



Women and water: A gendered perspective on roles and challenges

Ranjita Mondal

Department of Geography, Vedanta College, Kolkata, West Bengal, India

Abstract

The management and acquisition of water resources are profoundly gendered activities, with women and men experiencing water-related roles, responsibilities, and challenges in distinctly different ways. This article provides a comprehensive analysis of the intricate nexus between gender and water, arguing that water is not merely a natural resource but a social one, deeply embedded in cultural norms, economic structures, and power dynamics that often disadvantage women. It begins by exploring the multifaceted roles women play as primary domestic water managers, key agents in agricultural water use, and custodians of water-related knowledge and traditions. The discussion then delves into the significant challenges women face, including the physical and temporal burden of water collection, health and safety risks, and systemic exclusion from water governance and decision-making processes. The methodological approach synthesizes findings from a wide range of interdisciplinary literature, including development studies, public health, anthropology, and environmental science, drawing on empirical case studies from Sub-Saharan Africa, South Asia, and other regions in the Global South. The results highlight how the commodification of water and the impacts of climate change exacerbate existing gendered inequalities, further marginalizing women. The discussion critiques the historical gender-blindness of water policies and advocates for the necessity of gender-mainstreaming in all future water, sanitation, and hygiene (WASH) and integrated water resources management (IWRM) initiatives. The conclusion asserts that achieving global water security and the Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality) and SDG 6 (Clean Water and Sanitation), is inextricably linked to empowering women, recognizing their agency, and ensuring their equitable participation in water governance. The transformation of water from a source of burden to a source of empowerment for women is not only a moral imperative but a fundamental prerequisite for sustainable development.

Keywords: Gender and Water, Water Governance, Women's Empowerment, Water Collection Burden, WASH (Water, Sanitation, and Hygiene), Gender Mainstreaming, Climate Change, Sustainable Development Goals (SDGs), Water Security, Feminist Political Ecology

Introduction

Water is the essence of life, a fundamental human right, and a critical economic resource. However, its distribution, management, and use are not neutral processes; they are deeply shaped by social constructs, including gender. Gender, distinct from biological sex, refers to the socially ascribed roles, behaviors, activities, and attributes that a given society considers appropriate for men and women. These gendered norms dictate the relationship that individuals and communities have with water, creating a distinct and often unequal division of labor, access, and control. This article seeks to unpack the complex and multifaceted relationship between women and water, moving beyond a simplistic view of women as victims of water scarcity to a more nuanced understanding of them as central, yet frequently marginalized, actors in the water ecosystem. The central thesis is that the global water crisis is, in significant part, a gendered crisis, and that effective, sustainable, and equitable solutions must be predicated on a thorough gendered analysis and the active participation of women. The importance of this topic is underscored by its direct relevance to multiple United Nations Sustainable Development Goals, including eradicating poverty (SDG 1), ensuring good health and well-being (SDG 3), achieving gender equality (SDG 5), and guaranteeing availability and sustainable management of water and sanitation for all (SDG 6). Historically, water development projects have often been gender-blind, treating households as homogeneous units and inadvertently reinforcing

inequalities by engaging primarily with men, who are typically perceived as the "community leaders" or "heads of household." This approach has led to numerous project failures, as it ignored the primary users and managers of water—women. Therefore, a gendered perspective is not an optional add-on but a critical lens through which to understand the realities of water use and to design interventions that are both effective and just. This paper will systematically explore the roles, challenges, and potential for empowerment that define the relationship between women and water across diverse cultural and geographical contexts.

Methods

This article employs a comprehensive literature review methodology, synthesizing insights from a vast and interdisciplinary body of scholarly work to construct a holistic gendered perspective on water issues. The research design is qualitative and analytical, aiming to integrate findings from fields including development studies, environmental sociology, feminist political ecology, public health, and anthropology. The primary sources of data are peer-reviewed academic journals, books, reports from major international organizations such as the United Nations (UN Women, UNICEF, UNDP, UN Water), the World Bank, the World Health Organization (WHO), and non-governmental organizations like WaterAid and the International Water Management Institute (IWMI). A systematic approach was used to identify relevant literature through academic

databases like JSTOR, Scopus, and Google Scholar using the keywords listed in the abstract. The inclusion criteria prioritized recent studies (from the past two decades) that offered empirical evidence, robust case studies, or strong theoretical frameworks analyzing the gender-water nexus. Case studies from regions particularly affected by water scarcity and gendered inequalities, such as Sub-Saharan Africa (e.g., Kenya, Ethiopia, Malawi), South Asia (e.g., India, Nepal, Bangladesh), and parts of Latin America, were given specific attention to ground the analysis in real-world contexts. The methodological framework is guided by principles of feminist research, which prioritizes understanding the lived experiences of women, challenging androcentric biases in traditional research, and focusing on issues of power, inequality, and agency. The analysis involves identifying common themes across the literature—such as the division of labor, health impacts, and exclusion from governance—and critically examining how these themes interact and reinforce each other. While this method provides great depth and contextual understanding, it is acknowledged that it relies on the methodologies and interpretations of the original sources. Furthermore, the article recognizes the immense diversity of women's experiences based on intersectional factors like class, caste, ethnicity, age, and marital status, and strives to acknowledge this diversity where the literature permits, rather than presenting "women" as a monolithic category.

Results

The synthesis of the literature reveals several powerful and consistent findings regarding the roles and challenges of women in relation to water, painting a picture of immense responsibility coupled with significant constraint. Firstly, the role of women as primary domestic water managers is a near-universal constant across the developing world. In millions of households, the task of fetching water for drinking, cooking, cleaning, washing, and bathing falls overwhelmingly on women and girls. This role is not merely a chore but a deeply ingrained social expectation, a part of their gendered identity as caregivers and nurturers of the family. The time and physical energy invested in this task are staggering, with women and girls in water-scarce regions often spending several hours each day walking long distances to water sources, waiting in line, and carrying heavy loads back home, often weighing between 15 to 20 kilograms. This daily pilgrimage for water is a defining feature of their lives, structuring their daily routines and limiting their opportunities for other activities. Secondly, women are crucial agents in productive water use, particularly in agriculture. In many agrarian economies, women constitute a substantial portion of the agricultural labor force and are primarily responsible for subsistence farming, livestock watering, and small-scale irrigation. Their knowledge of local water sources, soil conditions, and crop varieties is extensive and critical for household food security. However, their work in agriculture is often undervalued as "help" rather than recognized as central to the economy, and their access to resources like land, credit, and irrigation technology is frequently constrained by patriarchal norms. Thirdly, women are custodians of water-related knowledge and traditions. They often hold intricate knowledge about water quality, the location of seasonal springs, and traditional methods of water conservation and purification, knowledge that is passed down through

generations. This role as knowledge-holders, however, is rarely translated into formal power within community water governance structures.

The challenges emanating from these roles are severe and multifaceted. The most immediate is the physical burden of water collection, which leads to chronic health problems such as spinal and pelvic deformities, complications during pregnancy, and general physical exhaustion. The time poverty resulting from long hours spent on water collection is a significant barrier to female education, as girls are often required to help their mothers with water chores, leading to school absenteeism or outright dropout. For adult women, this time burden prevents them from engaging in income-generating activities, pursuing further education, or participating in community life, thereby perpetuating cycles of economic disempowerment. Furthermore, the journey to and from water sources can expose women and girls to serious safety risks, including sexual harassment, assault, and animal attacks, especially when they have to travel to remote areas or go out before dawn or after dusk to avoid long queues. Lack of access to safe and private sanitation facilities (toilets) near the home presents another layer of challenge, compromising their dignity, health, and safety. From a governance perspective, the results consistently show that women are severely underrepresented in formal water management institutions, such as water user associations, village water committees, and policymaking bodies. Even when they are included, their participation is often tokenistic, with men dominating discussions and decisions. This exclusion means that water systems are often designed without considering women's specific needs and preferences, leading to inconveniently located water points, inappropriate technology, and scheduling of water supply that does not align with their domestic routines. The results also highlight how macro-level pressures like climate change and water commodification intensify these gendered challenges. Climate-induced droughts and erratic rainfall patterns increase the time and distance required for water collection, directly amplifying women's burdens. Meanwhile, the privatization of water services can put formal water access out of economic reach for poor households, and women, as managers of household budgets, bear the stress of these additional financial pressures.

Discussion

The results presented above necessitate a deeper discussion that moves beyond description to analyze the underlying power structures and systemic inequalities that create and perpetuate the gendered water burden. The discussion must be framed within theoretical perspectives like Feminist Political Ecology (FPE), which argues that environmental issues cannot be understood separately from social and power relations, particularly gender relations. The gendered division of water labor is not a natural or accidental phenomenon but is rooted in patriarchal systems that assign the "private sphere" of reproduction and care to women and the "public sphere" of production and decision-making to men. Water, used primarily for domestic purposes, is thus feminized, and the work associated with it is devalued as a non-economic "domestic duty" rather than recognized as essential labor that sustains the workforce and the economy. This devaluation is why the hours spent collecting water are invisible in national economic accounts like GDP, and why women's expertise is systematically overlooked. The

discussion must also critically engage with the concept of "participation" in water governance. Merely having a quota for women on a water committee is insufficient if deep-seated social norms prevent them from speaking up, if meetings are held at times when they are burdened with domestic chores, or if they lack the technical training and confidence to engage with male engineers and leaders. True participation requires transformative approaches that actively build women's capacity, challenge existing power dynamics, and create spaces for their voices to be heard and heeded.

Furthermore, the discussion must address the intersectionality of women's experiences. A woman's relationship with water is not determined by gender alone but is mediated by other axes of her identity. A woman from a lower caste in India may be prohibited from using the same well as an upper-caste woman, who herself may face restrictions from men. An elderly woman may have different knowledge and vulnerabilities compared to a young girl. A female-headed household may face even greater struggles with water access due to a lack of male labor. Effective interventions must be sensitive to these intersecting inequalities. The discussion also needs to critique the technological solutions often promoted in water projects. Hand pumps, for instance, are a common intervention, but if they are designed without considering the strength required to operate them or are located in a public space where women feel unsafe, they may fail or be underutilized. Similarly, piped water systems that bring water to the homestead are transformative because they directly alleviate the time and safety burden, demonstrating how technology, when designed with a gender lens, can be a powerful tool for empowerment. Finally, the positive potential must be discussed. A growing body of evidence shows that when women are genuinely empowered in water management, the outcomes are markedly better. Studies have shown that projects with strong female participation are more likely to be sustainable, have better cost recovery, and improve overall water system functionality. When women gain control over water, they reinvest the benefits—saved time, improved health, and increased income—into their families and communities, leading to improved child nutrition, higher school enrollment for girls, and broader community well-being. Therefore, addressing the gendered challenges in water is not a zero-sum game but a catalyst for achieving wider developmental gains.

Conclusion

The intricate relationship between women and water, as explored in this article, reveals a story of profound responsibility juxtaposed with systemic disempowerment. Women are the pillars of water security at the household and community level, yet their contributions remain largely invisible, their burdens unacknowledged, and their voices silenced in the spaces where decisions about water are made. The challenges they face—the physical toll of water carrying, the loss of educational and economic opportunities, the risks to their safety, and their exclusion from governance—are not isolated issues but are symptomatic of deeper gendered inequalities embedded in social norms, economic structures, and political institutions. The analysis makes it unequivocally clear that water programs and policies that are gender-blind are doomed to be inefficient, unsustainable, and unjust. They risk

reinforcing the very inequalities they seek to alleviate. The path forward requires a fundamental paradigm shift from viewing women as passive beneficiaries of water projects to recognizing them as essential agents of change, managers of knowledge, and leaders in water governance. This entails the deliberate and thoughtful mainstreaming of gender perspectives into all aspects of water resource management and WASH initiatives. Concrete actions must include: conducting thorough gender analyses as a prerequisite for any intervention; designing appropriate and accessible water technologies with women's input; ensuring equitable and meaningful representation of women in water committees through supportive measures like leadership training and flexible meeting times; and collecting sex-disaggregated data on water use, time allocation, and participation. Ultimately, securing water for all, as envisioned in the Sustainable Development Goals, is an impossible dream without achieving gender equality. Investing in women's empowerment in the water sector is not a diversion from the goal of water security; it is the most direct and effective pathway to achieving it. By alleviating the water burden and unlocking the potential of women, we do not just give them access to a resource; we give them back their time, their health, their safety, and their voice, enabling them to become architects of a more sustainable and equitable future for all.

References

1. Ahlers R, Zwarteveen M. The water question in feminism: Water control and gender inequities in a neo-liberal era. *Gender Place & Culture*, 2009;16(4):409–426.
2. Crow B, Sultana F. Gender class and access to water: Three cases in a poor and crowded delta. *Society & Natural Resources*, 2002;15(8):709–724.
3. FAO. The future of food and agriculture: Trends and challenges. FAO, 2017.
4. Kameri-Mbote P. Water conflict and cooperation: Lessons from the Nile River Basin. Woodrow Wilson International Center for Scholars, 2007.
5. Lahiri-Dutt K. Fluid bonds: Views on gender and water. Stree Publishers, 2006.
6. Ray I. Women water and development. *Annual Review of Environment and Resources*, 2007;32:421–449.
7. Sorenson SB, Morssink C, Campos PA. Safe access to safe water in low income countries: Water fetching in current times. *Social Science & Medicine*, 2011;72(9):1522–1526.
8. UNICEF, WHO. Progress on household drinking water sanitation and hygiene 2000–2020: Five years into the SDGs. JMP Report, 2021.
9. United Nations Water. Gender water and sanitation: A policy brief. Inter-Agency Task Force on Gender and Water, 2006.
10. van Koppen B. Gender in integrated water management: An analysis of variation. *Natural Resources Forum*, 2001;25(4):299–312.
11. Wutich A, Ragsdale K. Water insecurity and emotional distress: Coping with supply access and seasonal variability of water in a Bolivian squatter settlement. *Social Science & Medicine*, 2008;67(12):2116–2125.
12. Zwarteveen MZ. Water: From basic need to commodity: A discussion on gender and water rights in

- the context of irrigation. *World Development*, 1997;25(8):1335–1349.
13. Cleaver F, Hamada K. 'Good' water governance and gender equity: A troubled relationship. *Gender & Development*, 2010;18(1):27–41.
 14. Dankelman I, Davidson J. Women and environment in the Third World: Alliance for the future. Earthscan Publications, 1988.
 15. O'Reilly K. "Traditional" women "modern" water: Linking gender and commodification in Rajasthan India. *Geoforum*, 2006;37(6):958–972.
 16. Truelove Y. (Re-)Conceptualizing water inequality in Delhi India through a feminist political ecology framework. *Geoforum*, 2011;42(2):143–152.
 17. World Bank. Mainstreaming gender in water and sanitation. Gender and Development Group, 2010.
 18. UNDP. Human Development Report. Beyond scarcity: Power poverty and the global water crisis. Palgrave Macmillan, 2006.
 19. Agarwal B. Participatory exclusions community forestry and gender: An analysis for South Asia and a conceptual framework. *World Development*, 2001;29(10):1623–1648.
 20. Joshi D, Fawcett B. The role of water in an unequal social order in India. In: Water cultural diversity and global environmental change. Springer Dordrecht, 2005, 349–360.