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RESEARCH ARTICLE

WOMEN'S EMPOWERMENT IN REDUCING CLIMATE CRISIS VULNERABILITY: A CASE STUDY OF THE CSR PROGRAM PRABU KRESNA BY PT PERTAMINA EP SUKOWATI FIELD IN RAHAYU VILLAGE

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Abstract

Climate change poses serious economic, social, health, and environmental risks, including in Tuban Regency, East Java. Rahayu Village is among the most affected, facing floods, droughts, and soil degradation from chemical pesticide use. These conditions heighten women's vulnerability, as they balance roles as housewives and farm laborers with limited resources and training. This study analyzes the role of PT Pertamina EP Sukowati Field's Prabu Kresna CSR Program in reducing that vulnerability. Using qualitative methods, the research found that the program enabled the creation of the Dewi Sri Herbal Group, which processes medicinal plants into herbal products. Applying the ACTORS theory strengthened women's confidence, skills, institutional legitimacy, and support networks. As a result, the group generated new economic opportunities, greater independence, and resilience to climate impacts. The study highlights how CSR-based empowerment can serve as both a climate adaptation strategy and a means to strengthen local communities.

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Introduction: -

Climate change is a global threat with broad impacts on the economic, social, and environmental sectors. Human activities, such as massive use of motorized vehicles, forest burning, excessive energy consumption, and unsustainable agricultural practices, are the main factors accelerating the pace of climate change (Keman, 2007; Amalia & Sugiri, 2014). This phenomenon has triggered extreme and unpredictable weather, increasing the risk of disasters such as floods and droughts, which directly affect community livelihoods.

In Tuban Regency, East Java, the consequences of climate change are clearly evident. Between 2020 and 2024, there were 770 extreme weather events, 218 drought cases, and 91 floods. Soko District is among the most affected areas, where communities often suffer crop failures due to a combination of floods and droughts (BPS, 2024). For instance, in February 2025, around 200 hectares of rice fields in Sawahan Village (Rengel District) and Rahayu Village (Soko District) were flooded just days before harvest, causing major losses for farmers who mostly depend on bank loans (Tribun News, 2025).

This condition is exacerbated by the excessive use of chemical pesticides, which significantly reduces soil quality. Agriculture, however, remains the main livelihood of the Tuban community.

The decline in agricultural productivity not only directly affects farmers but also increases the socio-economic vulnerability of households, particularly women. In Rahayu Village, most women bear dual roles as housewives and farm laborers. During crop failures, they are forced to ensure food security, cut household spending, and even seek additional income. Unfortunately, most women in the village have limited access to training, resources, and decision-making spaces that could help them overcome crises. A Social Mapping of Rahayu Village (2025) conducted through focus group discussions (FGDs), in-depth interviews, and questionnaires, shows that 96.43% of housewives had no access to training, thereby weakening their capacity to cope with climate risks.

Beyond socio-economic aspects, climate change also affects community health. Floods often increase cases of diarrhea and leptospirosis due to contaminated water, while droughts and seasonal transitions raise risks of acute respiratory infections (ARI), flu, coughs, dehydration, and stress. In Rahayu Village, 55% of residents rely on over-the-counter medicines from local shops without prescriptions or medical guidance (Basic Ecosystem Training Discussion, Rahayu Village, 2023). This uncontrolled consumption of medicine carries long-term risks, including stomach disorders, kidney damage, and drug resistance.

In this context, inclusive adaptive strategies are urgently needed to strengthen women's capacity. Empowerment efforts through education, economic, and health initiatives are crucial in reducing vulnerability. Ghosh (2019) emphasized that structural changes are necessary for women to actively contribute to sustainable development. In line with this, PT Pertamina EP Sukowati Field, an oil and gas company engaged in exploration and production (EP), responded to this challenge through a community-based Corporate Social Responsibility (CSR) program.

One initiative is the Prabu Kresna Program, which emphasizes women's empowerment through herbal schools, training, and homemade herbal drink production. This program not only raises women's knowledge and awareness about family health but also creates new economic opportunities for housewives, thereby making them more socially and economically resilient to crop failures and the climate crisis.

Moreover, the climate crisis brings complex negative impacts on social and political structures, especially for groups with limited adaptive capacity and minimal resource access, which are often linked to vulnerability issues (Udas&Larrington-Spencer, 2019; Kaijser& Kronsell, 2014; Tompkins & Adger, 2004). Climate crisis discourses also reveal gender biases in adaptation processes, wherein inequalities amplify differences in impacts between men and women. Women farmers thus become the most vulnerable group, a condition that cannot be explained solely by technical approaches but must be examined from social and structural perspectives (Call & Sellers, 2019; Denton, 2002; Djoudi et al., 2016).

Based on this framework, this study aims to analyze the contribution of the Prabu Kresna CSR Program in reducing women's socio-economic vulnerability to climate risks. Additionally, the findings are expected to serve as an evaluation and reference for PT Pertamina EP Sukowati Field in optimizing its future CSR implementation.

Theoretical Framework:

Community Empowerment:

This study refers to the ACTORS theory introduced by Sarah Cook and Steve Macaulay (1977). This theory views society as subjects capable of initiating change by freeing themselves from rigid control. Through this approach, individuals are granted freedom to take responsibility for their ideas, decisions, and actions. Using Cook and Macaulay's concept of empowerment, social change occurs in a planned manner because the inputs are anticipated from the outset, allowing outputs to be optimally utilized.

The ACTORS framework emphasizes six dimensions of empowerment:

- **Authority** (the power to determine the direction of change),
- **Confidence & Competence** (self-confidence and ability),
- **Trust** (belief in potential),
- **Opportunities** (chances to develop),
- **Responsibilities** (responsibility in the change process), and

- **Support** (balanced support from multiple stakeholders).

This framework is expected to produce development outputs in the form of self-recognition, self-confidence, and independence. Its application requires collaboration among various stakeholders, including government, civil society, and the private sector (Maani, 2011).

In the context of women's empowerment in Rahayu Village, building a resilient community involves granting authority to women's groups, fostering confidence among members, and instilling trust in managing local potential such as herbal plants. Opportunities are provided through product marketing, while responsibilities are strengthened by issuing formal decrees (SK) for the group as a form of institutional legitimacy. On the other hand, concrete support is provided in the form of production facilities that ensure sustainability of group initiatives.

Research Methodology:-

In this study on women's empowerment to reduce vulnerability to the climate crisis, a qualitative research method was used. A qualitative approach was chosen as it aims to explore and understand meanings derived from social and human problems (Creswell, 2007). To support this research, data were collected through observation and in-depth interviews with key informants, including stakeholders and members of the Dewi Sri Herbal Group. In addition, the research was complemented with literature studies and a review of relevant supporting documents, particularly those related to the physical aspects of the climate crisis, community empowerment theory, corporate social responsibility (CSR), as well as studies on vulnerability and disasters. Through this approach, the research seeks to provide a comprehensive understanding of the climate crisis phenomenon and its gendered impacts, particularly on women in Rahayu Village.

Findings:

Corporate Social Responsibility (CSR):

The concept of Corporate Social Responsibility has developed as a normative obligation reflecting the role of companies in responding to social demands in their environment. Bowen (2013) described CSR as the obligation of businesses to follow applicable policies, make appropriate decisions, and take actions consistent with societal values and norms (Moon & Vogel, 2008). This definition shows that CSR is not merely an additional activity but a moral duty that underscores a company's attachment to public interests.

From another perspective, Guthrie and Mathews (1985) viewed CSR as the provision of financial and non-financial information regarding an organization's interactions with its natural and social environment. Such information is usually disclosed in annual reports or through separate social reports (Hackston & Milne, 1996; Sembiring, 2003). This highlights that CSR also involves transparency and accountability, as companies are expected to openly disclose their social responsibilities to stakeholders.

In Indonesia, CSR is regulated under various laws, including Law No. 40 of 2007 on Limited Liability Companies. Initially seen as mere community care, CSR has now become an integral part of corporate governance structures. Its implementation involves multiple stakeholders (Widodo, 2014) and functions as a monitoring tool to curb opportunistic managerial practices that could harm stakeholders.

As one of the oil and gas companies, PT Pertamina EP Sukowati Field is obligated to implement Social and Environmental Responsibility (TJSL) programs. This obligation arises because its operational activities directly interact with surrounding communities, particularly those in Ring 1 areas. To ensure smooth operations while fostering positive community relations, Pertamina EP Sukowati carries out various programs tailored to local needs and issues.

CSR initiatives at PT Pertamina EP Sukowati Field cover five main areas: economy, environment, health, culture, and education. These activities are not limited to charity or participation but also include capacity-building trainings, infrastructure development, and continuous mentoring to promote community self-reliance. The programs are guided by the company's CSR vision and mission, CSR policies, social mapping documents, the UN Sustainable Development Goals (SDGs), and ISO 26000 international standards.

A key focus of the CSR program is women's empowerment, based on findings from social mapping in Rahayu Village. Women's participation in the village was found to be relatively low, especially regarding training access and income opportunities. Training is crucial for enhancing household economic capacity, particularly in disaster-prone contexts. Rahayu frequently faces floods and droughts that heighten women's economic and social vulnerability. Crop failures due to floods further hinder families' ability to meet basic needs, intensifying women's challenges amid worsening climate crises.

Women and Vulnerability to the Climate Crisis:

Women, especially housewives active in domestic spheres, are among the most vulnerable groups facing complex social, economic, and psychological challenges. Although their contributions to family and community survival are significant, these often go unrecognized formally. Gender inequality restricts women's access to education, training, and decent employment, while social stigma reinforces perceptions of women in domestic roles as less productive. These conditions affect not only family economic stability but also women's self-confidence and social identity.

Women's vulnerability increases during disasters. Studies show that women traditionally carry reproductive, productive, and community responsibilities, making access to reliable water supply essential (Fonjonga & Zama, 2023). During droughts, women struggle to fulfill these roles. Research also reveals that women face heightened stress under water scarcity (Fisher, 2006). Fonjonga and Zama (2023) illustrated how female farmers in Muyuka, Cameroon, endure economic hardships during droughts, spending extra resources on seeds and time replanting crops lost to heat or irregular rainfall. Women and children are forced to fetch water from distant rivers for irrigation, while those near rivers still face increased costs for localized irrigation.

A study by Al-Farisi and Alfirdaus (2020) on women farmers in Karanganyar, Central Java, also found that women face unique vulnerabilities during climate crises due to weak adaptive capacity and limited access to both material and non-material resources. These vulnerabilities include increased water demands, declining labor absorption and income, and restricted knowledge, roles, and participation in climate adaptation efforts.

In this context, women's positions are often less strategic than men's, due to social structures that limit their legal and cultural access. The situation is even more complex for women farmers, who must balance domestic and productive roles. For widows, these burdens further exacerbate economic hardships, reducing overall well-being.

Vulnerability of Women in Rahayu Village:

Climate crisis impacts in Tuban Regency are evident. Data from BPBD Tuban show an increase in disaster cases, with 1,165 events in 2025, 30% of which were flash floods and whirlwinds (BPBD Tuban, 2025). Tuban's geography, traversed by the Bengawan Solo River, a 65 km coastline, limestone hills, and inadequate drainage systems, makes it highly prone to hydrometeorological disasters (Yolency, 2023).

Rahayu Village, with 770 farmers among its 3,968 residents (BPS, 2024), is especially vulnerable. Over 200 women farmers face direct exposure to climate crisis impacts. In addition, housewives who depend solely on their farmer husbands' income become more vulnerable during crop failures, as they must manage food needs, cut expenses, and find survival strategies amid limited resources. Thus, climate change exacerbates gender inequality and deepens women's socio-economic vulnerabilities (Denton, 2002; Djoudi et al., 2016; Arora-Jonsson, 2011).

Health vulnerabilities are also prominent. Many residents, particularly women, face difficulties accessing healthcare due to BPJS barriers and limited health knowledge. About 55% of villagers prefer buying medicines from local shops instead of visiting health facilities (Rahayu PSLRB Discussion, 2023). Climate change intensifies health risks, with floods increasing diarrhea and leptospirosis cases, and droughts causing Acute Respiratory Infection (ARI), flu, dehydration, and stress. Excessive, unsupervised medicine use further risks long-term health issues such as stomach damage, kidney disorders, and drug resistance.

The Prabu Kresna Community Empowerment Program:

Prabu Kresna, an acronym for Petani Rahayu Bersatu, Kreatif, Sehat, dan Sejahtera (United, Creative, Healthy, and Prosperous Rahayu Farmers), was initially launched by PT Pertamina EP Sukowati Field to address clean water shortages caused by karst-dominated soils and rain-fed irrigation. Collaborating with local stakeholders such as BUMDes (Village-Owned Enterprises), the company formed HIPPA (Water Users Farmers' Association) and HIPPAM (Community Drinking Water Users Association) water groups under the "Banyu Asih" program.

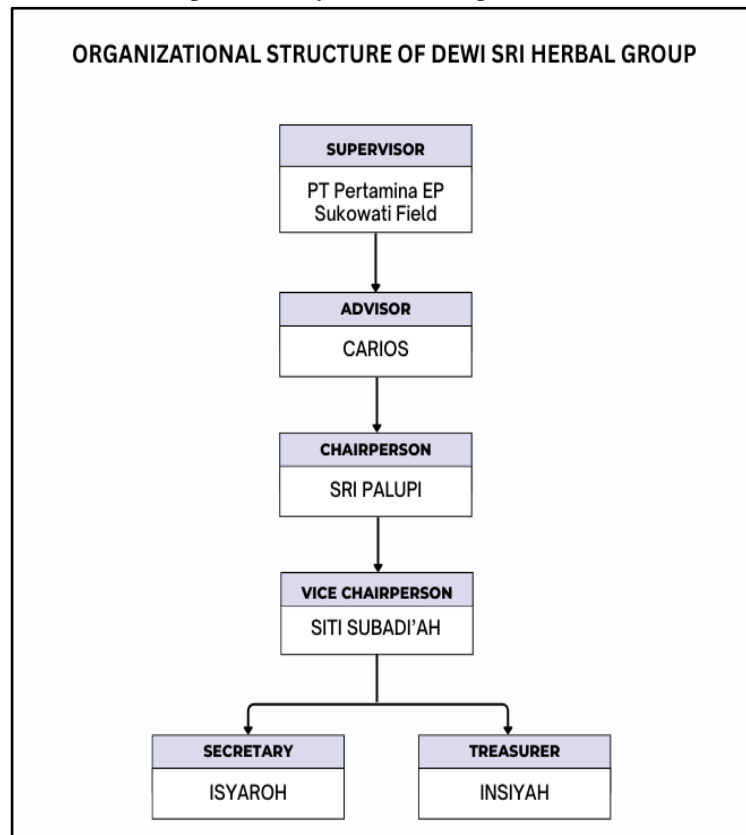
Over time, Prabu Kresna shifted focus toward organic farming in response to declining rice yields due to soil degradation from chemical fertilizers. Experts from CARIOS introduced organic rice systems using SRI methods and composting, later developed into the Antasena Organic Farming Program. To address youth unemployment, the program also established the Antareja youth farmer group, which cultivates hydroponic melons.

Overall, Prabu Kresna reflects Pertamina's focus on environmental improvement through sustainable farming. Initially focused on crop failure prevention, the program later expanded to alternative activities, especially for women. Social mapping revealed women's strong need for training to support self-reliance. Thus, Prabu Kresna integrated gender-sensitive initiatives, notably the "Dewi Sri" Herbal Group, which empowers women through herbal schools, training, and income-generating activities.

Contribution of the Prabu Kresna CSR Program to Women's Empowerment:

The Dewi Sri Herbal Group was officially established in 2024 under Prabu Kresna. Initially, about 30 women participated in herbal training, which was chosen due to Rahayu's health emergency and the local availability of TOGA plants (turmeric, galangal, etc.). Previously used only as spices, these plants were introduced for herbal medicine production through hands-on workshops led by experts.

Enthusiasm led to the continuation of activities into a bi-monthly Herbal School guided by CARIOS facilitators. Women were trained in herbal knowledge and practical production of new herbal recipes. Eventually, the group was formalized as the Dewi Sri Herbal Group, chaired by Mrs. Sri Palupi.



Source: Author's own processing (2025)

Currently, the group processes and markets herbal drinks, such as Jakunsela, Sejalaku, Sejemanis, and others named after their main ingredients. Products are sold at bazaars and through direct orders. Initial capital was supported by Pertamina EP Sukowati. Monthly group profits reached Rp1,133,036, while individuals also benefitted, with sales of 50–60 bottles monthly (Rp2,000–3,000 each).

Rekap Pemesanan Minuman Herbal Kelompok Dewi Sri				
Pemesanan		Omset	Modal Bahan & Bagi Hasil Anggota Kelompok	Keuntungan Usaha (Kas) Kelompok
Maret	155	Rp1,162,500	Rp813,750	Rp348,750
April	550	Rp4,125,000	Rp2,887,500	Rp1,237,500
Mei	290	Rp2,175,000	Rp1,522,500	Rp652,500
Juni	450	Rp3,375,000	Rp2,362,500	Rp1,012,500
Juli	950	Rp7,125,000	Rp4,987,500	Rp2,137,500
Agustus	480	Rp3,600,000	Rp2,520,000	Rp1,080,000
September	650	Rp4,875,000	Rp3,412,500	Rp1,462,500
Total	3525	Rp26,437,500	Rp18,506,250	Rp7,931,250
Rata-rata	503.571	Rp3,776,786	Rp2,643,750	Rp1,133,036

Source: Author's own processing (2025)

To expand production, Pertamina EP Sukowati Field provided steamers, stoves, bottles, and packaging designs, as well as marketing support at company events. This improved product quality, competitiveness, and sustainability.



Source: Author's own processing (2025)

Discussion:-

The application of the ACTORS theory in the activities of the Dewi Sri Herbal Group is clearly reflected in the dynamics of empowerment taking place. The ACTORS theory, introduced by Cook and Macaulay, emphasizes community empowerment through six key dimensions: Authority, Confidence & Competence, Trust, Opportunities, Responsibilities, and Support. When connected to the activities of the Dewi Sri Herbal Group, this framework can be observed in several aspects as follows.

1. **Authority** – Women were given authority to manage TOGA plants and develop herbal enterprises, instilling ownership.
2. **Confidence & Competence** – Training built self-confidence and practical skills, shifting use of turmeric/galangal from cooking to value-added herbal products.
3. **Trust** – Support from CARLOS and Pertamina built confidence in the group's ability to manage independently. Mutual trust grew among members.
4. **Opportunities** – Herbal School opened economic opportunities through product development and marketing.
5. **Responsibilities** – Formalization of the group instilled accountability. The group is currently applying for a legal decree (SK) for official recognition.
6. **Support** – Sustainability relies on balanced multi-stakeholder support from the company, facilitators, and the community.

Thus, the application of the ACTORS theory in the activities of the Dewi Sri Herbal Group demonstrates how local potential-based empowerment can generate planned, measurable, and sustainable change, particularly in enhancing the capacity of rural women and reducing their vulnerability to the impacts of the climate crisis. Nevertheless, certain limitations remain in practice. For instance, the herbal beverages produced by the group have not yet obtained a Company Registration Number (NIP) or Home Industry Food Production Permit (PIRT) to strengthen product legality, as the process of formalizing the group's decree (SK) is still underway. Another challenge lies in the fact that the herbal products are currently sold only in liquid form. To maintain product quality, the women in the group have chosen not to add preservatives, resulting in a relatively short shelf life. Looking forward, the products are expected to be developed in powdered or dried form, which would not only extend their durability but also allow them to reach a wider consumer base.

Conclusion:-

Through the Prabu Kresna Program, PT Pertamina EP Sukowati Field successfully developed the Dewi Sri Herbal Group, applying ACTORS theory in practice. Women's empowerment through local potential has reduced their vulnerability to the climate crisis. This success is attributed to collaboration among stakeholders, including active women participants, CARIOS facilitators, Rahayu village government, and Pertamina's CSR support. The group's pending NIP and PIRT registrations are expected to enhance market expansion. Product innovations such as dried or powdered forms will further increase durability and consumer reach. Ultimately, this program demonstrates how CSR-based empowerment strengthens women's resilience socially and economically against climate crisis impacts.

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