



## Invisible Hands that Feed the Hills: Women at the Heart of Crop-Dairy Systems in Northeast India

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Remi wakes before dawn, when the house is still dark and the rooster silent. She washes her face, ties her hair, and quickly begins the day's work. The fire is lit, rice and tea are set to boil, and breakfast is prepared for the family. As the sky turns orange, she has already swept the courtyard, fed the chickens, and milked the cow. Her hands never rest, and her mind moves ahead, planning the long day. She wakes the children, packs their lunches, and serves breakfast to her husband before the children leave for school. Once they go, Remi continues her chores, carrying fodder to the cattle, cleaning the shed, and checking the animals for sickness. Only after finishing the household duties does, she walks to the fields. In the fields, she works with other village women, planting crops, weeding, transplanting seedlings, and harvesting ripe produce. Hours pass under the open sky as they share labor and conversation, sustaining their families through collective effort. The road to the village remains quiet, but in all home women like Remi are already working. They rise before sunrise, caring for children, elders, livestock, and crops without pause. Their responsibilities stretch from home to field, from dawn until night. Remi's day reflects the rhythm of village life, where women carry both family and farm on their shoulders. Though their labor often goes unnoticed, it sustains households and keeps the village alive, season after season, without rest and ensures hope for generations yet to come.

### The invisible weight of women's work

While women in the hills spend long hours feeding cows, cutting fodder, cleaning sheds, and managing small plots, much of this work remains invisible in official statistics and family accounts. Most women's work is India's vast informal economy. Nationally, about 85% of the workforce is in the informal sector, producing more than half of GDP, yet women form a large, hidden share 17.19 million are engaged in home-based work, with 12.48 million in non-Agri activities (Harza, 2023). They face stark pay gaps, women often earn half men's wages, below minimums like Rs. 783/day (Acharya, 2025). According to the International Labour Organization (ILO), the gender wage gap in India is estimated to be around (34%), which means that women earn approximately (66%) of what men earn.

The Northeast India comprises eight states namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Tibet and China in the North East, Bangladesh in the South, Myanmar in the South East and Bhutan in the West bound this region. This region has a population of 40 million (2011 census) and comprising 3.1 percent of India's total population. This region is multiethnic, characterized by heterogeneous cultural background, and very different from mainstream homogenous culture. In Northeast

India's eight diverse states from Arunachal Pradesh's high passes to Tripura's plains, this invisibility persists despite women's higher labour participation of (34.16%) than the national average of (25.5%), thanks to many communities' more egalitarian traditions (Kaur, 2016). Yet empowerment lags on education, health, and employment quality trail other regions, with women mostly in unpaid, low-pay informal roles amid challenges like hilly terrain, insurgency, and weak industry. Between 2005 and 2023, male formal jobs grew while female formal employment rose modestly but stayed far lower (Ravi & Kapoor, 2024), with women's workforce participation declining sharply. This widening gender gap shows that even where hill women work more freely, their contributions like stall-feeding cows or terracing fields remain undervalued and underpaid.

Rural women across India pour endless hours into dairy farming, rising before dawn to milk cows, feed animals, clean sheds, tend to newborn calves, and care for pregnant livestock, tasks that form the backbone of household survival and farm income. Yet this heavy labour rarely grants them control over the money earned or the big decisions that shape their work and lives. While they handle (90%) of daily operations like chaffing fodder, washing animals, and disposing of dung to fertilise fields, choices about selling milk to cooperatives, buying new animals or feed, securing bank loans, or even maintaining simple farm records often fall to men, leaving women without a direct stake in the earnings their hands produce (Kalita, 2025). This disconnect reveals a stark empowerment gap: women manage the back-breaking drudgery and sustain crop-dairy cycles, using residues as fodder and dung as manure, but see little financial return or recognition in return. Income from milk sales flows past them, decisions bypass their input, and their role stays confined to routine toil rather than strategic ownership, echoing broader patterns where women's work props up families and communities without building their own economic security or bargaining power.

### **Different realities across the Northeast hills**

Across Northeast India's hill states, women form the backbone of crop and dairy-based farming systems, yet their experiences are shaped by contrasting social structures. In Meghalaya's matrilineal khasi communities, women benefit from greater mobility and social legitimacy in moving between forests, fields, and markets. They often participate actively in self-help groups and cooperatives, which strengthens their collective voice, improves access to training and veterinary services, and enhances their ability to negotiate better prices (Bordoloi, 2019). This social environment allows women to blend farming, foraging, and marketing in ways that support household nutrition and income. Despite the patriarchal structure of Mizo society, women play a substantial role in the state's agricultural economy. Census 2011 data indicate that women make up (40.26%) of the total workforce and (36.56%) of main workers, reflecting their strong engagement in livelihood activities. Their participation is especially high among marginal cultivators, where they account for (70.90%), and marginal agricultural labourers at (61.58%). Even in main cultivation, largely shifting agriculture, women constitute (39.96%) of workers. These figures highlight that women contribute significantly to agricultural production in Mizoram while simultaneously managing their domestic responsibilities (Ramengmawii & Ralte, 2021). The level of women participation in agriculture is extensive in Nagaland. In fact, women are becoming the dominant workers in agriculture, leading to the feminisation of agriculture in many rural areas of Nagaland (Ngukha, 2024). While in Manipur, the average female's work force contribution in Manipur is (43.35%) which makes women play a significant role in many agricultural and allied fields including crop production, livestock production, horticulture, post-harvest operations, agro-forestry and fisheries (Devi & Singh, 2015). While everywhere in our country, more than 50 percent of farm jobs are done by women, in Tripura and the North East, women play an even greater role. Women play a role in all aspects of agriculture from production, processing, and marketing. Women have no patta or title to land, and with title to the land, credit is not available (M.S Swaminathan, 2017). Agriculture is the dominant economic activity in Sikkim and women contribute enormously to it; their labour remains largely invisible within a patriarchal system. Women perform a dual burden of agricultural

and household responsibilities, ranging from fieldwork and fodder collection to caregiving and food preparation, yet their socio-economic status remains weak despite forming a major share of the farming workforce (Bhutia, 2017). All the communities across the region, women's roles still remain largely confined to their homesteads and nearby fields, with limited opportunities for market engagement and their collective action. Weak infrastructure, remoteness, and male-dominated institutions further restrict them to access towards cooperatives, land rights, and new technologies. Despite these differences, women across both systems and different regions face common challenges, including heavy workloads, declining natural resources, male outmigration, and limited policy recognition. Strengthening women's land entitlements, expanding self-help groups, and promoting women-led cooperatives are essential to making their contributions visible and sustainable.

### **Barriers that hold women back**

While women contribute enormously to crop and dairy based farming systems, several interconnected barriers prevent their empowerment:

1. Women are heavily engaged in income-generation activities such as dairy farming, weaving, petty production, alongside full domestic responsibility. However, this labour remains socially undervalued and institutionally invisible.
2. Even when women earn through activities such as dairy or selling farm produce, the income is largely used for family survival rather than women's own advancement, indicating lack of control over resources and outcomes.
3. Patrilineal inheritance and patrilocal residence systems as structural barriers. These restrict women's access to productive assets such as land and property, which are critical for autonomy in agriculture and dairy enterprises.
4. Girls' dropout rates are very high across northeastern states (Roy, 2025), which limits women's ability to adopt improved technologies, access information, or engage effectively with extension systems relevant to agriculture and dairy.
5. Traditional methods are still practiced by most of the women farmers in rural villages, which do not allow them to take advantage of modern techniques which increase difficulties in the way of their empowerment.
6. Women farmers are also affected by the effects of climate change in the agriculture sector. Their crops may get affected due to erratic weather, lack of rain or increasing heat etc., which may lead to face greater barriers in access to productivity than men.

### **What can change- Practical Pathways for Support**

Women in Northeast India are not peripheral participants in agriculture, they are foundational to farming systems, biodiversity stewardship, and household nutrition. The challenge ahead is therefore not to bring women into agriculture, but to reform the institutional, market, and technological frameworks so their existing contributions are acknowledged and reinforced. Progress should be approached holistically, spanning structural reforms, economic opportunities, technological inclusion, and socio-cultural transformation by guiding into the following areas:

- Most of the agricultural machinery nowadays is such that it is difficult for women to operate it and handle on their own, so the manufacturers and designers of this machinery should be encouraged to come up with a better solution towards this problem.
- Co-operative societies can include women as a members and stakeholders, so that they too can get the facility of loans, technical guidance, marketing of agricultural products, etc. from co-operative societies which will help them in attaining their empowerment.
- For women to be able to attain an institutional loan, there should be a joint lease on the farm in the name of husband and wife, which action can be taken up by requirements of adding two names in the lease.
- Better access to credit, technology and provision of entrepreneurial capabilities will further boost women's confidence and help them get recognised as farmers in national statistics and surveys.

- Training and skills have been provided to women by some self-help groups and cooperative dairy activities. These can be further developed through Farmer Producer Organisations (FPOs).
- Women-centric strategies and dedicated expenditure should be included in government flagship schemes such as the National Food Security Mission (NFSM), the sub-mission on seeds and planting material, and the Rashtriya Krishi Vikas Yojana (RKSY).

### **Why does this matter for the future of agriculture?**

Because this is not only a women's issue, it is fundamentally an issue of sustainability. Hill agriculture is already under severe pressure from climate change, soil degradation, shrinking forest resources, youth outmigration, and growing economic uncertainty (Schröder *et al.*, 2024). Women are not occasional helpers in agriculture as they are the primary managers of everyday farming life. They prepare fields, conserve seeds, manage crop diversity, care for dairy animals, collect fodder and fuelwood, process food, and maintain the household economy, which are all within terrains that are physically demanding and environmentally fragile. However, rapid environmental change is making this work harder. Erratic rainfall patterns, declining forest resources, soil erosion, and shrinking common lands are increasing labour intensity while reducing agricultural returns. At the same time, youth migration in search of education and employment leaves women with expanded responsibilities but fewer support networks, creating a silent feminisation of agricultural distress (Brahma, 2023). Traditional ecological practices such as mixed cropping, indigenous livestock care, and community resource management are surviving largely because women continue to practice and transmit them, but these knowledge systems risk disappearing if women remain unsupported and overextended. Strengthening the situation of women farmers in Northeast India is therefore not a social welfare gesture but an agricultural necessity. When women are recognised as central producers, given secure access to resources, and included in community leadership, farming systems become more stable, biodiversity is better protected, and households are more capable of absorbing environmental and economic shocks.

### **Time to See the Hands That Feed the Hills**

Across the hills of Northeast India, women continue to rise before dawn, work through exhaustion, and hold together households, farms, and food systems with little recognition. Their labour is not supplementary, but it is foundational. Yet policy frameworks, institutions, and social norms still treat them as invisible contributors rather than as farmers, decision-makers, and leaders. If agriculture in these fragile landscapes is to survive the pressures of climate change, economic uncertainty, and social transformation, it must begin by placing women at the centre of solutions. Recognising women as farmers, investing in their skills, reducing their drudgery, and strengthening their collective voice are no longer optional as they are essential. The future of hill agriculture depends on whether we choose to finally see, value, and support the invisible hands that feed the hills.

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