



A RENEWABLE ENERGY PROGRAM TO ADDRESS POWER DYNAMICS IN EAST SUMBA, INDONESIA

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Abstract

The Indonesian government's commitment to sustainable development includes reducing emissions by 29% by 2030, with initiatives like the Sumba Iconic Island, which aims to provide 100% renewable energy on Sumba Island. Despite the economic opportunities this initiative offers, women in Sumba, especially in remote areas like Luku Wingir Village, face significant barriers, including limited access to energy resources and exclusion from decision-making processes due to traditional power dynamics and caste systems. This research aims to explore how renewable energy programs can address these challenges and promote gender equality. Using qualitative methods such as desk research, interviews, and focus group discussions, the research examines the potential of renewable energy initiatives to transform gender norms and empower marginalized groups. The results suggest that such programs can positively influence women's economic participation and improve overall rural community well-being by challenging existing power dynamics. The research's findings have important implications for the design and implementation of inclusive renewable energy initiatives, particularly in fostering gender equity and sustainable development in rural areas.

Keywords: Renewable Energy, Gender Equality, Social Capital, Sumba.

INTRODUCTION

The Indonesian government acknowledges that adopting a climate-friendly approach to social and economic development is crucial for achieving sustainable development. The government has established a goal of decreasing emissions by 29% by 2030, with the potential to achieve a 41% reduction if international assistance is available. Furthermore, this commitment has been reaffirmed in the National Energy Plan. To enhance the proportion of renewable energy in electricity generation, the Ministry of Energy and Mineral Resources (MEMR) of the Republic of Indonesia established Ministerial Regulation No. 12/2017, which focuses on the utilization of renewable energy resources for electricity supply. Indonesia has substantial deficiencies in the allocation of funds towards renewable energy projects. For instance, the Asian Development Bank identifies "unbalanced power purchase agreements that negatively impact the ability to obtain financing" and "restrictions on foreign investment" as factors that hinder the bankability of

projects (ADB, 2020). The lack of knowledge about gender equality and social inclusion issues, coupled with the subsequent absence of gender sensitivity programs and policies, worsens this situation. As a result, Indonesia has not effectively addressed the disparities in gender and social inclusion when it comes to accessing energy (Nikolina, 2016).

Despite Sumba Island's high poverty ranking in Indonesia, the East Sumba Regency possesses significant social capital, which serves as a strong asset in the region. An essential factor in developing Sumba Island as a Renewable Energy Iconic Island (Sumba Iconic Island), which began in 2010, is establishing a robust network involving the community, government, international organizations, and the private sector. Since 2010, the social capital on Sumba Island, particularly in East Sumba, has not fully engaged community groups, especially Sumba women. Village meetings generally exclude women's voices in decision-making, involving only men. Due to prevailing cultural and social norms, women frequently face difficulties in fully participating in the economic and political domains. Gender-based labor division forces women to devote a significant amount of their time to domestic work and childcare (including elderly care) responsibilities, thereby restricting their ability and availability to engage in formal, paid employment, primarily held by men. Women in Sumba consume an average of 12 kg of domestic firewood per day on open stoves. In addition, the dependence of households on fossil fuels, specifically firewood, has had a significant impact on the environment and women's health. Furthermore, climate change has caused a decline in biomass, forcing women to travel longer distances and spend more time gathering fossil fuels. This finding suggests that women bear a significant burden when collecting and transporting firewood. The limited availability of modern energy technology has resulted in a substantial loss of time, leading to the exclusion of women from the decision-making process. Consequently, they have severely limited access to improved education, which is critical for human development. As a result, poverty enslaves a greater number of women. Time and energy constraints have significantly hindered their ability to engage in diverse activities that could generate productive income (Asia, 2019). Women are also typically limited in their access to information, skills, training, and labor markets, making them more vulnerable to violence. This impacts their ability to make decisions and express their opinions and limits their ability to access land and resources for production, technology and information, education, and health services (International Renewable Energy Agency (Nikolina, 2016).

Gender equality in energy access is evident and crucial, and women and children are the most impacted by the lack of energy access. Women serve as key agents for change, and as primary managers of energy in households, they have the potential to play influential roles in expanding access to sustainable modern energy, embracing energy-efficient technologies, and enhancing consumer behaviors. Every energy planning and policymaking stage must consider gender dimensions and actively promote women's leadership. Engaging women throughout the entire process of designing contemporary energy access technologies and programs is crucial. (Tiwari et al., 2021). In developed nations, the concept of gender encompasses all marginalized

populations, while in underdeveloped or developing nations, it primarily focuses on women's issues, emphasizing a fundamental difference. In poverty-stricken countries, energy plays a significant role in shaping gender dynamics, whereas in developed nations, gender is seen as a significant factor in shaping the energy problem (Erten et al., 2024).

Social capital has played an essential role in the development program by fostering a robust civil society, achieving equitable and sustainable development, and empowering society and government. According to (Woolcock & Narayan, 2000), social networks and community associations, part of social capital, are valuable resources for addressing poverty and vulnerability. (Woolcock et al., 2002) support this argument by asserting that civil society plays a crucial role in poverty alleviation programs through its impact on social capital. UNESCO adopts a social capital approach that involves a cross-sectoral integrated approach, fostering close collaboration between the government, community, and private sector. Social capital, defined as the social networks, relationships, and connections that individuals and communities have, is a crucial concept in the field of social welfare studies due to its substantial influence on community welfare. It serves as both a bonding agent and a valuable asset for enhancing social well-being and overall quality of life, as extensively addressed by (Coleman, 1988). Nevertheless, it is essential to acknowledge the existence of power dynamics when understanding the current state of capital development. According to (Gilleard, 2020), the intricate connection between power and social capital, explains their role in maintaining established social structures. Conflicts of interest frequently occur in social capital, particularly involving individuals with power at the local level and between communities with resources (Harriss, 2002). Social capital plays a significant role in the development agenda and is closely linked to culture, institutions, and democracy. However, it can have positive as well as negative impacts on society, and its ability to foster social cooperation relies on the quality of social relationships (Fukuyama, 2002). Individuals who are acquainted typically utilize social capital, resulting in exclusive benefits for those who share a close and trusting relationship (Tamayo, 2003).

The Sumba Iconic Island project is a collaborative effort between the Ministry of Energy and Mineral Resources, the Ministry of National Development Planning (BAPPENAS), and non-governmental organizations. Its objective is to transform Sumba Island, particularly East Sumba Regency, into a region that can thrive by harnessing and utilizing renewable energy sources (Lomi, 2016). The project aims to foster a more inclusive and gender-equitable economy, ultimately improving the welfare of the local community. The strategy of using a synergy approach in the development of renewable energy programs in East Sumba was implemented by civil society groups affiliated with the Gender Focal Point Humba Hammu (GFP Humba Hammu) consortium network. GFP Humba Hammu's primary objective is to promote and enhance women's participation and empowerment in the renewable energy industry (Asia, 2019). The intervention in the utilization of the renewable energy program by community consortium networks like GFP Humba Hammu is to mitigate the potential for unequal power dynamics among women, men,

and marginalized castes. It accomplishes this by encouraging constructive collaboration among community members, equitable dynamics within the household, and an open-minded attitude that enhances women's confidence in taking on more influential roles in leadership and decision-making. To improve their quality of life, household members will be more conscientious about avoiding conflicts to increase their income and minimize unnecessary expenditures. The methodology used in the community activities such as Gender Action Learning and Sustainability (GALS), allows men to maintain their masculinity while acknowledging the benefits of resource sharing in promoting a more inclusive society.

Based on the above background, this research aims to explore how renewable energy programs can address these challenges and promote gender equality. Thus, the benefits of this research are very important because renewable energy utilization plays an important role in the planning and implementation of renewable energy programs. A community consortium initiated this synergy approach to transform governance processes and encourage more inclusive decision-making. It aims to create opportunities to renegotiate gender and social injustices that are prevalent in the context of renewable energy.

METHOD

This research was conducted in Luku Wingir Village, Kambata Mapambuhang district, East Sumba, using a qualitative approach. The study employs descriptive research to provide an in-depth exploration of the social phenomenon without manipulating variables, focusing on social situations, relationships, and settings. This approach is further strengthened by incorporating a gender perspective, following the framework established by (Lawrence Neuman, 2014), which views gender as a social construct influencing various aspects of life, including interactions and relationships. As highlighted by (Bermúdez Figueroa et al., 2023), gender-focused research aims to uncover unequal power relations within societal structures and contributes to the knowledge base on gender equality in law and society.

The research was conducted between February and April 2024 and focuses on understanding the power dynamics in Luku Wingir Village. It examines how social capital and the renewable energy program contribute to gender equality and address power imbalances. Data collection involved focus group discussions and in-depth interviews with key informants in Luku Wingir Village and Waingapu. To enhance the study's analysis, secondary data was gathered from program reports, literature reviews, and relevant academic research, including journals and scientific papers.

RESULT AND DISCUSSION

Power Dynamics in Social Capital

In Sumba, gender inequality still exists because of cultural factors that make it challenging for women to assert their rights, including gaining equitable economic access. In the patrilineal

and patriarchal Marapu customary structure system, women's roles are defined by marriage, having children, and doing housework. (Kleden, 2017) asserts that the cultural dominance of men primarily leads to various forms of unjust treatment of women in Sumba. Because of this, women in Sumba are at a disadvantage regarding economics, self-empowerment, and traditional leadership roles. The community's social and cultural structure assumes that women are the only ones who can do housework and care for children, even though women also work to meet household needs. This patriarchal dominance disadvantages women economically and in leadership. Despite also providing food, rearing livestock, farming, and crafting, women's contributions yield minimal financial returns. Traditional customs, a dominant patriarchal system, limited educational opportunities, and exclusion from decision-making and asset ownership perpetuate poverty and gender inequality on the island. In Luku Wingir Village, similar to the broader Sumba culture, a hierarchical structure based on tradition results in unequal treatment of men and women. Women's roles are defined by marriage, reproduction, and domestic labor, with elderly women respected as guardians. Unmarried or widowed young women face social pressure and prejudice. Early marriage, often involving kidnapping and coercion, is common. Other than their dowry, women can't inherit or own land. The purchase of land is contingent upon marriage. Clan domains mark territorial boundaries, and individuals identify with their ancestral villages, rato, who are religious leaders, maramba, who are nobles, aristocrats, political leaders, and clan leaders, kabihu, who are people who say they are free and independent, and ata who are the most subordinate from all clan. The term "Ata" refers to servants known as tau kuru umma, who fall into three categories: the heritage servants, originally brought by the Sumba people's ancestors. Subsequently, the Sumba people either bought new servants (with customary animals as dowry) or captured them as prisoners during the war, leading to their enslavement. Lastly, parents bestow innate servants upon their children in marriage.

Women in Luku Wingir are excluded from the decision-making process, particularly in village development planning meetings. This is because they spend six hours each day shelling and winnowing corn to feed their families. The only alternative they have to grind corn is to travel to Waingapu City, which is time-consuming and requires a lot of energy. This is due to the limited availability of electricity in their village. Factors that contribute to poverty include poor health, a lack of education, inadequate living conditions, low-quality employment, gender inequalities, and the risk of violence. Typically, these issues primarily affect women, making them unable to meet their daily requirements. Electricity is scarce in the majority of regions on Sumba Island. Women in Sumba, particularly in Luku Wingir, experience restricted availability of efficient and accessible energy resources. Only a few communities have access to gas fuel, while most depend on kerosene and firewood. The climate crisis worsens women's access to energy sources as they are forced to travel longer distances to gather twelve kilograms of firewood daily for household purposes. As a result of this situation, women and girls experience a loss of time for participating in village decision-making processes, especially in the discussion of the utilization of the renewable energy

program. Additionally, they face limited educational opportunities due to the distance of schools, with priority given to boys. Furthermore, due to time constraints, women have reduced access to engage in various income-generating activities. The intersectionality of other issues, such as poverty, also considers energy access and gender. Within the domain of household labor, there is a significant gender imbalance, with women primarily assuming these duties (O'Dell et al., 2014). According to (Women & Oanh, 2023), available data and evidence demonstrate that gender roles hinder women and girls from actively participating in, benefiting from, and leading in the energy and related sectors. This, in turn, prevents them from fully realizing and enjoying their human rights and obstructs sustainable development. These obstacles intersect at different points in the lives of women and girls, but they typically begin as limited opportunities to pursue higher education, especially in the fields that serve as a pathway to enter the energy industry.

Gender Equality in Renewable Energy Program

Studies from various literature sources conclude that women benefit significantly from renewable energy interventions. In addition to access to energy, women can get more benefits from small-scale renewable energy projects; among others, they can manage their time better and feel safer when doing activities in the village at night. They can also start using modern equipment to improve processes, reduce the burden of household chores, or increase their business and livelihood production (Haning, 2023). Since 2015, the community in Luku Wingir Village has been dependent on kerosene or oil lamps due to limited access to energy. Additionally, the village faces inadequate infrastructure challenges. The conditions in Luku Wingir Village started to transform when it gained access to electricity from a neighboring village, Waimbidi Village, through a micro hydropower plant with a capacity of 26 KW. This project utilized local village funds (APBD) and involved direct community participation in the construction process, as well as providing training for the community to maintain it. The micro-hydro's remote and insecure location prevented women from participating in maintenance or construction. Nevertheless, women play an active role in the utilization and operation of micro-hydro systems. For instance, a village-owned enterprise (BUMDes) Luku Wingir has a dedicated business unit for energy and natural resources. This unit's primary function is to collect electricity fees. In the main village, the women are in charge of collecting the fees and depositing them into the cooperative. The micro-hydro technicians use these funds to cover their operational costs and maintenance. Over the past four years, the village has experienced uninterrupted electricity supply for a full day. While it is true that not all households have equal access to electricity, the implementation of microhydropower has significantly contributed to improving the household economy. Individuals can engage in productive endeavors during the nighttime hours. Furthermore, the provision of additional time for independent research beyond regular school hours has enhanced the quality of education. The local government and international non-governmental organizations, such as Hivos, have supported the installation of solar panels in multiple residences. Most residents continue to depend on conventional stoves for their cooking needs. Only five families in the village

currently use the biogas stoves that the Department of Women's Empowerment (KPPPA) and Hivos donated.

In Luku Wingir Village, the Sumba community consortium carried out a pilot project on the utilization of renewable energy involving multiple stakeholders. The project's goal was to integrate gender issues at the village level by utilizing renewable energy. The synergy approach to social capital can be a powerful tool for addressing power dynamics in communities and organizations. By fostering collaboration and emphasizing the strengths of diverse stakeholders, this approach helps balance power and promote more equitable outcomes. In 2020, community groups representing women, indigenous peoples, and civil society on Sumba Island formed the Gender Focal Point Humba Hammu (GFP Humba Hammu) group, exemplifying a community association within social capital. GFP Humba Hammu's work focuses on advocating for women's involvement and empowerment in the renewable energy sector. (Woolcock & Narayan, 2000), explain that development outcomes come from different types and combinations of community capacity and state functioning. The core idea of social capital lies in the relationship between the state and society, and different interventions are required to bridge social capital within a group, community, or society. The roles played by the GFP Humba Hammu are not only a bridge in the relationship between the village community and outside groups, but they also facilitate synergy between the community, government, and private sector, ensuring that the approach can overcome the inequality of power relations in feudal and patriarchal Sumba society, and strengthening the community of Luku Wingir Village, especially women and marginalized caste such as *ata* to have knowledge on village budget for community development and capacity-building programs related to Gender Action for Learning and Sustainability (GALS). One of the village facilitators from the village expressed their gratitude for the opportunity to participate in GALS training conducted by GFP Humba Hammu. "As Sumba women, our traditional role of household care, confinement to the kitchen, and firewood gathering has diminished our pride. Despite our status as the second most important person in the household, the community rarely includes us in discussions or allows us to make decisions. We learned about the crucial role women play in both the household and the community during our training. The Humba Hammu training allows us to voice our needs and engage in village planning and governance discussions with the village government. With the support of GFP Humba Hammu, I gained confidence, and in 2022, I was appointed by the Village Head as the leader of the Welfare and Services Section. This achievement instills me with pride, proving that women can excel when allowed to express their ideas and suggestions, a value the village values." (RL, 35 years old, field facilitator)

The renewable energy program in Luku Wingir village has successfully built dynamic social relations between nonprofit organizations, the community, and the Luku Wingir Village government to enhance resilience in the face of changes in feudal and patriarchal community norms while also contributing to the efforts to greater equality in this relation. (Okali, 2011) highlighted the significance of conducting an in-depth analysis of household dynamics and

poverty, which ultimately revealed the necessity of redistributing power in social relations between genders. According to (Cole et al., 2015) involving women in the process of developing and changing gender relations between men and women is crucial for effectively addressing poverty and achieving the wider objectives of gender equality and equity. The synergy approach can be successful because it involves bonding and bridging social capital. (Lancee, 2012) explains that the key distinction between bonding and bridging social capital lies in their respective focuses. Bonding social capital refers to connections within a specific group, with an emphasis on maintaining the group's cohesion and integrity. On the other hand, bridging social capital places greater importance on relationships between different parties, aiming to foster progress and exert a positive influence on the internal dynamics of the group through external connections. In this instance, GFP Humba Hammu performs both tasks. In accelerating power dynamics and gender equality through renewable energy programs, the important factors are trust, social networks, and mutual relationships between individuals and organizations; shared norms of behavior and commitment, including value, vision, and mission; and an effective channel of information access from the outside and within the community. As has been mentioned by the participant in the GALS training in renewable energy program, significant behavioral changes related to gender relations from the gender equality program include the division of roles and family financial management between men and women being more equitable. "Now that there is a division of family roles in sharing domestic chores, we women have more time to take care of ourselves. The men have successfully cut down on their expenses. Following the training, a shift occurred; both men and women showed diligence in saving money, particularly for the future education of their children. There has been joint decision-making and prioritizing of family interests in financial management." (RSM, 37 years old, housewife)

Since 2020, the renewable energy program intervention in Luku Wingir Village has effectively utilized a collaborative approach to village planning. This approach prioritizes the efficient utilization of sustainable energy sources and includes the participation of all individuals living in the village. The intervention uses a social and gender integration strategy to ensure that the project's main results are social and gender inclusivity. This planning aims to maximize the socio-economic advantages for all individuals and promote equal benefits for women and potentially marginalized groups. Gender Action Learning for Sustainability (GALS), a community-based empowerment program, also employs participatory learning. Its goal is to raise household awareness of equal responsibility, improve women's ability to manage renewable energy profits, and maximize male participation in development. The tools encourage women to participate in village planning and start renewable energy micro businesses. These tools empower traditional families and improve gender dynamics (Hivos, 2000). Participatory approaches do not mean that they are free from problems, (Mosse, 2013) highlighted a key challenge in addressing established hierarchies, which is an important issue in the social capital discourse. While participatory approaches can leverage beneficial networks and leadership capacities, they still struggle to

overcome the conflict arising from the dominance of elites in decision-making processes. In this research, it is observed that village facilitators from the ata or hamba clan encounter challenges in negotiating or establishing a strong bargaining position with their master or maramba to attend the musrenbang meeting. Musrenbang or Musyawarah Rencana Pembangunan is a forum to discuss the planning process carried out by the relevant stakeholders in the communities. The musrenbang meeting invites and empowers all community members, especially women, to actively participate, express their opinions, and influence decision-making and fund allocation. The majority of the maramba clan consists of village leaders who have gained advantages, opportunities, and benefits from their involvement in the participatory community meeting process known as musrenbang. Although renewable energy programs offer new possibilities, they can also worsen marginalization in regions where unequal power dynamics and vulnerability persist. In a society characterized by gender bias, the establishment of women's networks and their capacity to initiate action are essential for the widespread dissemination of innovative ideas and practices, particularly within local communities (Kumar & Igdalsky, 2019).

However, community organizations such as Gender Focal Point Humba Hammu have focused their efforts on advocating for village regulations that encourage participation and inclusivity. They aim to promote the representation of marginalized groups, including women, people with disabilities, and individuals from lower-caste backgrounds such as ata or hamba. These initiatives aim to engage these groups in the initial stage of local development implementation, such as the local planning or Musrenbang meeting. In 2019, Luku Wingir Village implemented local regulations regarding the integration of gender perspectives in renewable energy. The law mandates the efficient utilization of energy resources in Luku Wingir Village to stimulate economic activities, create employment opportunities, ensure gender justice, and promote equality, as these resources are vital for the livelihoods of numerous individuals. Women who can effectively utilize energy resources experience significant economic empowerment, particularly in rural areas. Nevertheless, the effectiveness of these interventions relies on several factors, including the accessibility of financial resources, technical expertise, and supportive laws (Pueyo & Maestre, 2019). The planning process is crucial as it establishes a comprehensive strategy for the well-being of individuals, which will be implemented by the relevant stakeholders. Therefore, it is imperative for all development programs, particularly those of the renewable energy program, to actively involve women and marginalized groups to expedite gender equality and promote village development. This is also a component of their endeavor to promote enhanced gender-responsive planning and allocation of resources for renewable energy at the local level.

Social Capital and Replicating Position of Power

Bourdieu viewed social capital as an attribute of the individual, rather than the group, primarily acquired through one's social position and status. Social capital empowers an individual to exert influence over a group or individual who mobilizes resources. According to Bourdieu,

social capital is not equally accessible to all members of a group or collective. Instead, it is accessible to those who make efforts to obtain it by attaining positions of power and status, as well as by cultivating positive relationships (Gilleard, 2020). According to Bourdieu, social capital is inherently linked to social class and other forms of social hierarchy, which in turn are connected to different types of advantages or progress. (Molyneux, 2002) argues that conventional treatments of social capital frequently ignore both gendered inequality and gender politics. Development projects and policies focused on fostering social capital frequently rely on gendered assumptions. By relying on women's unpaid labor, voluntary self-help initiatives for poverty alleviation and community development inadvertently place significant but hidden burdens on women. (Putnam, 2000) defined social capital as a valuable asset for addressing shared challenges. He linked social capital to individuals' involvement in networks, adherence to social norms, and establishment of interpersonal trust, all of which contribute to improving the overall welfare of society. Nevertheless, a significant portion of this analysis is conducted without adequately considering the gendered and cultural aspects of the ideal community in the past, the nature of the current decline, or the recommendations proposed for the future. Essentially, women in Sumba encounter difficulties in achieving self-empowerment, economic independence, and assuming leadership positions due to the influence of traditional values. The state, tradition, and religion/church, all dominated by men, shape village politics in Sumba. Most Sumba people have adopted Christianity, along with the traditional religion of Marapu. The social structure is based on caste, (Twikromo, 2008) says that there are different social levels. These include rato, who are religious leaders, maramba, who are nobles, aristocrats, political leaders, and clan leaders, tau kabihu, who are people who say they are free and independent, and ata, who are servants who are called slaves. The power dynamics between the maramba and the ata are significantly different. People from the maramba group are at the top of society. They own land and other resources, play politics, and hold government positions. Other groups, especially the ata, have few rights because the maramba control the economy and society. Moreover, the ata are marginalized due to their limited access to social services, employment opportunities, means of subsistence, and decision-making processes. Women, especially those from low castes, live below the poverty line with limited access to resources and asset ownership. Therefore, the prevalence of male dominance in power and privilege within Luku Wingir Village is a multifaceted phenomenon that is shaped by historical, cultural, and social factors. Traditional gender norms can influence how men and women establish and utilize social capital.

Similar to how gender and culture played significant but unnoticed roles in the development of the liberal citizen or welfare state (Arneil, 2013). According to (Lowndes, 2004), political science often neglects gender dynamics and tends to exhibit a bias towards males rather than maintaining gender neutrality. When it comes to putting concepts into practice in the social capital debate, there has been an excessive emphasis on activities that are predominantly dominated by males. Social capital can reinforce existing gender hierarchies in society. Men in patriarchal societies

generally have more opportunities to access social networks and resources, which can increase their social capital. On the other hand, women frequently encounter restrictions in these domains due to the potential impact of their social interactions and the specific context in which these interactions occur on their political resources and participation. Various factors may hinder women's capacity to transform social capital into political resources and engage actively in politics because social capital is found within individuals as a result of large-scale social, economic, and cultural systems that provide advantages through their social connections. (Arneil, 2013); (Gilleard, 2020). It is crucial to recognize that these circles of power often neglect marginalized groups, as (Lin, 2002) highlights marginalized groups face disadvantages due to unequal access to social capital within the social structure of society. In this case, those who hold power, such as men from the maramba clan, control social capital in the village. The maramba men may have more access to influential networks, such as business or political circles, which can enhance their social capital than women and from the marginalized clans such as ata or hamba.

The issue of power and inequality in social capital always emerges. Social capital can enable transactions between specific interest groups, while simultaneously excluding other groups from accessing resources. Policymakers' enthusiasm for the social capital concept is at odds with the nuanced understanding of the diverse interests and identities that exist within all communities. Community-based resource management approaches must consider the impacts of political dominance and exclusion. (Cleaver, 2017). (Burt, 1998) argues that understanding the intersection of gender dynamics and social capital is crucial, as gender can have a substantial impact on an individual's access to social capital due to differences in behavior and networking opportunities. (Burt, 1998) found that men typically possess larger and more varied networks, which offer enhanced access to resources, information, and opportunities for advancement in comparison to women. Furthermore, gender norms and expectations play a role in shaping networking behavior. Men are typically encouraged to engage in instrumental and competitive networking strategies, while women might lean towards relational and collaborative networking approaches. The research of social capital from a gender perspective raises important questions about how social capital is distributed, the differences in its characteristics, and the disparities in its utilization. Research comparing the amount and characteristics of social capital available to men and women demonstrates inequalities in their capacity to obtain it and the advantages they derive from activities that produce it (Arneil, 2013).

Addressing Power Dynamics in Social Capital through a Synergy Approach

The synergy approach to social capital is a conceptual framework that highlights the positive outcomes achieved through collaboration between governmental and societal actors. The concept suggests that collaborations and connections between the government and civil society can create social capital and result in improved governance and community development. When utilized in the context of power dynamics, the synergy approach can rectify inequalities and promote outcomes that are more inclusive and equitable. (Woolcock & Narayan, 2000), identified

that proponents of the institutional view argue that the vitality of community networks and civil society is largely the product of the political, legal, and institutional environment.' The approach views social capital as a dependent variable whereas the communitarian and networks perspectives largely treat social capital as an independent variable giving rise to various outcomes. (Woolcock & Narayan, 2000) assert that different combinations of societal capacities and state functions lead to development outcomes. The fundamental concept of social capital revolves around the relationship between the state and society. To foster social capital within a group, community, or society, various interventions are required. The World Bank considers social capital to be a crucial element for economic and social progress. It encompasses social networks, norms, trust, and interpersonal interactions that facilitate collaboration among individuals and groups in society. This collaboration can enhance the efficiency and effectiveness of development efforts (Grootaert, 2003). The community groups incorporated into the consortium network serve to establish a connection between village communities and external groups. Additionally, they promote collaboration between communities, government, and the private sector while also addressing the imbalanced power dynamics prevalent in Sumba society, characterized by feudalism and patriarchy..

CONCLUSION

The persistence of gender inequality in East Sumba, rooted in the patrilineal and patriarchal Marapu system, continues to limit women's rights and economic access. This research highlights how traditional cultural norms, caste systems, and male-dominated institutions in places like Luku Wingir Village perpetuate poverty and marginalization for women. Despite their contributions to household needs, women face significant economic disadvantages and are largely excluded from leadership roles. The renewable energy program offers a potential solution by addressing these power dynamics and promoting gender equality through increased access to resources and participation in decision-making processes. By challenging entrenched gender norms and enabling women to engage in social capital networks, the program can help shift the balance of power in favor of more equitable gender relations.

For future research, this study contributes valuable insights into how renewable energy initiatives can serve as platforms for gender empowerment. Future investigations should focus on long-term impacts, exploring how such programs influence not only women's economic roles but also their social standing and political engagement. Additionally, more research is needed to evaluate how these models can be adapted to other rural communities with similar cultural barriers, potentially establishing best practices for integrating gender equality into sustainable development programs. This research lays the groundwork for future studies aimed at dismantling deep-rooted social structures that hinder gender equity..

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