs to safeguard coastal ecosystems.

In Sendang Biru, there is an environmentalist community, the Yayasan Bhakti Alam Sendang Biru, that was led by a girl named Lia Putrinda Anggawa. Inherited the conservation community from her father, who was a former fisherman, she became an environmental warrior by giving up her university degree and focused on actively conserving nature in Sendang Biru Coastal Area. Together with other university students, villagers, and volunteers, she helps restore natural beauty by planting

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<sup>26</sup> Irwan Kurniawan Soetijono. "Coastal Women's Adaptation Strategy in Facing Climate Change at Cemara Beach, Banyuwangi Regency through a Gender Perspective". *Proceeding of IROFONIC 2023*. (2023): pp.73-75.

<sup>27</sup> Ibid.

<sup>28</sup> Nina Evi Nur Laila and Siti Amanah. "Strategi Nafkah Perempuan Nelayan terhadap Pendapatan Keluarga". *Jurnal Sosiologi Pedesaan Vol 03 No 02*. (Aaugust 2015): pp.162-164. Accessed February 2024. DOI:10.22500/sodality.v3i2.11340

mangrove forest areas and Tambakrejo Protection Forest. In 2018, Yayasan Bhakti Alam Sendang Biru restored 20 hectares of mangrove forest out of a total of 73 hectares of mangrove forest in the Tambakrejo area. Furthermore, they have a target to re-improve mangrove forests as much as 117 hectares<sup>29</sup>.

### **c. Patriarchal Culture in Indonesian Coastal Community**

In Indonesian coastal communities, traditional gender roles often dictate distinct responsibilities for men and women. While men typically engage in fishing, boat maintenance, and market transactions, women are primarily responsible for household chores, childcare, and supplementary income-generating activities such as processing fish or seaweed. This gender-based division of labour can reinforce inequalities in decision-making power and economic autonomy.

In Sendang Biru coastal area the patriarchal value or culture of the community is shown by the division of the gender role in the society. In Tambakrejo Village, the location of Sendang Biru coastal area, there are around 2.169 fishermen who are all dominated by men. While women are mostly work as housewives, farmer, migrant workers, or other side workers such as merchant and government civil servant<sup>30</sup>. In comparison, from approximately 4.417 people in the Village who are working, 83% of them (or around 3.667 people) are men. Moreover, the historical record of the village shows that the heads of the village are usually held by men. Although women in coastal areas such as Sendang Biru are mostly in charge of economic activities, they are often isolated or neglected during decision making.

Traditional gender roles in Indonesian coastal communities often assign men as the primary decision-makers in household and community affairs. Men typically have greater control over resources such as land, fishing gear, and financial assets, which can influence decision-making processes related to livelihoods, environmental management, and community development. Patriarchal norms may restrict women's access to resources and economic opportunities, limiting their participation in activities such as fishing, aquaculture, and entrepreneurship. This lack of access to resources can perpetuate gender disparities in income, education, and social status, reinforcing women's economic dependence on men within the household.

### **d. Climate Change Impact on Coastal Women's Health**

Indonesian coastal communities, particularly women, are particularly vulnerable to environmental changes and natural disasters such as sea-level rise, coastal erosion, and extreme weather events. Women often demonstrate resilience and adaptability by developing coping strategies, such as diversifying livelihoods or engaging in alternative income-generating activities. Coastal areas in Indonesia often suffer from pollution, including plastic waste, industrial runoff, and sewage. This pollution can directly affect the health of coastal women who rely on these environments for fishing, farming, and gathering resources. Exposure to pollutants can lead to respiratory problems, skin diseases, and other health issues.

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<sup>29</sup> Retrieved from Puspita, Melynda Dwi. 2021. "Lia Putrinda Anggawa, Sosok Milenial Menginspirasi Pendongkrak Ekowisata Bahari." Good News From Indonesia, June 29, 2021. <https://www.goodnewsfromindonesia.id/2021/07/03/lia-putrinda-anggawa-sosok-milenial-menginspirasi-pendongkrak-ekowisata-bahari>.

<sup>30</sup> According to the research data collected from the Sendang Biru in 2021.

Rising sea levels, increased frequency of extreme weather events, and ocean acidification due to climate change pose significant threats to coastal communities in Indonesia. For example, in this early year of 2024, the coastal area of Sendang Biru was hit by Rob flood or Tidal Flood due to the high waves in the southern waters of Java Island as the occurrence of extreme weather that happened several days earlier. The flood has caused many fishermen to stop fishing because the wave at the sea was more than 5 metres high. In the previous year, the same flood caused dozens of houses in Sendang Biru to be submerged for several days which then hindered the activities of residents in the village.

These natural challenges might cause women in these communities to face challenges related to food security, displacement, loss of livelihoods, and increased vulnerability to natural disasters, all of which can impact their health and well-being. Unfortunately, coastal communities in Indonesia, particularly those in remote or marginalised areas, may have limited access to healthcare services, including reproductive health services, maternal care, and treatment for environmental health problems.

As mentioned previously, women's activities or roles, including coastal women, are correlated with nature and environment. To do a simple daily task like washing clothes and cooking, they need access to natural resources. Women's role in caregiving and household management depend on the availability of clean water and sanitation. Increased natural disasters due to climate change such as floods and storms might hinder their access to obtain those necessities. Rising sea levels and increased precipitation can lead to flooding and contamination of water sources in coastal areas. This can result in the spread of waterborne diseases such as cholera, typhoid, and diarrhoea. Women are also prone to reproduction disease due to unclean water during natural disasters.

The climate change impact on fishery could cause food scarcity in coastal communities. Women are often responsible for food preparation and household nutrition, so they may bear the brunt of food shortages and malnutrition resulting from climate-related impacts on food production. Rising temperatures associated with climate change can increase the risk of heat-related illnesses such as heatstroke and dehydration, especially for women engaged in outdoor labour or caregiving activities. Pregnant women, infants, and the elderly are particularly susceptible to heat stress. These challenges may lead to additional stressors related to their caregiving roles and concerns for the well-being of their families. Unfortunately, because of the patriarchal system that exclude women's participation in decision-making processes related to climate change adaptation and mitigation strategies, it might prevent their perspectives and needs from being adequately addressed in policies and interventions, leading to gaps in responses to the health impacts of climate change. As climate change disrupts livelihoods and increases the burden of care due to health impacts, women may face additional strain without adequate support systems or recognition of their contributions.

## **Conclusion**

Ecofeminism emphasises the exigent relations between nature and women, and how the natural imbalances might jeopardise women's wellbeing. Climate change is one of the natural imbalances that poses significant challenges to women's health in coastal areas like Sendang Biru, Indonesia. The intersecting factors of gender inequality and environmental degradation exacerbate the vulnerabilities of women, leaving them disproportionately affected by the health impacts of climate change. Rising sea

levels, extreme weather events, waterborne diseases, food insecurity, and heat-related illnesses threaten women's well-being, particularly due to their roles in caregiving, household management, and community resilience. The patriarchal system further compounds these challenges by limiting women's access to resources, decision-making processes, healthcare services, and education. Addressing the climate change impacts on women's health in Sendang Biru requires gender-responsive adaptation strategies that prioritize the needs and perspectives of women, empower them to participate in decision-making, challenge traditional gender roles, and promote equitable access to resources and healthcare services. By recognising the intersectionality of gender and climate change, stakeholders can work towards building more resilient and inclusive coastal communities where women can thrive despite the challenges posed by environmental change.

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