

Advancing Gender-Inclusive Water Management: Insights from Women's Experiences in Rural Philippines

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ABSTRACT

The United Nations Sustainable Development Goal 6 (SDG 6) aims to ensure universal and sustainable access to safe water and sanitation by 2030. Despite this global mandate, the World Health Organization highlights persistent disparities, noting that billions of people remain without secure access to water, with women disproportionately burdened by scarcity. This qualitative study explores the lived experiences of women engaged in water conservation, framing these within the context of sustainable water management in Maramag, Bukidnon. Guided by Ecofeminism Theory, the research purposefully selected ten full-time mothers, emphasizing their crucial roles in household water stewardship. The inquiry specifically focused on women with primary caregiving responsibilities, excluding others, to highlight the intricate link between maternal duties and water management practices. Data collection involved semi-structured, in-depth interviews, analyzed thematically using Braun and Clarke (2020) systematic framework to identify recurring patterns. Findings indicate participants consistently endure multifaceted challenges, including historical water shortages, inadequate infrastructure, and limited, reliable water access. Despite these persistent obstacles, they implement innovative strategies such as deep well utilization, rainwater harvesting, judicious domestic water use, cross-community sourcing, and collaborative water rationing. These practices are often integrated into broader community initiatives and partnerships with local government units (LGUs). These findings reveal the crucial yet often underrecognized contributions of women in addressing water insecurity, reinforcing the urgent need for inclusive, equitable solutions aligned with United Nations Sustainable Development Goal 6 (SDG 6).

Keywords: Ecofeminism, gender and environment, water conservation practices, water insecurity, sustainable water management, Household Water Management

INTRODUCTION

Water is a fundamental human need, essential for survival, health, and everyday household activities such as drinking, cooking, sanitation, and hygiene. Despite its critical importance, equitable access to potable and adequate water supply remains a persistent impediment in several global contexts, predominantly within developing nations such as the Philippines. Empirical evidence accentuates that a significant proportion of populations in these regions endure lingering deficits in both the quantity and quality of available water resources (Tadadjeu et al., 2023). Reflecting this reality, the United Nations Sustainable Development Goals (SDGs), particularly Goal 6, explicitly emphasize the imperative of ensuring universal availability and sustainable management of water and sanitation. Achieving safe, affordable, and reliable water access is therefore integral to advancing public health, environmental sustainability, and social equity. However, millions of people, especially those in rural and marginalized areas, continue to suffer from water scarcity and unreliable water access.

Women and girls are at the forefront of this issue. In many households where water is not readily available on the premises, women are primarily responsible for collecting, using, and managing water, often dedicating a significant portion of their day to this labor-intensive task. According to the United Nations, women in low-income nations frequently spend hours each day fetching water, a responsibility that significantly affects their health, education, and economic opportunities. Despite their critical role in household water management,

women are often excluded from decision-making processes in water governance due to entrenched gender discrimination, cultural constraints, and the absence of gender-responsive policies (Cosgrove & Loucks, 2015; Garcetti & Kevany, 2023).

While prior studies have addressed issues such as the unequal distribution of water and technical challenges in water infrastructure, few have explored women lived experiences as proactive agents of water conservation. A clear gap remains in understanding the gendered dimensions of water scarcity, particularly how women devise and implement innovative strategies for managing water resources in their homes and communities. This lack of focus highlights the need for research that captures how women navigate and respond to water shortages in specific local settings.

This study seeks to address that gap by examining the experiences of women in Barangay Camp One, Maramag, Bukidnon, where households are currently grappling with a significant water crisis. It aims to explore the challenges women face during water shortages, the strategies they adopt for water conservation, and the broader implications of their roles in household water management. By analyzing these lived experiences, the study contributes to the discourse on gender and water governance and proposes policy interventions that support and empower women, particularly mothers, who are confronting the impacts of water scarcity. Access to clean and sufficient water remains a major challenge in many developing countries, impacting health, well-being, and economic development. While there has been progress in expanding access, significant disparities and barriers persist, especially for poor and rural populations.

Theoretical Framework

Grounded in the Ecofeminism Theory of Françoise d'Eaubonne (1974), as cited by Dong and Kim (2022), ecofeminism is explained as a natural connection with nature and women's social role as housekeepers. The study used the theory to understand how women's roles in water conservation practices can contribute to the sustainable goal of water management. This can be applied in sustainable water management by emphasizing the intersection between women's traditional roles as water stewards and their capacity to drive effective, equitable water management. Ecofeminism highlights how women, often primary users and protectors of water due to their domestic and caregiving responsibilities, possess unique insights and motivations for conservation, which can be employed to improve water resource sustainability.

Statement of the Problem

The study explored women's experiences in water conservation at Zone 10, Camp One, Maramag, Bukidnon. Specifically, the study attempted to answer the following questions:

1. How do women describe their experiences of water shortage?
2. How do women deal with water conservation issues?
3. What are the water conservation practices of women towards achieving SDG?

LITERATURE REVIEW

This presents the related studies of water conservation practices among women. Although there are some different aspects, they are all related to the current study in some way.

The United Nations General Assembly (2015) resonated that its goal by the year 2030 will be to give everyone access to water that is both safe and inexpensive. Aim to ensure a sufficient and consistent supply of drinking water. Additionally, according to the report of United Nations data, there is a sufficient amount of freshwater on Earth to support human requirements.

In the Philippines, the National Water Resource Board (NWRB) is responsible for planning, coordinating, and integrating all operations related to water resource development and management. Its primary goal is to ensure that all of the Philippines' water resources are developed methodically and scientifically by the concepts of

conservation, protection, and optimal usage to meet both immediate and long-term demands (Magwilang EB. et al. 2023).

The report of the World Bank Group (2021) discussed that women have played a crucial role in water resource management and issues, and their participation is also important for effective governance in this sector. Water management and irrigation development plans should include all the users. The World Health Organization (WHO, 2023) noted that without reliable access to clean water, women struggle to achieve their basic needs and realize their full potential, in the advancement of gender equality as well as women's empowerment. In connection, women are especially exposed to the effects of water scarcity because they have a greater share of the responsibility for monitoring family water usage.

METHODOLOGY

Purok 10, Camp One in Maramag, Bukidnon, is the study location. This area is a suitable source of data because all of its residents have been affected by water scarcity. The site covers 2.9 hectares and includes 144 households comprising 166 families, with each household occupying an area of approximately 10 by 10 meters. All of the residents in this community were relocated due to road widening and property demolition in their previous location. In addition, this specific area has experienced water shortage for a couple of years, which not only affects household activities but also hygiene and survival. These issues of water scarcity are a challenge for everyone, especially housewives who are more often left in the house to do household chores and are the ones who are mostly affected by water shortage.

This study focused on exploring women's water conservation practices for sustainable water management. To achieve this, a qualitative case study method was employed to examine the experiences of women in Purok 10, Camp One, Maramag, Bukidnon, regarding water conservation. This approach, as defined by Crowe (2011), allowed for an in-depth investigation of real-life phenomena within a specific context, particularly where the boundaries between the phenomenon and its context were not sharply defined. Ten full-time mothers were purposefully selected as participants based on their experiences with water shortages. The selection criteria included: (1) being a woman and identified as a mother, (2) having resided in the area for approximately 2-3 years, (3) being between 25-50 years old, and (4) experiencing water shortages and willingly participating in data collection. Data were gathered through semi-structured, in-depth interviews, which allowed for detailed information collection while providing flexibility for follow-up questions and further exploration of responses. These interviews were conducted in Cebuano to ensure participants' understanding, with questions translated from English. According to Yin (2006), thematic analysis in qualitative case study research involves identifying patterns or themes within the collected data that relate to the research questions or propositions. The analysis involved a systematic process of reading, coding, organizing themes, reviewing, defining, and documenting the data. Finally, the research instrument was validated by the researcher's advisor. Additionally, ethical considerations were carefully followed to obtain informed consent from the participants, specifically the full-time mothers in Camp One, Maramag, Bukidnon, who were fully briefed on the research objectives, methods, and potential risks. Participants' privacy and confidentiality were protected, and all data were used solely for the study's purpose. Researchers ensured participants' comfort during interviews, respected cultural and linguistic differences, and emphasized their right to withdraw at any time without penalty. Participants were fairly compensated, and academic integrity was maintained through proper citation and plagiarism checks.

RESULTS AND DISCUSSION

This section presents the salient information derived from comprehensive in-depth interviews. To uphold the confidentiality and privacy of participants, actual names have been omitted. Instead, pseudonyms are assigned to symbolize each participant's unique contribution to water conservation and their commitment to sustainable water resource management. The study systematically investigates three primary themes, providing nuanced insights into the lived experiences of women residing in Purok 10 Camp One, Maramag, Bukidnon, who face recurrent water shortages. These themes include: (1) experiences in water shortage, (2) dealing with water issues, and (3) water conservation practices adopted by women in alignment with sustainable development goals (SDGs). The analysis commences with a profile of full-time mothers, followed by an exploration of their firsthand experiences with

water scarcity, their coping mechanisms, and concludes with proposed recommendations aimed at enhancing water management interventions.

Summary of Distinct Cases on the Experiences of Women in Water Shortages

Zone 10, Camp One in Maramag, Bukidnon, is a small community with 144 households that has faced chronic water scarcity for several years due to underdeveloped infrastructure and environmental challenges. The residents, many of whom were relocated because of road widening and demolition, experience severe water shortages, especially during the dry season. This scarcity heavily impacts daily life, particularly for women, mostly full-time mothers, who are primarily responsible for managing household water use. Their daily tasks in the households become difficult when water is limited or unavailable. Moreover, this long-term situation needs to have sustainable solutions to address the water shortage and promote sustainability for the development of the community, specifically for women. Addressing this global water crisis requires a multi-faceted approach that involves water resource management, adaptation to climate change, and sustainable development ways and strategies.

Case 1: Lisa, the Sustainable Mom

Lisa is a 35-year-old mother of 3 children and a housewife. Living in an area affected by water shortages, she faces significant challenges related to water access. Lisa is a housewife who stays at home every day and is more vulnerable to the challenge of water shortage. She shared with us her experience of the water shortage. *"I have experienced not having water; we can't bathe or do laundry, so we wait for the rain to collect water."*

Case 2: Cecelia, Conservative Woman

Cecelia is a 43-year-old married housewife with two children, a Conservative mom who values the essence of conserving water through budgeting. As she was in her house all day, Cecelia, held accountable for collecting water for them to have water to use, reiterated the importance of water in daily living. *"Water is very important because it is used for everything. If we have water, we need to budget it so it doesn't run out quickly, because water is essential. We cannot live without water; it is simply not possible to be without it. We can manage without electricity as long as we have water."*

Case 3: Melissa, Innovative Mom

Melissa is an innovative 50-years-old mother who utilizes deep wells as their household water source completed her education and graduated at the secondary level, a stay-at-home mother of 6, she showcased the challenges of water access in her area where water is not potable for drinking she notes the importance of water for hygiene and sanitation, stating that without it, basic household functions cannot be performed recalling the exhausting efforts required to secure water when access was limited. However, challenges to water access in the area still exist. She shared her experiences of challenges. *"During the hot season, we struggled because we had to wash clothes in the river, and we spent 1-2 hours just to be there."*

Case 4: Ivy, Resourceful Housewife

Ivy, a 40-year-old resourceful woman, uses different resources to store water for their household. She is a housewife, married, and a mother of 4. She notes that her current situation is more challenging due to the water shortage. This makes them find alternative water sources to fetch, and to do laundry, they have to venture further, which adds to the burden of water collection. With the thought she shared regarding the challenges, she stated that, *"The water here is scarce, but when it rains a lot, we can store it. But during the dry season, it becomes the most difficult."*

Case 5: Nikka, the Nurturer Mom

Nikka, a 50-year-old mom, manages water in their household. Nikka is a housewife, widowed, and a mother of 6 children. She learned an effective strategy not to fall short of water, a strategy of budgeting the use of water in the household so it does not run out quickly; they rely on a nearby source for water collection. Occasionally, they

purchase bottled water for drinking and use other water for cooking and washing. Additionally, Nikka shared her frustration regarding the difficulties of living without a reliable water source: *"It's really difficult without water."*

Case 6: Fiona, the Generous Wife

Fiona is a 29-year-old mother of 2 and lives in a live-in relationship. Fiona has lived in the area for 6 years and has experienced the challenge of having no water. As a mother who stays at home, she juggles the responsibility of collecting and managing water in their household. With regards to the experience, she shared noting that, "It's okay here because there is a deep well, as long as it's not during the dry season". She explained that the situation worsens during dry periods when the deep wells may run slowly.

Case 7: Maddie, the Water Wise Woman

Maddie is a 33-year-old married mother of 3. Maddie notes a stark struggle for water, as they often had to rely on neighbors for water, purchasing gallons at five pesos each. She notes that water is essential for various household tasks, including washing clothes, bathing, cleaning, and cooking, although they mentions that the water from the deep well is not suitable for drinking.

As she shared her current *challenge*, *"We have to buy from the cento just to have something to use at home"*. This reflects their ongoing struggle to secure enough water for daily activities. As a woman and a family member, access to water is vital for health and well-being: *"Even if there is no electricity, as long as there is water, it is important for our body"*. They assert that life cannot be sustained without water, highlighting its critical role in their household, especially as water scarcity becomes an increasing concern.

Case 8: Cassandra, Aqua Angel

She is focusing on practical solutions on how to deal with water shortage and finding ways to have water in the household. Cassandra responded, *"We have a deep well here, but it is only for cooking, washing, cleaning, and bathing"*. It was evident that even though there was a source of water, it was limited only to some household chores; therefore, as she experienced this kind of issue, she adopted strategies to have sustainable use of water at home.

Case 9: Maria, Eco-friendly Mom

She is an eco-friendly mom, a full-time wife, carrying four children, and living in a live-in relationship. She mentioned that she experienced water scarcity in her current location at Zone 10, Comp-One, Maramag; however, they were utilizing "Tabay" or a deep well as a source of water conservation. Additionally, Maria also responded that, *"We used to have great water quality back then because we were connected to the water district of Maramag. However, if we cannot fetch, we don't have water"*.

Case 10: Tina, the Eco-saver Mom

Tina is a mother of three children and a full-time housewife. In her previous location, she enjoyed the convenient use of water because there was a water district that could supply water every day to their household. She experiences struggles in accessing water resources in her current location due to its inadequate infrastructure; as a result, they finds other alternative strategies for sustainability. She has mentioned that, *"We buy water for drinking because the water in here is not safe"*. Therefore, she supports sustainable water use and awareness of pollution's impact on local water resources. Moreover, this presents the experiences faced by women in the water shortage and their challenges in accessing water resources.

Problem 1. Experiences in Water Shortage

The theme reveals women's experiences with water issues at Purok 10 Camp-One, Maramag, Bukidnon. Thus, ecofeminism theory acknowledges the natural connection with nature and women's social role as housekeepers. This theme resulted in 2 sub-themes: (i) Comparisons from past to present experiences in access to water, (ii) Struggles in access to water, (iii) Problematic water infrastructure development.

Comparisons from Past to Present Experiences in Access to Water

The need to adapt to a new environment and the transition from a reliable water source to one that lacks basic amenities like a faucet have created considerable difficulties for residents in Purok 10. This situation reflects broader issues in many communities, where access to safe and adequate water is a persistent problem.

A common thread among Ivy, Maria, and Maddie was that they had direct access to water from the community water district in their previous location. However, after relocating to Purok-10, they rely primarily on a deep well for their water supply. They have adapted to this change by collecting rainwater during rainy periods, an additional resource for their water needs.

“Back in Purok 2, the water there was very good, but here it’s really difficult.” – Ivy.

“We used to have great water quality back then because we were connected to the water district of Maramag. If we cannot fetch, we don’t have water.” –Maria.

“Before, our situation was different compared to here, especially when we just transferred here. Before, it was okay because we had a water district, but now we were utilizing a deep well.” –Maddie.

A notable pattern observed was the transition from a reliable water district supply to a more precarious situation in the new location, highlighting the fluctuations in water quality and availability, necessitating adaptive measures such as increased reliance on rainwater during periods of scarcity. The experiences shared about relocation and water management provide important insights into community adaptation strategies for changing water availability.

These results can be interpreted as evidence of larger systemic issues impacting numerous communities where obtaining safe and sufficient water remains a significant concern. Residents' dissatisfaction emphasizes the everyday challenges tied to poor infrastructure. Their experiences are a striking reminder of how critical reliable water access is to sustaining quality of life and the pressing need for enhanced services and infrastructure in newly settled areas.

This interpretation is reinforced by (SDG Development Goal 6). Access to clean and sufficient water is something developing countries look forward to. SDG 6 aims to ensure water availability and sustainable management, which is crucial in attaining and maintaining adequate water quantity and quality in urban and rural communities. Women are often the primary caregivers and water providers in households, playing a critical role in managing water resources. Their involvement in decision-making processes is essential for effective governance and sustainable management of water resources (World Bank Group, 2022).

Cassandra and Tina shared that the water from the well is not potable for drinking; they only used it for cooking, laundry, and bathing.

“Back in North Maramag, we used the convenience of the water district. However, the water district’s service cannot extend to our area. We do have a deep well, but this is only for laundry, sanitation, and cooking; however, it’s not potable for drinking because the Department of Health hasn’t certified it as safe for consumption.” – Cassandra.

“There is water, but intermittent. Here, there’s no water. We just dug a well, we only buy water for drinking, and there are some people selling water for 30 pesos per container.” – Tina.

Cassandra and Tina shared the same experiences with other participants who had access to water in their previous locations. When they got relocated, they struggled with access to water. However, both Cassandra and Tina added that the water from their well is not safe for drinking, and, for some consideration, it wasn't checked by an authority like the Department of Health (DOH).

All the data presented above reveal the situations of women in Zone-10, Camp-One Maramag, Bukidnon. All participants have been relocated, with varying durations of stay and previous locations. Despite these differences, they share similar experiences regarding water access and management. In their past locations, these women had

reliable access to water; however, after relocation, they found themselves without a primary water source. This situation reflects communities' difficulties adjusting to new environmental conditions and managing water resources.

Addressing water scarcity, as highlighted in the study by Rola and Francisco (2004), involved considering multiple factors. These included regulations on water supply, management of water demand, the establishment of suitable legal institutions, and the development of a social support system. It was essential to have a deeper understanding and evaluation of effective solutions that could be applied in a way compatible with the needs of different communities.

Struggles in Access to Water

Access to water is a fundamental necessity that shapes the daily lives of individuals and communities, particularly in areas facing water scarcity, highlighting the essential role water plays in household activities such as cooking, cleaning, and personal hygiene.

Several participants have reported that the drought season is the most difficult moment because their source of water, which is the deep well, will dry up.

"It was really difficult during the months when it was hot. Water is very important for bathing, and it is used for everything, especially as a mother who stays at home, and also for washing dishes and drinking." - Cecelia.

"We have our deep well here. During the hot season, it dries. It was really difficult." - Melissa.

"We have a deep well here, but if hot season, it will dry up." – Ivy.

"It's really hard without water because here in our place we only have a deep well, and during the drought season it will dry." - Maddie.

Cecelia shares her frustration and struggles, especially during hot seasons when the deep wells dry out. She stressed the importance of water, noting its crucial use in household activities like bathing, washing dishes, and as a source of drinking water. Melissa and Ivy faced the same challenges with water conservation during the hot season. The deep well dried up, making it difficult for them to access water for daily household chores. However, Maddie illustrates that it is really difficult without water, and she adds that relying only on deep wells that dry out during the hot season is problematic.

Moreover, the change in environmental temperature also affects the water source. The participants stated that they don't have water during the hot season, and their deep wells dry up because of the heat. All participants have consistently responded that their struggle in their area is water that can't be drunk because they have a deep well, and it is not safe to drink; they only buy distilled water for drinking. This showed the critical importance of water in their daily lives, revealing how deeply intertwined it is with their overall well-being and household functionality. For many, water is not just a resource but a vital necessity for various domestic activities, including drinking, cooking, cleaning, and personal hygiene.

Additionally, the interviewees' views of the profound impact of water scarcity on their daily lives show that water is not merely a resource but a fundamental necessity for health and household functionality. As Gleick (2014) discussed, access to clean water is essential for drinking, cooking, cleaning, and personal hygiene, all critical components of a healthy lifestyle. The reliance on alternative sources, such as deep wells or rivers, reveals significant infrastructural deficiencies, exacerbating the physical burden of securing water. Access to water is a fundamental necessity that shapes the daily lives of individuals and communities, particularly in areas facing scarcity, highlighting the essential role water plays in households.

Most of the participants have consistently responded that their struggle in their area is water that they can't drink because they have a deep well, and it is not safe to drink. They only buy distilled water for drinking.

"We only have a deep Well here, and it's not drinkable. We don't have any water from the water district yet, which is why we have to buy mineral water."—Cecelia.

"Our deep well here is not potable for drinking; we only buy mineral water to drink."—Fiona.

"For drinking, we only buy water, because the water from our well is not suitable for drinking"—Cassandra.

"This well, it's not that dirty nor clean, and also it's not potable or drinking, that's why it's difficult for us to access potable drinking water."—Tina.

The responses of participants showed the critical importance of water in their daily lives, revealing how deeply intertwined it is with their overall well-being and household functionality. They rely on deep wells, but this does not ensure the safety of potable water. For many, water is not just a resource but a vital necessity for various domestic activities, including drinking, cooking, cleaning, and personal hygiene. This struggle is compounded by the health implications of using non-potable water sources, for which the family needs to purchase bottled water for drinking. The role of women in drinking water and sanitation is considered a priority. Therefore, a tenet of the public proclamation said that the institutional framework for the development and administration of water resources requires considering the crucial role that women play as guardians of the living environment, providers, and users of water.

Laseca (2020) notes that access to clean water is fundamental for enhancing the quality of life and alleviating poverty, particularly in communities facing scarcity. The Sustainable Development Goals (SDGS) emphasize that universal access to safe and affordable water is a basic human right for health and well-being (UN General Assembly, 2015). Reflect this urgency as participants struggle to maintain hygiene and meet basic needs when their primary water source is compromised.

The adaptive strategies employed by women in this community—including the prioritization of rainwater harvesting, water budgeting, and collective sharing—demonstrate flexible and contextually appropriate responses to water scarcity. These practices have clear potential for adaptation in other rural or relocated settlements facing similar infrastructural limitations. Social learning, peer exchange, and support from local authorities could be leveraged to scale these strategies, provided they are tailored to each community's unique environmental and cultural context.

Problematic Water Infrastructure Development

Sustainable infrastructure development invests in sustainable water infrastructure, including the establishment of functional household tap connections, which directly reduces the time burden on women who typically spend hours collecting water. Aligned with the work of Saravia Matus (2024), she emphasized that such policies are essential to attain greater inclusion and equity. This is important as women are usually the most affected by water scarcity and play an essential role in the management of water resources.

All participants have mentioned, *"We have long dreamed of having access to water here; that is all we have been asking from the local office. We are just waiting for water, as they say, a water reservoir will be arriving. We requested this a long time ago, and they said a water reservoir will soon be installed in our area."*

Most of the participants expressed that, *"First of all, there's should be water district here, we need water because number one, we use it in comfort room and to clean ourselves, and of course, the women never serve if no water since we also use it for laundry, for cooking, and for washing dishes, it is useful for everything. It's not possible without water."*

As reiterated by the participants, *"We have a deep well where we can get water, but it cannot be consumed for drinking because it's not safe. We buy for drinking, but if the water reservoir we requested is here, we can drink from it."*

From that demonstration, it is clear that the majority of the participants have a lack of direct access to water has broader implications than is commonly perceived in gender equality and well-being in a community. Women, who

are primarily the ones involved in caregiver and water resource management, are affected the most, where scarcity in water can cut across their economic opportunities and overall empowerment.

As the World Bank Group (2022) suggests, the involvement of women in water resource governance is critical for effective resource governance and sustainable resource development. This also accords with the fact that policies that fail to consider the role played by women in managing water negatively impact health and sanitation. Moreover, this reinforces the idea that enhancing women's engagement through local initiatives not only benefits women but also contributes to broader societal goals.

These experiences of disruption and adaptation among women in Zone 10 closely echo patterns documented in rural and developing regions globally. For instance, studies in communities across sub-Saharan Africa and rural South Asia have reported similar challenges, with women adapting to unreliable or degraded public water infrastructure by collecting rainwater and seeking alternative sources such as untreated or unregulated wells (Sorenson et al., 2011; UNICEF & WHO, 2023). These commonalities underscore not only the universality of household-level water scarcity but also the critical, adaptive role that women play in sustaining water access in resource-constrained environments.

Problem 2. Dealing with Water Issues

It is essential to identify the specific problem and its underlying causes. Developing a comprehensive plan for management and prevention is crucial to ensure safe and efficient water use. Implementing regular maintenance, investing in proper infrastructure, and promoting community awareness can significantly reduce the impact of water issues. (i) Community action, (ii) Improved women's community engagement in water management, (iii) Collaborating with the local government unit (LGU).

Community Action

Community action is essential in water management as it empowers residents to take charge of their water resources and advocate for sustainable practices. Initiatives such as community water conservation education workshops and collaborative watershed protection efforts can significantly improve water quality and accessibility. By fostering a sense of ownership and responsibility, community action helps ensure that water management solutions are effective, equitable, and tailored to the specific needs of the community.

"There's a meeting before regarding water management in the community plaza. It has already been opened here before. Our councilor here is working hard to ensure we have water here." – Maddie and Maria.

Maddie and Maria responded to the importance of community meetings in discussing water management to support their needs and emphasized collective efforts to address environmental issues that impact the lives of women, particularly full-time mothers. These insights reflect the need for action regarding the concept of necessity for infrastructure improvements. From the results, it is clear that there's a need to dig a deep well to facilitate easier access to usable water in the household. This is a common challenge in many communities where water scarcity is prevalent, particularly affecting women's overall well-being.

The current research has been established by Magwilang EB. Et al. (2023) argued that its primary goal is the development of all the country's water resources in a planned and scientific manner, following the principles of conservation, protection, as well as efficient utilization to satisfy short-term as well as long-term needs.

Improved Women's Community Engagement in Water Management

Improving women's community engagement indicates strategic empowerment, especially participation in issues affecting people's lives, such as water governance. This is further strengthened by engagement, targeting women first. Thus, by keeping the ambience as inclusive and encouraging people to be part of initiatives at local levels and to collectively act towards benefits, communities would ensure voices are heard, leading to more sustainable outcomes in governance.

“Develop educational programs for women in water management. Provide support or initiatives that improve women’s participation in decisions about water, and development and policies that provide protection and support to women.” – Maria.

A popular explanation of the discussion aligns closely with the theme of improving community engagement by emphasizing the critical role of local initiatives in promoting women’s participation in water governance. It asserts that this movement was essential for empowering women and ensuring their active involvement in decision-making processes. This perspective is supported by the recognition that women are often the primary managers of water resources within households and communities, yet their contributions are frequently overlooked in formal governance structures.

This matches the study by Gebreegzabher (2018), which states that women are also significant participants in water management, mainly at the household level, and the need to take part in the issues of external water management has been on the rise; the level of decision-making power of women has never achieved equality. These studies indicate that women are actively engaged in water management, which leads to better outcomes for both households and communities.

Collaborating with the Local Government Unit (LGU)

Through this partnership with the LGU, communities leveraged local resources and expertise to develop effective strategies for conserving water and improving water quality. This collaboration also fostered public awareness and engagement, encouraging residents to participate in initiatives that promoted responsible water use and protected local water sources.

Out of the ten participants, only Maria has demonstrated that, “The LGU also issued an ordinance that seems to be part of the conservation of water at home, it’s not allowed to make a deep well (Tabay) here because it seems to have mosquitoes that can cause diseases”, but we have no choice because we don’t have any other source of water here.” – Maria.

his reveals the imperative gap in awareness of policies and the roles women could play in water management. Most participants were unaware of policies designed to support women’s involvement in water resource management. This highlighted the implementation gap that prevented these policies from reaching a broader audience, ultimately rendering them ineffective. This collaboration was not without its challenges; it required clear communication and mutual respect between stakeholders. Mutual respect fostered a constant desire to learn, as differing priorities often existed among partners (Barbier & Burgess, 2017). Successful collaborations hinged on shared objectives and a commitment to continuously improving to meet the community’s evolving needs.

In summary, these findings illuminated the crucial role that women played in water management within households and emphasized the need for targeted interventions that promoted equity and sustainability in water conservation efforts. The establishment of water districts, facilitated by effective collaboration with LGUs, was vital in addressing water shortages and empowering women affected by this global challenge. Through prompt action and community participation, there’s sustainability.

Problem 3. Water Conservation Practices of Women Towards Achieving SDG

Water conservation practices play an important role in water management. In the context of increasing environmental challenges and water scarcity, the role of women in promoting sustainable water practices has become more crucial than ever. Women, often the primary managers of household resources, possess both the responsibility and the potential to influence sustainable practices significantly. The theme has emerged in five categories: (i) water conservation practices for sustainability, (ii) utilizing deep wells, (iii) collecting rainwater, (iv) community support through water rationing, and (v) fetching water from an alternative source for conservation.

Water Conservation Practices for Sustainability

This is another strategy of conserving water within the household to secure the water supply for daily needs. This strategy could help the community that had limited access to water.

From Cecelia and Nikka's perspectives, it is important to budget household water utilization so it does not run out quickly.

"We need to budget it so it doesn't run out quickly." – Cecelia.

"When our water is in short supply, we will budget it when we still haven't fetched water." – Nikka.

Cecelia and Nikka have both adopted similar practices by implementing a water conservation strategy to prevent rapid depletion. Their responses highlight a collective awareness of the limitations of this resource, demonstrating a proactive approach to sustainability. By managing water usage effectively, they are taking steps to ensure that this vital resource is conserved and used efficiently, reflecting a broader community effort to address water scarcity issues.

Moreover, prioritizing water conservation strategies within households is crucial because water is used in various activities in the household. Further on, women ensure their families' needs are met and contribute to broader sustainability efforts, reinforcing their critical role in resource management, as mentioned by the World Bank Group (2021).

Utilizing Deep Well

A deep well served as an alternative water source for communities struggling with access to water. On top of that, Purok-10, Camp-One Maramag, Bukidnon, faced water challenges, especially for women, prompting them to seek other water resources. These challenges not only impacted their daily lives but also affected their health and well-being. Finding reliable sources of water was crucial for their families and the overall development of the community.

"We have a deep well here, but it is only for cooking, washing, cleaning, and bathing." – Cassandra.

"We only have our deep well because we don't have access to the water district." – Mellissa.

"We have our deep well here. And when we moved here, we first dug a well because there was no water in here." – Maddie.

"We really don't have water in here, we only dug a well." – Tina.

Cassandra noted that they have a deep well, but it is primarily used for laundry, washing dishes, and cooking. Melissa explained that she uses the deep well because there is no water district source available in their area. Maddie added that they have relied on the deep well since the day they relocated, as there was no water supply initially. Tina emphasized that due to the lack of water, they had to dig a well to meet their needs. The participants responded that they don't have access to water, and they only rely on deep wells for households. Additionally, it was important to consider the safety and security of the water before consuming it. This suggested that while deep wells could provide a reliable water source, there were underlying risks related to water quality and contamination. Further assessments and regular testing of the water were essential to ensure the health and safety of households relying on this resource.

According to the principles of Sustainable Development Goal 6, which emphasizes access to clean water for all, ensuring the safety and quality of water for human consumption was essential for health and well-being (UN General Assembly, 2015). Furthermore, access to water in households plays a crucial role in alleviating poverty and enhancing the quality of life. Water was a valuable resource within the home, as it was essential for various household tasks; without it, families could not function effectively. Women, in particular, were key to maintaining the family's health, sanitation, cleanliness, and overall household management.

Collecting Rainwater

There were various methods to address water issues. Collecting rainwater is an effective strategy for conserving water. This method reduced the burden of fetching deep water and lessened the workload of travelling long distances to find a water source.

Liza and Ivy reiterated that they are collecting rainwater for sustainable households as their other water source.

“The water here is scarce, and when it rains, we can collect a lot.” –Liza.

“Access to water is really difficult, and when it rains, we can collect a lot.” –Ivy.

This data highlighted the importance of rainwater harvesting, which Liza and Ivy engaged in. They collected rainwater as a supplementary and alternative water source when other sources were unavailable and stored it for future use. This practice aided in their sustainability efforts and contributed to conserving local water resources. In connection, they collected rainwater as a supplementary and alternative water source when other sources were unavailable and stored it for future use. This practice aided in their sustainability efforts and contributed to conserving local water resources. This practice exemplified a proactive approach to resource management, promoting self-sufficiency and resilience in the face of increasing water challenges.

Aligned with this perspective, Gee (2023) argued that rainwater harvesting was an effective solution to address water scarcity, and it could be easily implemented at the household level. This method was applicable in both rural and urban areas with limited access to water; however, a disadvantage was that rainwater could only be collected during the rainy season. In the context of Purok-10, Camp-One, this method was easily accessible to households; all that was needed was a large container for storage, along with responsible management for future use.

Community Support through Water Rationing

Given the global challenge of water shortages, developing partnerships and fostering reliance within communities can be effective methods for addressing these issues and adapting to the increasing demand for water.

A thread from Ivy connotes shows remarkable support in the community.

“During the hot season, the deep well here runs dry, so we have to rely on other sources of water, especially water ration from the barangay.” –Ivy.

Ivy shared her thoughts as the Purok leader took the initiative to request water rationing due to the deep wells drying up. This action by local officials demonstrates a strong social support system, highlighting the community's reliance on neighbors and collective efforts to cope with water shortages. The findings correspond with Peter Gleick and Charles Iceland's (2018) argument that droughts and the community's capacity for just governance and resilience in the face of these natural calamities influence the likelihood of water stress in the community. Members of the community developed a set of water use guidelines that guarantee fair access for all families, including specified locations and times for getting water.

Fetching Water from an Alternative Source for Conservation.

This theme arose from the conservation practices women employed to ensure a sustainable water supply in their households and their alternative strategies for coping with water shortages. These efforts not only reflected their resourcefulness but also highlighted the importance of community collaboration. By sharing knowledge and techniques, women were able to create more resilient systems for managing water resources effectively.

Most of the participants mentioned that they need to find other alternative water sources during the drought season, such as springs and rivers, and even travel to different places to collect and fetch water for their households.

“In fetching water, we reach Purok 9, still in Maramag, but sometimes we go to Luan-Luan in Quezon to collect water.” – Ivy.

“We went to Baraks in Purok 7, still part of Maramag in the South, where we fetched water and also did our laundry, we stayed there for about two hours.” –Cecelia.

“We go to the Maramag River and we’ll stay there for about three hours.” –Mellissa.

“We will find another source of water, like rivers where we can do our laundry. We go to Crystal busay, as they call it.” –Tina.

“At the Market we’ll get water, or at my husband’s sibling’s place we will ask for water.” –Fiona.

Participants demonstrate adaptability by travelling to various locations for water, showcasing their commitment to securing essential resources. The participants' innovation of seeking alternative water sources during droughts reflects a significant aspect of eco-feminism and underlines the intersection of gender, environment, and social justice.

As they adapt by travelling to distant locations for water, it shows that a disproportionate burden is placed on women, who are often responsible for water collection in rural areas, particularly during times of scarcity. This behavior illustrates the resilience and resourcefulness of women in the face of environmental challenges, emphasizing that their survival strategies are not just about accessing water but also about navigating resource availability.

According to the World Health Organization (WHO, 2023), women in many communities are deprived of time for certain activities and personal growth because they must spend hours every day obtaining water from far-off sources. Without access to water, the community relies on finding other sources of water even if it takes them hours to see, just to find water that could sustain their daily household use and for the consumption of their family members.

While this study offers a detailed picture of women’s ongoing responses to water shortages, future research could reveal how these experiences and strategies evolve over longer periods, especially as climate patterns and infrastructure change. Employing longitudinal methods would allow for an assessment of household resilience and adaptation over time. Additionally, engaging a broader set of stakeholders—including men in the household, local leaders, and water service providers—would generate deeper insights into community-wide water governance and collaborative problem solving.

Implications

The insights gained from this research shed light on the real experiences of women in addressing their unique struggles in the context of water management and conservation. This affirmed the significance of women’s roles in the management of water, emphasizing that they were the primary players in water conservation for sustainable use. Women have shown adaptive responses to water scarcity through their self-help initiatives, which significantly contribute to the water conservation practices in achieving SDG 6.

Furthermore, a profound understanding of the interventions identified is based on the responses of the participants; therefore, with the partnerships, local government units (LGUs) can further advocate for policies and the women affected by this problem. Ultimately, equitable growth in water policies tends to establish more effective management practices that benefit whole communities. However, such unawareness of such policies is one of the gaps that needs to be solutions and to be solved. Through the lens of Ecofeminism, this promotes awareness, considering the voices and experiences of women in environmental governance. Through ecofeminism, this disconnect can be addressed by centering women's narratives in environmental policy, promoting inclusive policy dialogues, and validating women’s traditional knowledge as integral to ecological sustainability. Ultimately, this research calls for the institutionalization of ecofeminist principles in water management, where gender equity, ecological care, and participatory engagement intersect. Doing so not only strengthens water management systems but also advances social justice by empowering women to shape sustainable futures for their communities.

The experiences documented in Zone 10 highlight urgent policy priorities for both regional and national decision-makers. Investments in resilient, community-managed water infrastructure are crucial, as is the establishment of clear quality standards for local sources. Programs that support women's leadership in water governance and decision-making can enhance the sustainability and social legitimacy of interventions. At the national level, integrating the lived experiences of women into broader water security frameworks will be essential for advancing Sustainable Development Goal 6, and for ensuring that policy measures reflect the realities of some of the Philippines' most vulnerable populations.

Action Plan

Local governments and communities, as well as institutions, must prioritize women's voices in environmental governance. Awareness of their experiences can drive policies that balance immediate needs with long-term ecological health. Bridging gaps in policy awareness is essential to ensure equitable growth and effective water management that benefits entire communities. Additionally, societies can develop sustainable solutions that not only deal with issues of immediate water needs but also foster long-term ecological health and social justice through an environment that acknowledges and supports women's roles in the water sector.

RECOMMENDATION

Based on the findings and implications of the study, several recommendations are proposed to address water conservation and management issues. The study recommends empowering women to promote water conservation in households and communities while ensuring their awareness of rights to access resources and water governance. Barangay Camp One, Maramag, Bukidnon, should provide detailed information on water shortages to policymakers for effective resource allocation and policy development. Local government units are urged to create capacity-building programs addressing women's needs and prioritize the installation of a water reservoir and district. Community education initiatives, supported by institutions like Bukidnon State University, should actively encourage women's participation in meetings and workshops. These platforms can provide a space for women to share their experiences with water scarcity, discuss effective water conservation strategies they have developed, and raise broader community awareness about the critical role women play in sustainable water management. Additionally, the Maramag Water District can use the study's findings to improve infrastructure and safe drinking water management. NGO's should organize gender-focused seminars and training on sustainable water management, while academic institutions should educate students on water conservation for sustainable development. Future researchers are encouraged to explore gender dynamics in water management to broaden knowledge and enhance critical thinking.

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