

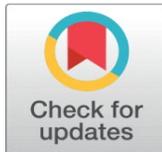
# GENDER, LIVELIHOOD, AND ENVIRONMENTAL JUSTICE: WOMEN'S STRUGGLE IN LOKTAK LAKE

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## ABSTRACT

Loktak Lake is a vital wetland ecosystem that sustains thousands of local inhabitants. Women in the littorals of the lake play central roles in fishing, resource management, and household economies. However, environmental degradation, hydropower development, and restrictive conservation policies have disproportionately affected women. Multipronged challenges of development in Loktak Lake intensify women's socio-economic vulnerabilities and threaten their means of traditional livelihoods. Against this backdrop, this paper explores the intricate relationship between gender, livelihood, and environmental justice with reference to women in and around the Loktak Lake of Manipur, India. Using the theoretical framework of environmental justice, the paper examines how women face disproportionate burdens of environmental challenges and explains how they navigate these challenges through their adaptive strategies, resistance, and leadership in community-based conservation efforts. This paper reveals that women are facing multifaceted struggles like limited access to resources, underrepresentation in decision-making, and socio-cultural barriers. After confirming women's agency in mobilising collective action and advocating for equitable policies, the paper argues that recognising and strengthening women's roles is essential for achieving both gender equity and sustainable management of Loktak Lake. Policy recommendations emphasise the need for inclusive governance, gender-sensitive interventions, and support for women-led initiatives.

**Keywords:** Loktak Lake, Women, Livelihood, Environmental Justice, Gender Equity, etc



## 1. INTRODUCTION

Loktak Lake is the largest freshwater lake in Northeast India. It is not merely an ecological marvel but also acts as a vital socio-economic artery for the people of Manipur. The globally recognised Keibul Lamjao National Park is situated in this lake. The Loktak lake is central to the livelihood and cultural identity of the Meitei and other communities that inhabit its shores. The lake provides fish, aquatic vegetation, transportation routes, and income-generating opportunities to thousands of people where women form the backbone of the informal and subsistence economies (Devi & Moirangleima, 2023; Kumar, 2024). Women living in the littorals of Loktak Lake are engaged in a wide array of roles ranging from fishing and allied activities, processing aquatic vegetation like phumdi, collecting biomass for fuel, etc. to maintaining household economies. The bond between women and the lake is not merely utilitarian but deeply cultural and spiritual. Despite such centrality of women, their relationship with the ecosystem has become increasingly precarious due to ecological degradation, hydropower development, and exclusionary conservation models (Wangkheirakpam, 2024). The commissioning of the Ithai Barrage under the Loktak Multipurpose Hydroelectric Project in 1983 has permanently altered the hydrology and wetland ecology of the lake (Sharma, 2018) leading to loss of

biodiversity, displacement of people, and disruption of traditional fishing systems. The gendered implications of such ecological transformations are profound. Women face intensified livelihood insecurities as access to natural resources diminishes and climate variability worsens. Mainstream environmental governance continues to ignore these disproportionate burdens on women and their historically informal roles make them more vulnerable to policy neglect and resource dispossession (Wangkheirakpam, 2024). Conservation strategies such as the Loktak Lake (Protection) Act of 2006 have often resulted in the prohibition of indigenous practices and displacement of communities in the name of ecological preservation (Yumnam, 2020; Yumnam, 2021).

There exist disproportionate burdens and livelihood insecurities for women associated with Loktak Lake. Considering it, environmental justice can offer a theoretical lens to critique and reform such issues. Even though it was designed to address racial and class disparities in environmental harms, environmental justice as a theoretical framework has evolved to encompass gender, indigeneity, and cultural identity in ecological struggles worldwide (Schlosberg, 2007). In the context of Loktak Lake, environmental justice compels us to ask: who gets to decide and who bears the cost of conservation? This question is central to any conversation around sustainable wetland governance and gender equity. Against this backdrop, this paper seeks to explore the intersection of gender, livelihood, and environmental justice with reference to women living in and around the Loktak Lake. It aims to document how these women confront and negotiate structural challenges such as policy exclusion, ecological loss, and socio-cultural constraints. The study highlights the critical need for gender-sensitive and inclusive approaches to environmental governance by foregrounding their resistance, adaptive strategies, and leadership in community-based conservation. In doing so, this study contributes to a growing body of scholarship that challenges top-down, technocratic models of conservation and development and calls for a shift toward localised, gender-equitable, and ecologically sound alternatives.

## **2. WOMEN AND ENVIRONMENTAL JUSTICE**

The framework of environmental justice is primarily concerned with distributive justice (say, fair distribution of environmental goods and burdens), procedural justice (say, equitable participation in decision-making), and recognition justice (say, acknowledging diverse identities and worldviews) (Walker, 2012). However, in the Indian context, the concept of environmental justice may be extended to include questions of caste, class, and gender. The predicament is that women's knowledge of ecosystems is frequently undervalued or excluded from formal conservation regimes even though it is very crucial. In places like Loktak Lake where women are heavily involved in fishing, collecting aquatic plants, and household provisioning, etc.; ignoring these roles in environmental planning shall constitute a form of 'epistemic injustice' (Nightingale, 2006). Such perspectives become even more relevant in situations where environmental degradation intersects with development projects that disrupt ecosystems and traditional livelihoods while also neglecting gender-sensitive consultation processes. Within this theoretical landscape, this paper explores how women in and around the Loktak lake navigate the layered injustices of ecological disruption, policy exclusion, and socio-cultural marginalisation. This lens can not only highlight women's vulnerabilities but it can also recognise their agency, resistance, and leadership in advocating for sustainable, inclusive governance of Loktak Lake.

## **3. ECOLOGY, ECONOMY, AND POLICY LANDSCAPE**

Loktak Lake, located in the Bishnupur district of Manipur, is the largest freshwater lake in Northeast India and an integral part of the region's ecological and socio-economic fabric. Designated as a Ramsar Site in 1990, the lake spans over 246 square kilometres and supports a rich mosaic of biodiversity, including the world's only floating national park called Keibul Lamjao National Park (KLNP), which is also the last natural habitat of the endangered Sangai deer (*Rucervus eldii eldii*) (Kangabam et al., 2019). The lake's distinctive floating mats of vegetation mixed with soil called phumdi sustain a complex ecosystem that includes diverse aquatic flora and fauna, migratory birds, and indigenous fish species. Economically, Loktak Lake plays a crucial role in the livelihoods of the lakhs of people who depend on it for fishing, agriculture, transport, and fuel collection (Singh et al., 2022). It sustains about 55 rural and semi-urban villages located along its periphery. Women are heavily involved in the collection of phumdi, fishing, and small-scale trading, which forms the basis of the informal economy. However, this ecological abundance and socio-economic dependence are increasingly under threat due to multiple human interventions and policy failures. One of the most significant disruptions to the lake's hydrology started with the commissioning of the Ithai Barrage in 1983 under the Loktak Multipurpose

Hydroelectric Project (LMHP). While the project aimed to generate 105 MW of electricity and provide irrigation and flood control, it has had unintended ecological consequences. The permanent inundation of the lake due to the barrage has led to the destruction of seasonal wetlands, degradation of phumdi, decline in fish diversity, and displacement of human settlements (Sharma & Meitei, 2020). Because of the disruption by barrage, water levels are no longer regulated naturally leading to recurrent flooding and drying patterns that disrupt traditional agriculture and fishing practices.

Policy interventions have often compounded these ecological challenges. The Loktak Lake (Protection) Act, 2006 was enacted by the Government of Manipur to restore and manage the lake ecosystem. However, the top-down management approach under Loktak Development Authority's (LDA) leadership led to widespread contestation. The eviction of fishermen and removal of huts (locally called phumshangs) under the pretext of 'cleaning' the lake has drawn criticism from civil society and indigenous groups for violating customary rights and livelihoods. Despite these tensions, Loktak remains a site of contested development where conservation, energy needs, and livelihood rights collide. While policy frameworks emphasise ecological restoration, they often marginalise local voices, especially those of women from decision-making processes. Thus, understanding Loktak's political ecology requires a deeper interrogation of how governance structures shape environmental outcomes and distribute risks and benefits among different social groups. Therefore, it can be safely deduced that the Loktak lake is not merely a wetland to be preserved or a resource to be exploited, but a dynamic socio-ecological system where ecology, economy, and policy are deeply intertwined.

#### 4. GENDERED LIVELIHOODS IN THE LOKTAK ECOSYSTEM

Women residing in and around Loktak Lake play indispensable roles in sustaining both household economies and broader livelihood means of the community. Their engagement with the lake is extensive and multidimensional. It often ranges from direct income-generating activities like fishing and biomass collection to the invisible but crucial roles like food preparation, water management, and caregiving. These contributions of women are foundational to the socio-economic functioning of the Loktak region (Devi & Moirangleima, 2023; Kumar, 2024), but they are often informal, unrecognised, and vulnerable to environmental and policy disruptions. One of the most visible economic roles of women in the Loktak ecosystem is fishing. Women participate not only in fishing but also in post-harvest processes such as cleaning, drying, processing, and marketing. In some villages, women manage family-owned fishing canoes and make solo or group expeditions to nearby phumdi zones that act as habitats for several fish species. The fish trade is typically conducted by women in informal markets where they sell both fresh and dried fish against challenging physical and social conditions. This fishing-based livelihood is not just a source of income but also a cultural practice passed down from generation to generation.

Beyond fishing, women are deeply involved in harvesting aquatic plants as necessary ingredients of singju (a local salad), and also collect firewood and biomass from the lake and phumdis for fuel and domestic use. These activities, though subsistence-oriented, are integral to their daily survival. Thus, it reflects a deep ecological knowledge of women about the lake's seasonal rhythms. In some cases, women have taken to crafting traditional products such as mats and baskets from wetland resources as a means of diversifying their economic roles. Despite their centrality, women's labour in the Loktak economy is structurally undervalued. A study by Devi & Moirangleima (2023) found that most of the fishing labour in select lake villages was performed by women but they remained largely absent from decision-making bodies, fisheries cooperatives, and conservation committees. This marginalisation is reinforced by social prejudices and state policies that do not formally recognise women's ecological stewardship or economic contributions.

Environmental degradation mainly driven by hydrological changes from the Ithai Barrage, pollution, and the shrinkage of phumdi has compounded the precarity of women's livelihoods. As fishing yields decline and access to lake resources becomes restricted by conservation policies, women face increasing burden of income loss and psychological stress. However, they adapt through informal strategies such as migration for work and rotating labour by seasons (Laishram & Dey, 2013). Some women have emerged as local leaders, mobilising against the eviction of phumdi dwellers and the destruction of phumshangs (huts on phumdis). Their leadership is often exercised through informal platforms or civil society groups like the Meira Paibis. These collective actions assert a more grounded, gender-sensitive vision for wetland governance. Understanding women's roles in Loktak Lake management thus requires a shift from viewing them as passive victims of ecological change to recognising them as active agents of livelihood sustainability and environmental knowledge. Any policy aimed at wetland conservation or livelihood development in Loktak must be informed by this gendered perspective so that the policy is both effective and just.

## 5. DISPROPORTIONATE IMPACTS ON WOMEN

Hydropower infrastructure, unsustainable policy interventions, and biodiversity loss largely trigger environmental transformations in the Loktak Lake ecosystem. Such transformations have disproportionately impacted marginalised fisherwomen. Although men and women share ecological vulnerabilities, due to gendered roles and socio-cultural expectations women face distinct and often more acute consequences when environmental change disrupts traditional livelihoods. A key driver of ecological disruption in Loktak is the Ithai Barrage, commissioned in 1983 under the Loktak Multipurpose Hydroelectric Project (LMHP). While the project aimed to produce hydropower and flood control, it has caused permanent inundation of the lake, thereby altered the seasonal water flows and degraded the floating biomass (phumdi) that supports both biodiversity and fisheries (Sharma & Meitei, 2020). These ecological changes have dramatically reduced fish yields and biomass availability which are the resources on which women rely heavily for fishing, fuel, and food. As a result, fisherwomen have been forced to travel farther and work longer hours to collect resources, thereby intensifying their labour burden while returns diminished.

Considering the lake's ecological degradation, the Manipur government implemented the Loktak Lake (Protection) Act, 2006. However, its top-down implementation triggered a range of socio-political conflicts particularly due to the eviction of phumdi-dwelling communities and the destruction of phumshangs (floating huts) that serve as both homes and workspaces for fishing families. These forced evictions have had catastrophic impacts on women whose livelihoods and domestic routines are deeply rooted in the lake's environment. Displacement curtailed their economic opportunities and weakened community networks that are essential for collective coping mechanisms. Furthermore, women remain largely absent from formal decision-making platforms such as the Loktak Development Authority (LDA) which manages restoration and conservation projects in the lake. Without their representation, women's voices, concerns, and traditional ecological knowledge are usually excluded from conservation policies. This exclusion is symptomatic of a prevailing gap in environmental governance where women's knowledge systems are ignored. The compounded impacts of ecological degradation and policy-driven displacement have also led to what scholars describe as 'feminisation of poverty'. With fewer livelihood options, increasing household costs, and reduced access to traditional resources, fisherwomen are being pushed into more profound economic insecurity. Many are forced to undertake informal and precarious labour, such as daily wage work or distant market trading. However, such activities often expose them to exploitation and social stigma. Moreover, these hardships have a direct impact on women's health and education. The extra physical labour involved in resource gathering increases the risk of injury and chronic fatigue, while financial instability often coerces families to withdraw girls from school. Women also bear emotional and mental stress as they navigate the dual responsibility of securing dwindling resources and managing disrupted household dynamics (Devi & Moirangleima, 2023). Despite these layered adversities, current environmental and developmental frameworks do not sufficiently account for the gender-specific effects of ecological transformation in Loktak. The invisibility of gendered perspectives within conservation and planning not only undermines the effectiveness of these interventions but also perpetuates cycles of injustice. Addressing this imbalance requires more than compensation or livelihood alternatives; it demands a rethinking of governance structures to ensure women's full participation in environmental decision-making. Only through inclusive and gender-sensitive approach, the management of Loktak Lake can be aligned with principles of social equity and ecological sustainability.

## 6. RESISTANCE, RESILIENCE, AND COLLECTIVE ACTION

Even in the face of ecological degradation, forced evictions, and exclusionary conservation policies; women living in the Loktak Lake region have not remained passive victims. Instead, they have emerged as powerful agents of resistance, resilience, and community mobilisation. Their actions challenge not only the material impacts of environmental change but also the structural injustices embedded in top-down governance models. One of the most striking moments of women's resistance occurred in 2011 when the Loktak Development Authority (LDA) initiated the large-scale demolition of floating huts (phumshangs). These phumshangs served as both homes and fishing stations for hundreds of families. The justification was that these structures caused pollution and impeded conservation. However, the evictions were carried out despite protests and it displaced scores of families particularly impacting women who were primary caretakers and income generators in their households. In response, local women organised protests, sit-ins, and public demonstrations against the evictions. Canoes, which are typically tools of livelihood, were turned into platforms of

protest symbolising the intimate link between community, ecology, and identity. Women navigated these boats into restricted zones to challenge exclusion, a defiant act described as 'canoes of resistance' (Wangkheirakpam, 2024). These acts not only reclaimed physical space but also demanded recognition of the rights and knowledge of indigenous women. The activism of the Meira Paibis (torchbearer women) has also played a central role in shaping resistance narratives in the Loktak lake. Traditionally known for their role in anti-intoxicant and anti-militarisation movements in Manipur, these women have extended their activism to environmental and livelihood rights. They have acted as community watchdogs and they have campaigned against policy decisions that threatened communal survival. Thus, the Meira Paibis represents a potent form of grassroots environmentalism rooted in care ethics and collective well-being.

Beyond protest, women in Loktak have also demonstrated remarkable resilience through adaptive livelihood strategies. With declining access to fish and aquatic vegetation, many women have diversified into small-scale trade, craft production, and cooperative savings groups. For instance, women's self-help groups (SHGs) have become important platforms for sharing resources, building economic alternatives, and advocating for community welfare. These groups often operate without formal support, underscoring the informal but crucial infrastructures of women's solidarity. Oral histories, songs, and local performances are used to transmit ecological knowledge and preserve cultural memory. These community knowledge systems shall serve not only as archives of survival but it can also teach resistance that shapes younger generations' understanding of their rights and environment. Despite systemic exclusion from formal environmental governance, women's efforts have gradually begun to influence policy discourse. Advocacy by women's groups are exerting pressure on local officials to reconsider the eviction model and include community voices in lake management and planning. While challenges persist, the momentum generated by these grassroots actions points toward a more inclusive and justice-oriented future. Ultimately, the resistance and resilience of women in and around Loktak Lake reflect a broader struggle for environmental justice. Such a struggle is deeply gendered, locally grounded, and globally relevant. Recognising and strengthening these collective actions is essential not just for the survival of communities in and around Loktak lake but it is also important for the sustainable governance of one of India's most critical wetland ecosystems.

## 7. POLICY RECOMMENDATIONS

A just conservation of Loktak Lake demands a transformative shift towards policy grounded in inclusivity, gender equity and community participation. Current frameworks such as the Loktak Lake (Protection) Act, 2006 have adopted a technocratic approach focused on ecological restoration without adequately recognising the socio-cultural and gendered dimensions. The following recommendations are proposed to address these policy gaps. Firstly, institutional mechanisms like the Loktak Development Authority (LDA) must mandate the inclusion of women (particularly fisherwomen) in decision-making bodies. Secondly, policies must formally acknowledge the traditional practices and ecological knowledge of local women which are vital for sustainable resource management. Integrating this knowledge into scientific conservation plans and programmes can enhance legitimacy and effectiveness. Thirdly, conservation strategies should avoid forced evictions and prioritise livelihood restoration. Fourthly, community-oriented workshops on environmental rights, gender justice and legal literacy must be actively encouraged to empower women to engage with governance systems. Finally, monitoring and evaluation systems must include gender-disaggregated indicators to assess the social impacts of conservation. Without these structural shifts, the lake's conservation efforts will continue to reproduce exclusion and inequality. Gender inclusive policy is not only a matter of justice but it is also essential for the long-term ecological health of the Loktak Lake.

## 8. CONCLUSION

The case of Loktak Lake reveals the multifaceted nature of environmental injustice, where ecological degradation, exclusionary policy frameworks, and development projects intersect to disproportionately affect women. Women in the littoral areas of Loktak Lake have been marginalised in both policy and practice. Their displacement due to development projects and increasing livelihood insecurity due to ecological disruptions underscore the urgency for gender-sensitive environmental governance. Against all odds, women have not remained passive recipients of injustice. Through collective mobilisation, grassroots activism and adaptive strategies; they are reshaping discourses around wetland conservation and gender equity. Mobilisations like those led by the Meira Paibis and local self-help groups exemplify community-led environmentalism rooted in care, justice, and resistance. This paper argues that sustainable governance

of Loktak Lake cannot be achieved without centering women's lived experiences and agency. Policy reforms must move beyond token inclusion. Policies must be based on the principles of participatory, inclusive, livelihood-securing and gender-sensitive conservation. In doing so, we shall be not only protecting a critical ecosystem but we shall be also upholding the principles of environmental and gender justice.

## CONFLICT OF INTERESTS

None.

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## REFERENCES

- Devi, S. S. & Moirangleima, Kh. (2023). Fisherwomen of Loktak Lake, Manipur: A Social and Economic Analysis, SROTASWINI, Vol.VI, 2022-23: 80-94. [https://www.srotaswini.in/images/downloads/vol\\_6/Fisherwomen\\_of\\_Loktak\\_Lake\\_Manipur\\_1.pdf](https://www.srotaswini.in/images/downloads/vol_6/Fisherwomen_of_Loktak_Lake_Manipur_1.pdf)
- Kangabam, R., Selvaraj, M. & Govindaraju, M. (2019). Assessment of land use land cover changes in Loktak Lake in Indo-Burma Biodiversity Hotspot using geospatial techniques, *The Egyptian Journal of Remote Sensing and Space Science*, 22(2):137-143. <https://doi.org/10.1016/j.ejrs.2018.04.005>
- Kumar, S. (2024). Navigating Sustainability in Loktak Lake: Socio-ecological Changes and its Impact on Wetland Ecosystem and Native Fishers. *Journal of North East India Studies*, 14(1): 27-44. <https://www.jneis.com/wp-content/uploads/2024/12/14.1.3.pdf>
- Laishram, J., & Dey, M. (2013). Socio-Economic Condition of the Communities Dependent on Loktak Lake: A Study on Five Lakeshore Villages. *International Journal of Ecology and Environmental Sciences*, 39(2): 87-96. <https://www.nieindia.org/Journal/index.php/ijeas/article/view/130>
- Nightingale, A. (2006). The Nature of Gender: Work, Gender, and Environment. *Environment and Planning D: Society and Space*, 24(2), 165-185. doi: <https://doi.org/10.1068/d01k>
- Schlosberg, D. (2007). *Defining Environmental Justice: Theories, Movements, and Nature*. United Kingdom: OUP Oxford.
- Sharma, C. K. (2018). Dam, Development and Popular Resistance in Northeast India. *Sociological Bulletin*, 67(3):317-333.
- Sharma, G. J., & Meitei, I. L. (2020). Impacts of Ithai Barrage on Loktak Lake and Its Surrounding Area, *The Indian Geographical Journal*, 95(2): 193-201.
- Singh, S. B., Singh, R., Chiphang, S., Nongbri, B., Bey, B.S., Singh, K.J., & Hemochandra, L. (2022). Livelihood Assessment of Households in Wetland of Manipur: A Micro-Level Study. *Indian Journal of Agricultural Economics*, 77(3):508-520. <https://ageconsearch.umn.edu/record/345205/?v=pdf>
- Walker, G. (2012). *Environmental Justice: Concepts, Evidence and Politics*. New York: Taylor & Francis.
- Wangkheirakpam, R. (2024). Canoes as Tools of Resistance: Challenging Dispossession in Manipur, India. *Journal of Developing Societies*, 40(3): 314-331. <https://journals.sagepub.com/doi/abs/10.1177/0169796X241262131>
- Yumnam, J. (2020). *Dams and Indigenous Peoples Rights in Manipur*. New Delhi: Forward Books.
- Yumnam, J. (2021). *Development Aggression: Rethinking India's Neoliberal Development in Manipur*. Imphal: Yaol Publishing Limited.