The Gender Paradox in Rural India's Structural Transformation – A Time-Use Embedded Gender Analysis

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Abstract

India's recent increase in female labour force participation has been concentrated overwhelmingly in rural agriculture and in unpaid forms of work, raising critical questions about the quality, productivity, and agency associated with women's employment. Using periodic labour force survey and time-use data, this paper examines women's participation in agriculture and the distribution of paid and unpaid work in rural India through the lens of structural transformation. The analysis reveals that a majority of rural women remain employed in low-productivity, unpaid agricultural activities, alongside a persistent gender wage gap in remunerative work. Time-use evidence further shows that women continue to shoulder a disproportionate burden of unpaid domestic and care work, substantially constraining their engagement in paid employment, despite decades of policy interventions through centrally sponsored schemes and targeted budgetary allocations. Together, these findings point to a gendered disconnect between India's services-led growth and women's economic outcomes.

The paper recommends a time-use-based, outcome-oriented framework for gender budgeting, where policy performance is explicitly linked to measurable reductions in women's unpaid work and improvements in their labour market outcomes. It also underscores the need for strengthened time-use data systems and a whole-of-institutions approach—spanning the Centre, States, local governments, and civil society—to enhance women's agency and enable their transition into more productive employment. This paper is prepared as a primer to more comprehensive work on female labour force participation in the context of India's structural transformation, across a wide spectrum of activities – from agriculture to artificial intelligence (AI).

I. Unique Trajectory of India's Structural Transformation and the Absence of Women in it.

Structural transformation refers to the reallocation of economic resources, especially labour, from low-productivity sectors such as agriculture to higher-productivity activities in manufacturing and services, driving long-term growth and development.[2] It is often regarded as the hallmark of modernisation, marked by sectoral shifts in output and employment, urbanisation, scale economies, and transitions from self-employment to formal wage work.[3] Contemporary scholars incorporate demographic transitions, rural-urban migration, and human capital accumulation as additional enablers, emphasising that successful transformation requires complementary investments in education, infrastructure, and institutions.[4] However, structural transformation often falters in low-income contexts

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The study is a part of the Economic Policy for Women-led Development (EPWD) initiative supported by Gates Foundation.

[2] Martin (2019).

[3] Kuznets (1957, 1966); Chenery (1960) and Chenery & Taylor (1968).

[4] Temple (2005);) Lin (2011) and Ju, Lin, & Wang (2015).

owing to premature deindustrialisation, persistent agricultural labour traps, informal markets, and weak institutions, trapping workers in low-output activities even as modern sectors expand.[5]

India and many other emerging market economies have followed a distinctive trajectory of structural transformation, moving directly from agriculture into services, in contrast to the pattern observed in most advanced economies. In her seminal 1994 paper[6], Claudia Goldin noted that "the path the world's developing countries are currently taking will never trace out that which the United States took to the present" — a prescient observation that resonates even more strongly today. The growth path that developing are now following diverges sharply from those of today's high-income nations that historically became wealthier through a sequential agriculture-manufacturing-services model. For instance, India, now the world's fourth-largest economy and the fastest-growing emerging economy, has instead leapfrogged manufacturing to become services-led. This accelerated growth, however, has followed a heterogeneous path marked by uneven regional and sectoral shifts as well as labour absorption challenges. Unlike homogeneous developed economies that industrialised broadly, India's patchwork of states, castes, religious beliefs and rural-urban divides has meant that structural transformation has been starkly uneven across geographies and demographics.

Structural shifts in employment have accompanied India's development, but the classic manufacturing-led transition has largely been bypassed, resulting in weak manufacturing job creation for both women and men. Between the early 1980s and 2012, agriculture's employment share declined from roughly 69% to below 49%, while industry's share stagnated. In contrast, services expanded from 18% to over 30% of total employment[7]. Manufacturing's limited capacity to absorb labour reflects a growth strategy skewed towards capital-intensive sectors such as electric vehicles and semiconductors, pushing displaced agricultural workers mainly into low-productivity construction. Moreover, the dominance of informal and small-scale enterprises at both aggregate and sectoral productivity leaves most workers trapped in low-productivity employment. Since 2019, the shift from agriculture to services has been uneven as trade and transport have absorbed some labour, but skill constraints and male migration have largely confined women to agriculture. By 2023, only 37% of men remained in agriculture, compared to over 60% of women, underscoring persistent gender gaps in structural mobility.

The most visible facet of India's transformation story is that economic growth has been without a commensurate expansion of women's economic agency - creating a "gender paradox" in the country's development story. Despite the recent improvements, India's overall female labour force participation is strikingly low. As per the latest Periodic Labour Force Survey data, only 35.6% of women enter the labour force, and only 33.8% get absorbed in the workforce.[8] Among women working, more than one-fourth are concentrated in unpaid agricultural work, meaning that even those who are "employed" are not engaged in remunerative activities but instead form the visible tip of a much larger, invisible economy.[9] The aggregate growth gains mask deeper trends of women remaining saddled with unpaid

[5] Rodrik (2016); McMillan, Rodrik, & Verduzco-Gallo (2014).
[6] Goldin (1994)
[7] National Accounts Statistics, MoSPI
[8] Authors calculation from Periodic Labour Force Survey (PLFS) Data.
[9] *Ibid*.

care work and being sidelined into unremunerative work in agriculture, while men dominate construction, formal services, and manufacturing. The female labour force participation in India, therefore, stands in contrast to India's structural transformation, where the services sector now drives the bulk of value added.

This paper represents our first step towards understanding how women participate in paid and unpaid work and its linkages with India's structural transformation, using time-use and employment data as the core tools. It is a primer to more comprehensive work on India's structural transformation and female labour force participation. While India's economy has become largely services-led with a substantial fall in the output contribution of the agriculture sector, the recent rise in female labour force participation has not been driven by employment in the services sector but by an increase in women working in rural India's agricultural sector, and largely as unpaid family workers. These patterns underscore the need for a gendered analysis of India's structural transformation, which merits separate assessments by economic sectors (agriculture, manufacturing and services) and rural–urban locations, rather than through a single national narrative.

The paper focuses on rural India and the agriculture sector, in an attempt to examine why rising female workforce participation has taken the form of unpaid agricultural work. It proposes a time-use-based framework for using gender budgeting as a tool, shifting women from unpaid to paid employment, as a key enabler of a gendered structural transformation of the economy. Over time, this work will broaden to span the full spectrum of sectors—from agriculture to AI—to better understand patterns in female labour force participation, their time-use and help identify key policy levers for improving women's labour force participation, with a particular focus on strengthening gender budgeting.

The rest of the paper is organised as follows. Section 2 discusses the global and India-specific literature on female labour force participation within structural transformation, highlighting the trends, the underlying factors and the evidence from India. Section 3 discusses the labour force data, focusing on rural India, delving deeper into the sub-sectoral labour force and wage data for men and women in the agriculture sector. This section largely establishes the predominance of women in the unpaid segment of the agriculture labour force. The following section – Section 4 – uses data from India's Time Use Survey (TUS) to inform the discussion, especially around the time spend by rural women on paid and unpaid work and how that has changed over time and in relation to men. Drawing on the full body of evidence and analysis in the paper, Section 5 recommends a targeted framework to address women's time poverty and strengthen their labour force participation through the strategic use of gender budgeting. Anchored in sub-national case studies, best practices, and lessons from failures, the framework advances an outcome-oriented approach to support women's pathway along India's structural transformation. Section 6 concludes the discussion.

II. Distinct Pathways of Men and Women within Structural Transformation and Evidence from Time-use Analysis: Global and Indian Context

Goldin's (1994) seminal contribution established that women's labour force participation follows a U-shaped pattern over the course of economic development. As economies start developing, women's participation initially declines as higher household incomes reduce the need for their earnings, factory production replaces home-based work, and the substitution effect (incentive to work as wages rise) remains weak. In the later stages of development, rising female education and growth in white-collar and service jobs increase the returns to women's work, strengthening the substitution effect and leading to women's re-entry into the labour market, completing the upward turn of the U-shape.

The labour force participation trajectories for men and women are distinct in the development process. Chiplunkar and Kleineberg (2021), using data from 91 countries over several decades, show that men tend to follow the textbook pathway of structural transformation, moving from agriculture into manufacturing and then services. Women, however, often exit the labour force entirely after leaving agriculture and re-enter primarily into services at higher income levels, with limited participation in manufacturing. Moreover, gender segregation across sector–occupation cells follows an inverted-U over development, indicating that gender sorting intensifies at intermediate stages before declining. Peters et al. (2024) further advance this literature by embedding labour market frictions, rural–urban heterogeneity, and intra-household specialisation into models of structural change, concluding that structural transformation is not gender-neutral and that improvements in gender equality require explicit institutional and cultural reforms rather than being automatic by-products of growth.

Women's labour market outcomes are shaped profoundly by unpaid work burdens, restrictive social norms, and constraints on mobility and agency. A large body of evidence shows that women shoulder disproportionate domestic and care responsibilities, face limited physical and social mobility, and have reduced decision-making power—factors that suppress their engagement in paid work even amid economic growth and diversification. Alvarez (2022), using a structural transformation model with cross-country census data, demonstrates that easing these constraints can yield large welfare and output gains, especially in unequal regions such as South Asia and the Middle East. Dinkelman and Ngai (2021) draw on historical and contemporary evidence to show that childcare services, flexible work arrangements, and productivity-enhancing infrastructure have been critical in facilitating women's transition from home to market work—conditions that remain weak in many developing economies.

Time-use research offers a critical lens for understanding how norms and unpaid work shape women's economic outcomes. Mincer (1962) provided the traditional framework for analysing the decision of women to join the labour market and allocating their time between leisure, work at home and work in the market. Charmes (2019) documents persistent time poverty arising from women's disproportionate unpaid care responsibilities. Andreescu et al. (2025), using harmonised historical labour-hour data, demonstrate that gender pay gaps are significantly underestimated once unpaid domestic work is included, revealing long-run inequalities rooted in power relations within households. Matulevich et al. (2019), analysing

time-use data across 19 countries, find a strong "marriage and motherhood penalty" for women, marked by reduced labour force participation, heavier unpaid workloads, and lower leisure, while men face no comparable penalties. Together, this evidence underscores that intra-household time allocation is central to explaining cross-country variation in female labour force participation and the gendered dynamics of structural transformation.

In India, rapid growth and structural change have not translated into commensurate gains in women's paid work. Rural women remain concentrated in low-hour informal farm work while urban women often exit the labour force due to inflexible formal jobs, and show that only easing discrimination and restrictive norms—not productivity growth alone—substantially boosts female labour force participation (Peters *et al.*, 2024). Using a collective household model, Afridi et al. (2024) demonstrate how interactions between home productivity, social expectations, and wage growth produce a non-linear labour supply response in contexts like India.

Some studies also evaluate the demand side explanation of women's skewed workforce participation, noting that there is inadequate labour demand to absorb women who may have freed up time from unpaid work. Afridi, Bishnu, & Mahajan (2020) show that mechanisation significantly reduces women's labour in agriculture, while men's labour use remains largely unaffected - underscoring the need to expand women's alternative employment opportunities, including re-skilling, to mitigate the adverse effects of mechanisation on female labour force participation. Afridi et al (2022) showed that a switch to cleaner energy could generate important time savings in home production (up to 2.3 hours/week), but low market wages for women and limited labour market opportunities may not make it worthwhile for households to move of primary cook time into the market. Deshpande and Singh (2024), using labour force microdata and a Bartik-style identification strategy, showed that India's FLFPR shrank between 2011-2018 as structural transformation displaced women from paid agricultural work without generating sufficient non-farm jobs, especially in manufacturing and services. Studies (Heckman and MaCurdy, 1980; Jaumotte, 2003; Eswaran, 2013) also include wages as a key driver of female labour supply, indicating that working for a wage is chosen by women only if earnings at least make up for lost home production.

Micro-level evidence reinforces the centrality of unpaid domestic responsibilities and cultural, social and institutional constraints on the supply side. Deshpande and Kabeer (2024), using primary data from West Bengal, show that domestic chores emerge as the key constraint preventing women's participation in paid work, and many women categorised as "out of the labour force" are in fact engaged in unpaid productive work. Their findings underline a large unmet demand for paid work that is compatible with domestic responsibilities and for employment that is flexible and proximate. Goel and Adhikari (2025) found a strong "marriage penalty", with married women devoting substantially more time to unpaid domestic work than unmarried women, and higher unpaid work burdens among women with primary or secondary education. Male time contributions to domestic work have changed very little over two decades, with only a marginal narrowing of the gender gap in unpaid work. These findings underscore that structural transformation in India has not eased women's domestic workload, and that slow progress in care marketisation, adoption of labour-saving technologies, and basic infrastructure continues to constrain women's labour market engagement.

Research on migration and feminisation of agriculture further brings out an interesting aspect of agriculture – increased workload without agency. Across diverse agroecological regions, women often take on increased agricultural and managerial responsibilities in men's absence (Raj et al. 2025). However, the extent to which this translates into enhanced decision-making power or empowerment depends critically on remittance patterns, caste, class, life stage, and local institutions. In many cases, workloads increase without commensurate gains in control over resources or strategic choices. Das et al. (2021) found the rising share of women in agricultural work cannot be interpreted as straightforward progress as women remain concentrated in low-value tasks, face limited access to land, credit, and technology, and confront persistent discrimination. Feminisation often reflects male withdrawal or distress migration rather than improvements in women's agency, and call for gender-responsive agricultural policies, including better-targeted support, gender budgeting, and more inclusive research and technology design.

Existing literature therefore, points to a gender paradox in structural transformation, particularly in India, which merits a closer examination. Unpaid work, norms, and weak enabling conditions that result in time poverty are central constraints to female labour force participation, particularly in India. Even when time is freed, there are demand-side constraints like low wages and limited job opportunities reduce incentives to join the labour market. While India's structural transformation has increased women's participation in agriculture, yet, most of it is nonremunerative in nature. Moreover, feminisation of agriculture signals increased workloads, not empowerment. It is this aspect of the gender paradox in female labour force employment that is explored further in the paper using stylised facts.

III. Analysis of the Labour Force

India's labour force participation and structural transformation exhibit a complex and uneven development trajectory marked by heterogeneities in growth and employment.[10] Historically, male labour participation declined from about 84% in 1991 to 76% in 2020, with a slight recovery afterwards, largely reflecting increased education and training among youth (Figure 1). Female labour force participation rose from around 30% in 1991 to nearly 35% 2005, then sharply declined until 2020. Nearly 20 million women left work between 2004–05 and 2011–12, and the labour force participation rate for women of working age fell from 42% in 1993–94 to 31% in 2011–12.[11] However, participation has rebounded to approximately 33% by 2024.[12]

[10] It is worth mentioning here that India's labour force data collection and reporting mechanism itself has undergone changes. This paper focuses on analysing India's labour market since 2017 when the Periodic Labour Force Survey (PLFS) was launched in 2017 by the National Statistics Office (NSO, formerly NSSO) to provide more frequent data—quarterly urban estimates using Current Weekly Status (CWS, past 7 days) and annual rural-urban figures using Usual Status (ps+ss, past 365 days), addressing gaps in prior infrequent NSS Employment-Unemployment Surveys (EUS). Compared to NSSO surveys, PLFS uses a distinct sampling framework and analytical approach, with differences in categorising own-account workers (self-employed in own enterprises) and unpaid family helpers. PLFS tracks key metrics like Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR), and Unemployment Rate (UR). Before the PLFS was introduced, India relied on quinquennial NSSO Employment–Unemployment survey, which was last conducted in 2011–12. This biggest difference lies in the method to select households in the second stage of stratification. Earlier NSSO rounds stratified households by expenditure, while the PLFS stratifies them by educational attainment.

[11] https://wol.iza.org/news/millions-of-women-are-dropping-out-of-the-workforce-in-india#:~:text=India%20is%20experiencing%20a%20decline,join%20the%20labour%20force%20early.%22

[12] This data is sourced from World Bank WDI, since a comparable time-series is not available from India's national statistics as the labour force sampling methodology changed after 2017

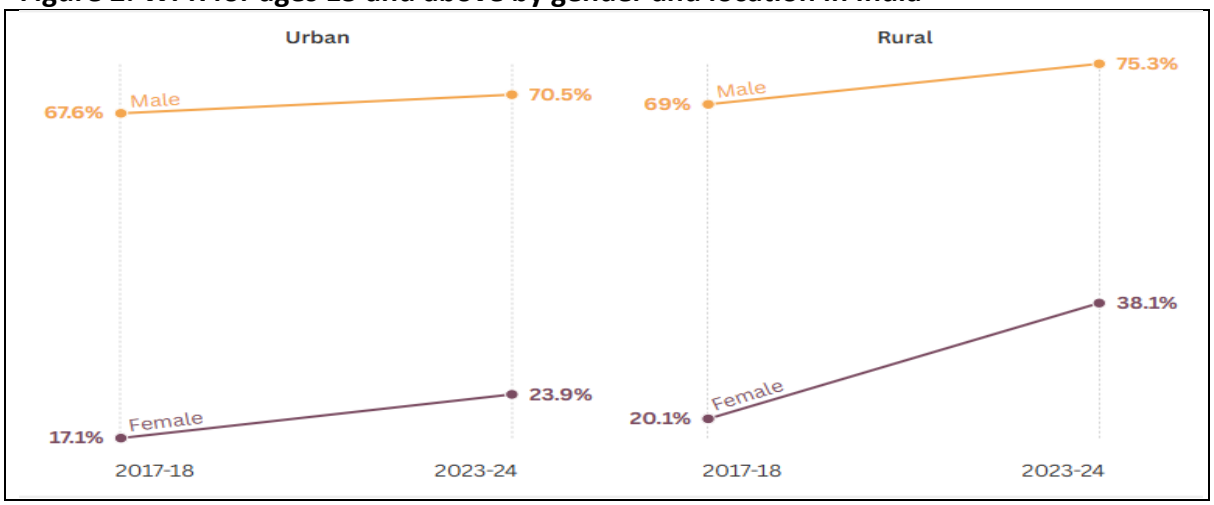
Figure 1: Change in India's Labour Force Participation Rates (1991-2024)



Source: World Bank, World Development Indicators

India's labour market has undergone significant changes since 2017, with rural India outperforming urban areas and women outperforming men. One, the worker population ratio (WPR) has increased for the country, with rural India experiencing a sharper rise. The Worker Population Ratio (WPR) for individuals aged 15 and above has risen from 44.1% in 2017–18 to 53.7% in 2023–24 for the overall economy and from 44.8% to 56.5% for rural India. In contrast, the increase in urban India was much more modest, with WPR rising from 42.6% to 47.4%. A similar divergence in WPR trends is visible across gender. While the male WPR increased from 68.6% to 73.8%, the female WPR rose at a much faster pace, increasing from 19.2% to 33.8% between 2017–18 and 2023–24. The dramatic rise in India's female labour force participation between 2017-18 and 2023-24 has come largely from rural India. The WPR for women in urban areas increased only to 23.9% - while rural female WPR nearly doubled from 20.1% in 2017-18 to 38.1% 2023-24 (Figure 2).

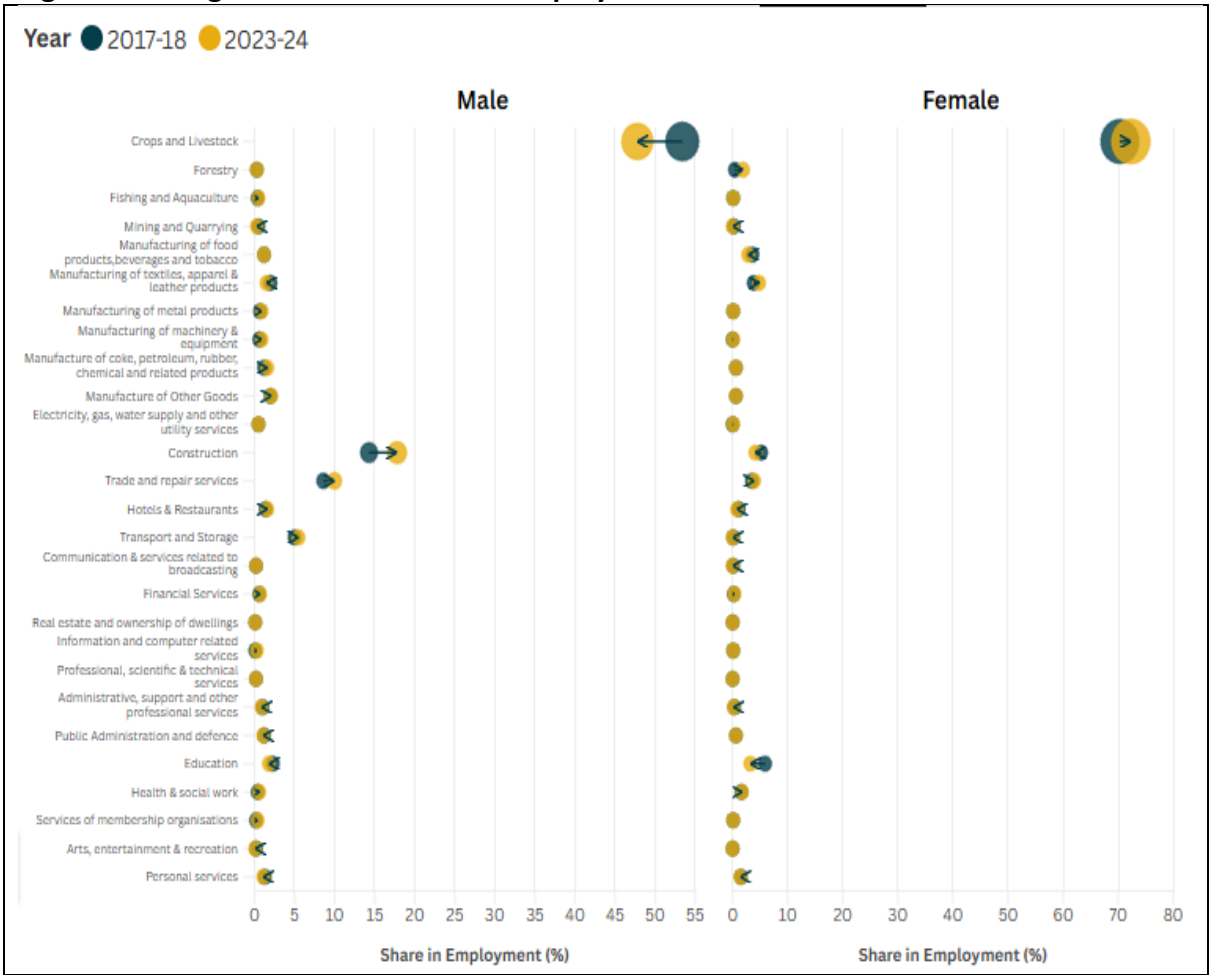
Figure 2: WPR for ages 15 and above by gender and location in India



Source: Author's computation of the PLFS

The doubling of the female WPR in rural areas is essentially a reflection of the feminisation of agriculture, where women have moved in to replace male agriculture workers who have moved into construction or migrated to urban areas for work opportunities. In 2023–24, a majority of rural workers (56%) were employed in the crops and livestock sector (representing agriculture), followed by construction (13%). The services sector absorbed much lower proportions of the labour force. However, sectoral employment patterns differ starkly by gender - the crops and livestock sector, for instance, accounts for 48% of male employment but an overwhelming 72% of the female employment. Figure 3 also reflects a decline in the male workforce and an increase in the female workforce in 2023-24, compared to 2017-18, potentially indicating a shift of male agricultural workers into other sectors.

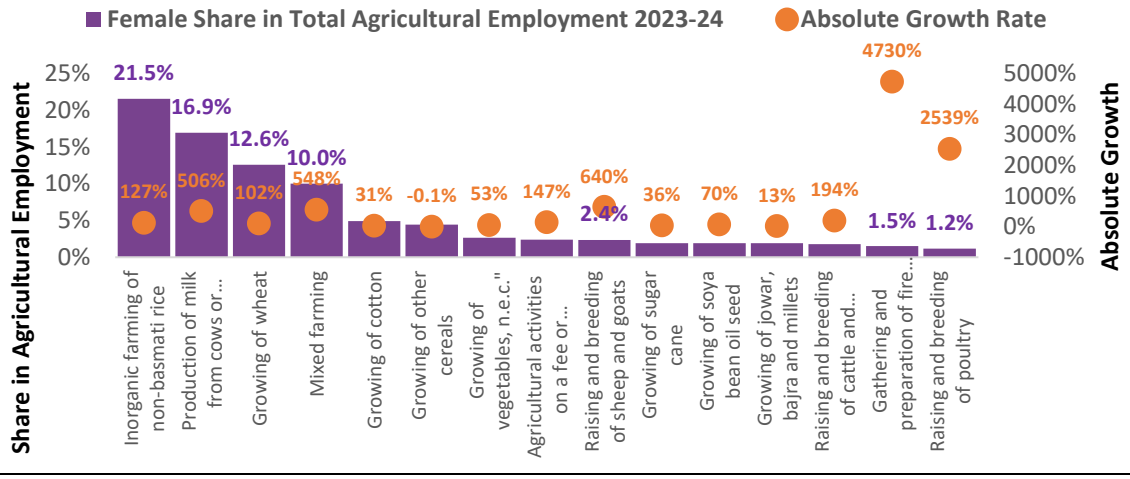
Figure 3: Change in Sectoral Share of Employment in Rural India



Source: Author's computation of the PLFS

Within agriculture, most women are employed in core agricultural activities, but the numbers are rising in low-productivity jobs. At a disaggregated level, most women are employed in the production of wheat, rice and poultry farming, which are some of the core agricultural sectors in India. However, when compared to 2017-18, a majority of growth in female workforce participation was witnessed in the raising and breeding poultry and cattle and gathering firewood sectors- most of which are unpaid, and low value-added jobs (Figure 4).

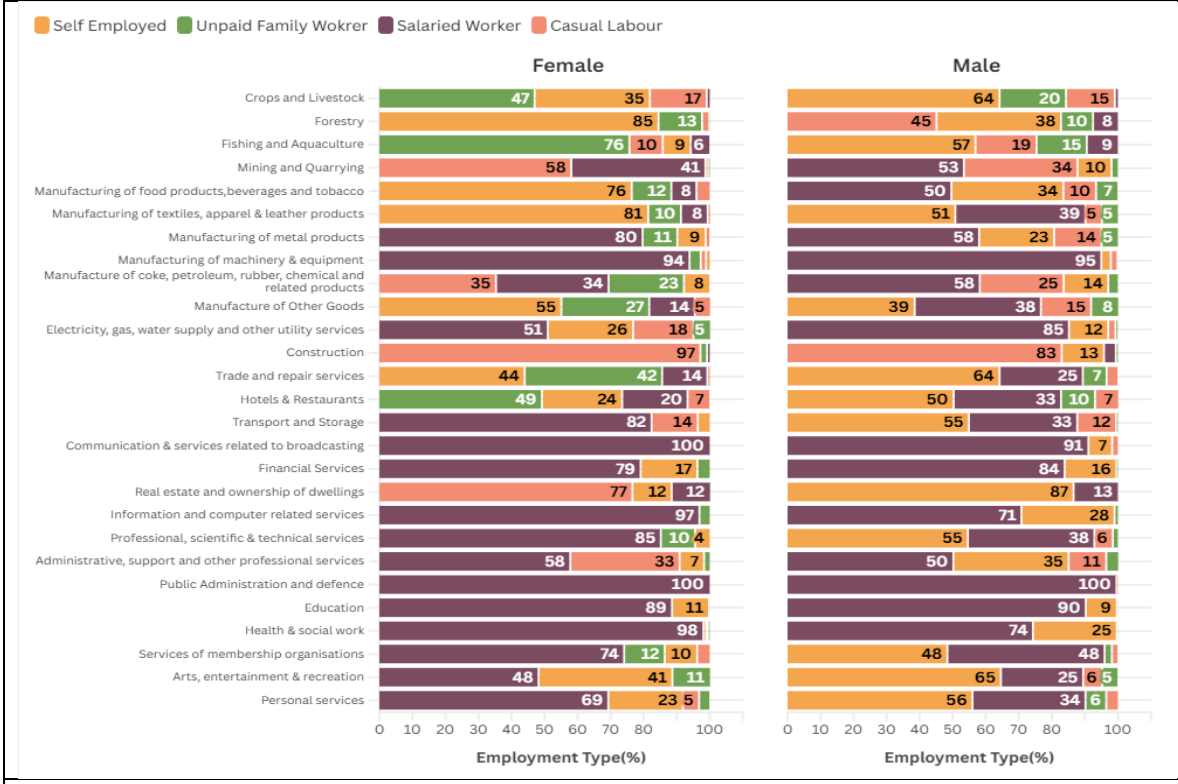
Figure 4 : Distribution of Rural Female Agricultural Employment by Sub Sector and Growth



Source: Author's computation of the PLFS 2023-24

This unpaid work is, in fact, the most striking feature of rural female employment - a majority of women in the sector today are unpaid and unremunerated. In the past decade, structural shifts in the Indian workforce have drawn rural men into higher-paying non-farm jobs, leaving women to replace them to do the unpaid agricultural work. As a result, women's employment in agriculture surged by 135%. Nearly 47% of women in the crops and livestock sector work as unpaid family workers on their own farms, without receiving any monetary compensation. In contrast, a majority of men (64%) in the same sector are engaged in paid self-employment (Figure 5). This is even though the share of women in paid self-employment nearly doubled, from 19.4% in 2017–18 to 34.9% in 2023–24.

Figure 5: Distribution of Workers by Employment Type and Sectors in Rural India



Source: Author's computation of the PLFS

Unpaid family workers now comprise nearly half of all rural female agricultural workers, which also indicates the true earnings per hour are even lower. When it comes to women, there are two main categories of unpaid work - the first being in domestic work (collecting fuel and water, preparing food, caring for family members and maintaining the house) and the second being women who are self-employed helpers in family enterprises and do not earn any regular wages. Both kinds of work directly or indirectly contribute to economic gains and the well-being of households (Goswami and Bordoloi, 2013, Doss, 2011). Nearly half of the women in agriculture are unpaid family workers, with their numbers jumping 2.5 times from 23.6 million to 59.1 million in just eight years. In some of the large agricultural states like Bihar and Uttar Pradesh, more than 80% of women workers are in agriculture, and over half of them receive no wages.[13] In fact, two out of every three working Indian women are now in agriculture – and since half of them are unpaid family workers, one in three working woman in India today is unpaid.

Much of this invisibility stems from systemic inequities. Women are not officially recognised as farmers, own only 13–14% of land holdings, and earn 20–30% less than men for equivalent work. Asset ownership, decision-making power, access to credit and government support remain firmly male-dominated, excluding women from leadership roles and trapping them in low-value activities. Larger landholdings in self-employed or casual agricultural households increase the likelihood of women's unpaid involvement, as does distress from stagnant wages and male migration, absorbing surplus labour without remuneration.

Women in agriculture not only work fewer hours on average but also earn among the lowest wages per hour across sectors. Table 1 shows that wages per hour are amongst the lowest for women in the agricultural sectors like crops and livestock production and forestry, while for men, it is the lowest in the construction sector, manufacturing of textiles and food products and certain services, like trade and repair, and hotel and restaurants, among others. Moreover, there is a wage gap and a gap in the number of hours worked.

Given both the continued dominance of agriculture in rural female employment and its growing contribution to recent employment expansion, it is evident that structural transformation in rural India remains limited. These trends underscore the need to focus not only on increasing employment opportunities for rural females but also on improving the quality and remuneration of the work available to them. The first step to that is uncovering the key factors that have kept women tied to unremunerative agricultural work.

[13] PLFS, 2023-24

Table 1: Sectoral Distribution of Hours Worked and Wage per Hour in Rural India in 2023-24

Sector	Male		Female		Gender Gap	
	Hours Worked in a Week	Wages Per Hour (INR)	Hours Worked in a Week	Wages Per Hour (INR)	Hours Worked	Wage Per Hour (INR)
Crops and Livestock	41	73	31.5	42.1	9.5	30.9
Forestry	40.4	69.6	15.6	30.7	24.8	38.9
Fishing and Aquaculture	44	87.7	35	68.2	9	19.5
Mining and Quarrying	46.1	105.3	43.8	67.9	2.3	37.4
Manufacturing of food products, beverages and tobacco	50	65.4	33.5	27.4	16.5	38
Manufacturing of textiles, apparel & leather products	51.9	61.8	28.8	41.2	23.1	20.6
Manufacturing of metal products	50	78	51.3	45.5	-1.3	32.5
Manufacturing of machinery & equipment	49.9	93	48.6	72	1.3	21
Manufacture of coke, petroleum, rubber, chemical and related products	50.5	85.3	42.1	50.2	8.4	35.1
Manufacture of Other Goods	49.6	70	32.9	35.2	16.7	34.8
Electricity, gas, water supply and other utility services	49.8	102.3	38.3	55.6	11.5	46.7
Construction	44	61.3	36.4	41.3	7.6	20
Trade and repair services	54.2	66.7	41.5	48	12.7	18.7
Hotels & Restaurants	53.5	65.7	41.1	55.7	12.4	10
Transport and Storage	52.3	71.9	48.3	105.2	4	-33.3
Communication & services related to broadcasting	46.9	109.8	48.2	99.5	-1.3	10.3
Financial Services	48	137.6	42.4	93.3	5.6	44.3
Real estate and ownership of dwellings	43	162.6	39.7	57.3	3.3	105.3
Information and computer related services	46.8	158.5	44.6	186.7	2.2	-28.2
Professional, scientific & technical services	45.5	101.4	42.2	146.8	3.3	-45.4

Administrative ,support and other professional services	49.6	89.1	39.5	54.3	10.1	34.8
Public Administration and defence	49.3	144.2	41.6	93.6	7.7	50.6
Education	41.9	175.1	35.7	94.5	6.2	80.6
Health & social work	52	87.7	43.2	66	8.8	21.7
Services of membership organisations	40	79.1	40	24.6	0	54.5
Arts, entertainment & recreation	40.1	95.8	28.8	104.5	11.3	-8.7
Personal services	49.3	60.8	34.4	39.9	14.9	20.9

Source: Author's computation of the PLFS, 2023-24

IV. Using the Time-use Data to Unravel the Gender-Paradox

Time use surveys are a key tool that facilitates the assessment of men and women's participation in paid and unpaid activities, thereby enabling a more comprehensive assessment of their economic contributions as well as "time poverty". While there are several reasons for low female labour force participation, time poverty is a significant supply-side factor - more than half of the female respondents in the PLFS cited domestic responsibilities (childcare and personal commitments in homemaking) as the reason for not joining the labour force. Compared to this, only 1% of the men cited this as a reason in 2023-24 survey (Table 2). Interestingly, there has been a significant fall in women citing that they did not have the required training or qualification as well as those citing non-availability of work at a convenient location.

Table 2: Reasons for being out of the labour force

Reasons	2023-24				2020-21			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
Did not have the required training/qualification/age for work	0.6%	**0.6%**	0.9%	0.3%	3.4%	**2.1%**	3.1%	1.4%
Non availability of work at a convenient location	0.1%	**0.6%**	0.2%	0.4%	0.5%	**1.0%**	1.0%	1.0%
Health/age related reason	36%	**16%**	38%	10%	25%	**12%**	32%	9%
Want to continue study	59%	**19%**	53%	16%	61%	**17%**	53%	16%
social reasons	0.1%	**3.5%**	0.2%	3.3%	0.4%	**5.6%**	0.5%	5.8%
Financially well-off	0.3%	**0.7%**	2.2%	1.6%	0.5%	**1.0%**	1.8%	1.5%
Childcare/personal commitments in home making	0.9%	**56%**	1%	64%	2%	**54%**	2%	59%
Others	3%	**3%**	4%	4%	6%	**7%**	7%	6%

Source: PLFS 2023-24 and 2020-21

In general, a significantly higher share of women undertakes unpaid activities compared to men in rural India, as visible from data from the 2025 Time Use Survey of India[14]. As many as 95% of rural women aged 15–59 engage in unpaid activities, devoting an average of nearly

[14] India's Time Use Survey (TUS) 2025 was conducted by the National Statistics Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI). This was the second nationwide survey following the 2019 edition, with fieldwork spanning January to December 2024 and key findings released in early 2025. This survey tracks how individuals aged six and above allocate their 24-hour day across activities, recording multiple tasks in 30-minute slots to capture paid work, unpaid domestic services, caregiving, volunteer efforts, learning, socializing, leisure, and self-care. Covering 139,487 households (83,247 rural and 56,240 urban) and 454,192 people, TUS uniquely quantifies gender disparities in unpaid labour.

400 minutes per day. In contrast, only 54% of men participate in unpaid work, spending about 130 minutes daily (Table 3). This implies that not only is the share of women spending time on unpaid work higher, but also the average time spent by them on unpaid activities is at least three times more than men. This highlights the disproportionately high and persistent burden of unpaid labour borne by rural women.

Table 3: Participation Rate and Average Time spent in a day per participant in Paid and Unpaid activities in Rural India (15-59 years)

Gender	Participation Rates				Average Time (in Minutes)			
	Unpaid activities		Paid activities		Unpaid activities		Paid activities	
	2019	**2024**	**2019**	**2024**	**2019**	**2024**	**2019**	**2024**
Male	53.7	54.1	67.1	74.5	166	130	422	401
Female	95.1	95.2	21.3	26.2	400	400	317	287

Source: Times Use Surveys of India, 2019 and 2024, MoSPI

Women carry a much larger burden of unpaid work compared to men, and it has only increased with time, despite there being numerous schemes to ease the burden. Women spend nearly twice as much time as men in unpaid caregiving activities. Within this, it is child care that takes up most of women's time. Moreover, the time spent by women on unpaid domestic activities is three times more than men, and within this segment, it is food and meal preparation that takes the most amount of time for women. While overall women's time on domestic services decreased, the decrease is largely driven by reduced time in some non-essential tasks like maintaining the dwelling, decoration and pet care, among others (see Table 4).

Table 4: Average time (in mins) Spent by Rural Men and Women in a Day (per participant, 15-59 Age group)

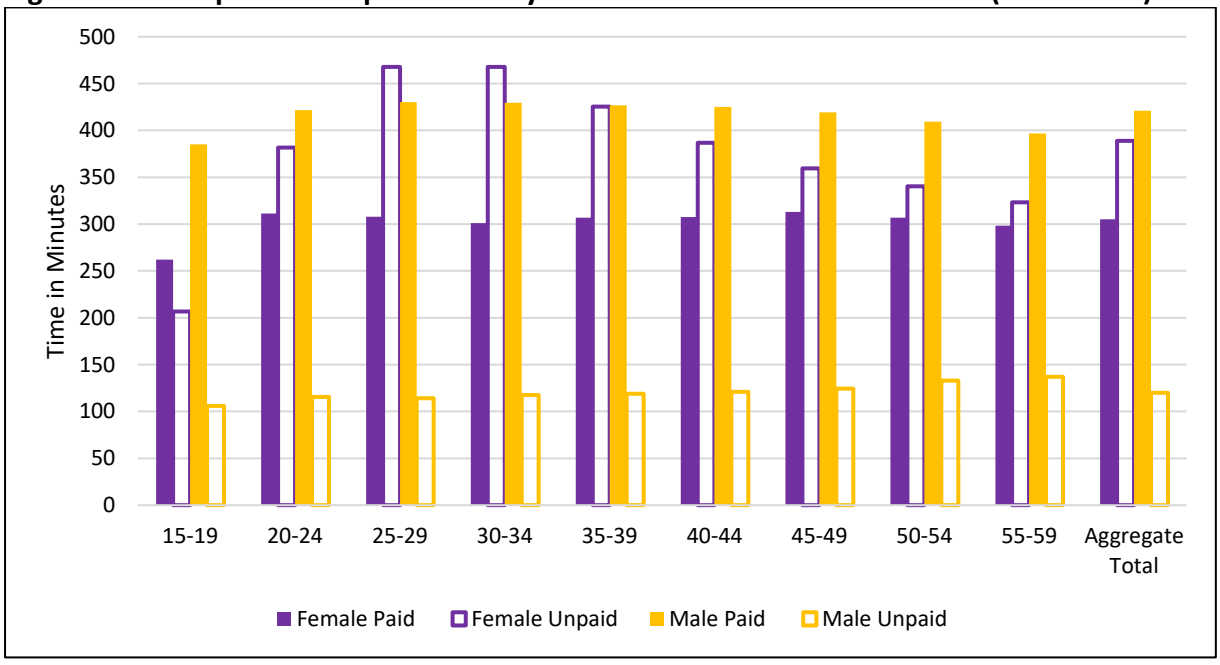
Activity	2019		2024	
	Women	**Men**	**Women**	**Men**
Unpaid caregiving services	***137***	***74***	***140***	***75***
Childcare and instruction	135	72	138	72
Care for dependent adults	82	96	85	78
Help to non-dependent adult household members	75	78	61	94
Travelling and accompanying goods or persons related to unpaid caregiving services for household members	74	84	70	73
Other activities related to unpaid caregiving services for household members	76	80	63	81
Unpaid domestic services for household and family members	***315***	***96***	***305***	***87***
Food and meals management and preparation	215	98	221	91

Cleaning and maintaining of own dwelling and surroundings	73	52	59	43
Do-it-yourself decoration, maintenance and repair	81	79	68	62
Care and maintenance of textiles and footwear	64	40	64	34
Household management for own final use	66	52	80	54
Pet care	88	94	67	67
Shopping for own household and family members	63	61	58	54
Travelling, moving, transporting or accompanying goods or persons related to unpaid domestic services for household and family members	62	67	58	60
Other unpaid domestic services for household and family members	93	69	91	74

Source: Authors' Calculations using Times Use Surveys of India 2024, MoSPI

Interestingly, women in their most productive years spend the most amount of time doing unpaid work. Women in their prime working years devote the greatest amount of time to unpaid work, with daily unpaid work peaking at 468 minutes in the 25–34 age group and declining gradually thereafter (Figure 7). This pattern is driven largely by the unequal burden of childcare borne by women. Men's time spent in care work increases modestly with age—primarily due to adult care—leading to a slight easing of women's care burden at later ages, although this effect weakens again among older men. Despite these shifts in unpaid responsibilities, women's paid work hours remain largely unchanged across age groups, underscoring the persistently higher overall work burden faced by women.

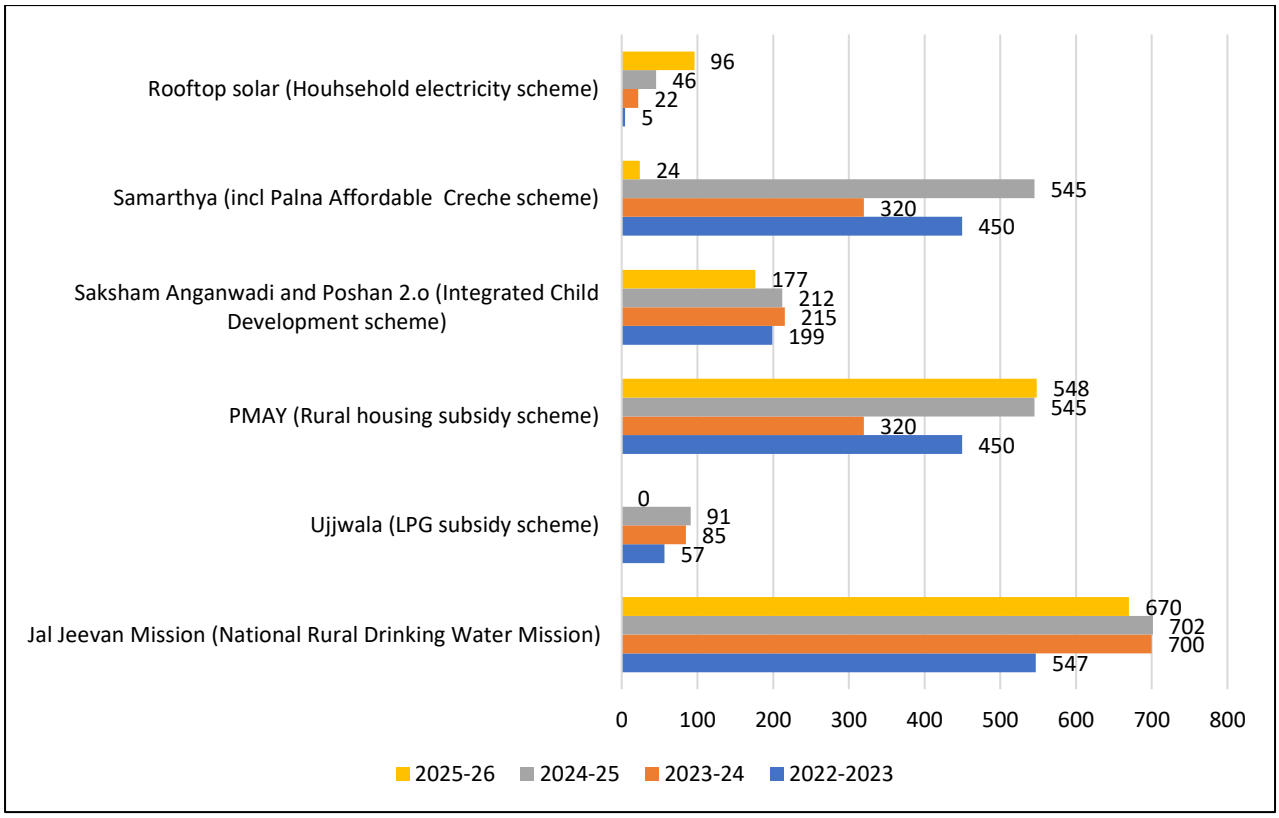
Figure 7: Time Spent on Unpaid Work by Males and Females in Rural India (In Minutes)



Source: Authors' Calculations using Times Use Surveys of India 2024, MoSPI

The persistence of a higher unpaid work burden on rural women is despite the expansion of budgetary schemes that could enable the reduction of women's unpaid care burden. Figure 8 illustrates the budgetary allocations made on various schemes intended to reduce the burden of unpaid domestic and care work. For instance, the Samarthya scheme is targeted to provide affordable creche facilities, while Ujjwala scheme is intended to provide clean cooking fuel to rural households. Despite the increased allocations for these schemes in the recent years, the time spend on unpaid work has only increased for women. This underscores the urgent need to integrate time-use data into the evaluation and design of government interventions.

Figure 8: Budget Allocation (Billion Rupees) to Schemes that Reduce Women's Domestic and Care Burden



Source: *Author's computation from India's Central budget, various years*

V. Using Time-Use Data to Inform Structural Transformation- A Gender Budgeting Framework

Time-use data can potentially capture the full spectrum of women's work, including paid, unpaid domestic and unpaid care, which the standard labour force surveys systematically underestimate. Juxtaposing evidence from India's labour force and Time Use Surveys (2019 and 2024) shows that gains in women's paid work time remain modest relative to the scale and persistence of unpaid work. This imbalance highlights that job-creation strategies that do not address structural divisions of domestic and care responsibilities are unlikely to meaningfully enhance women's autonomy, bargaining power, or long-term labour market attachment.

Recent research underscores the importance of integrating time-use data into policy design. Buvinic (2025) proposes a framework to strengthen the usage of time data through more frequent national surveys, embedding time metrics in rural programmes, and improving data uptake by guiding policymakers from awareness to application. Specifically for India, Abdu et al. (2025) show that time use evidence, when linked with the Women's Empowerment in Agriculture Index (WEAI), deepens understanding of gendered labour patterns, and can be used to inform gender-responsive agricultural strategies, balancing productivity, empowerment, and well-being. Chakraborty (2013) recommended applying time-incidence analysis to gender budgeting to assess women's burden of unpaid tasks like water collection and cooking, and thereby guide gender-responsive investments in water, sanitation, and energy infrastructure.

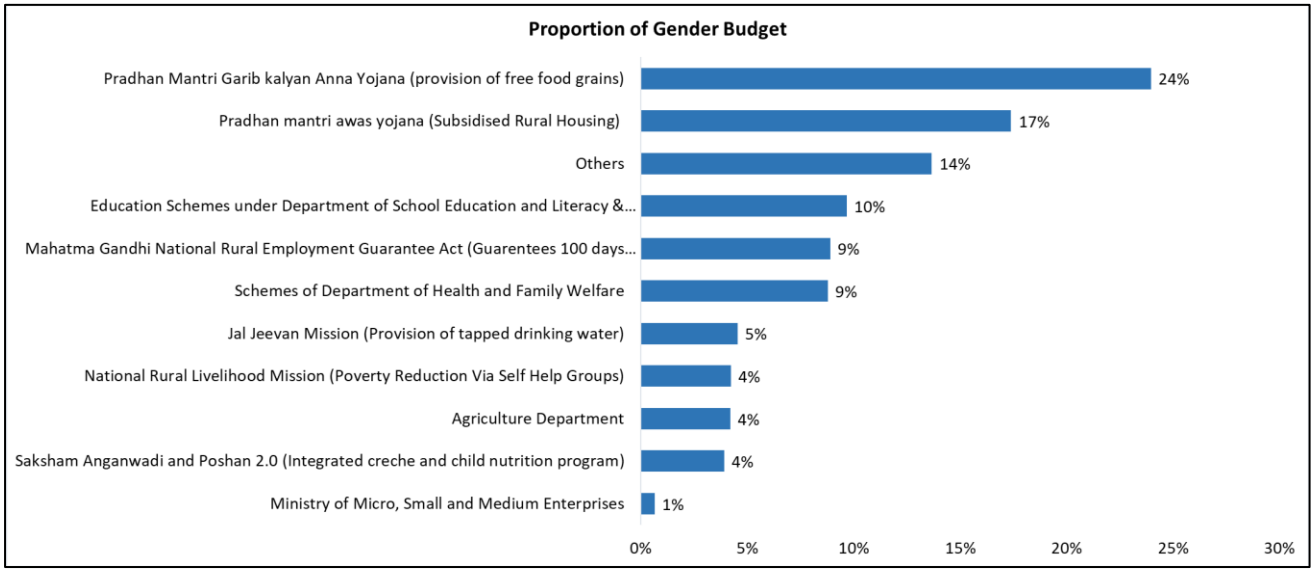
India's initiative to institutionalise time-use surveys places it in a relatively small group of countries with this capacity. Treating time-use indicators as part of the core planning, budgeting and statistical monitoring architecture would allow policymakers to track whether local interventions are actually reducing unpaid work as well as redistributing free time for skilling and paid work. Such integration must account for constraints on both the supply side (care responsibilities, low access to assets and skills, and restrictive gender norms) and the demand side (local availability of decent, flexible, or remunerative work).

One key tool that could enable this is the gender budget. India's gender budget, while expanding to about 8.9 per cent of the Union Budget and roughly 1 per cent of GDP in 2025–26, remains largely focused on allocations and scheme tagging rather than measurable outcomes. The current three-part classification (Part A: 100 per cent women-specific, Part B: 30–99 per cent, Part C: below 30 percent)[15] incentivises relabelling slices of existing schemes as gender-responsive without requiring redesign to tackle gender-specific barriers.

[15] www.Indiabudget.nic.in

Despite rising allocations, outcomes such as women's labour force participation, access to decent work, and reductions in time poverty have not improved proportionately. This disconnect is particularly visible in agriculture- although it employs the largest share of women, only around 4.2 per cent of the 2025–26 Gender Budget is directed to the sector, and a significant portion of that is routed through PM-KISAN, which largely reaches male landowners rather than women who supply unpaid family labour. This highlights how an input-driven approach can miss women at the frontline of production and fail to ease their unpaid work burdens (Figure 9).

Figure 9: Gender -Budget Allocations to Central Government Schemes that Enable Women

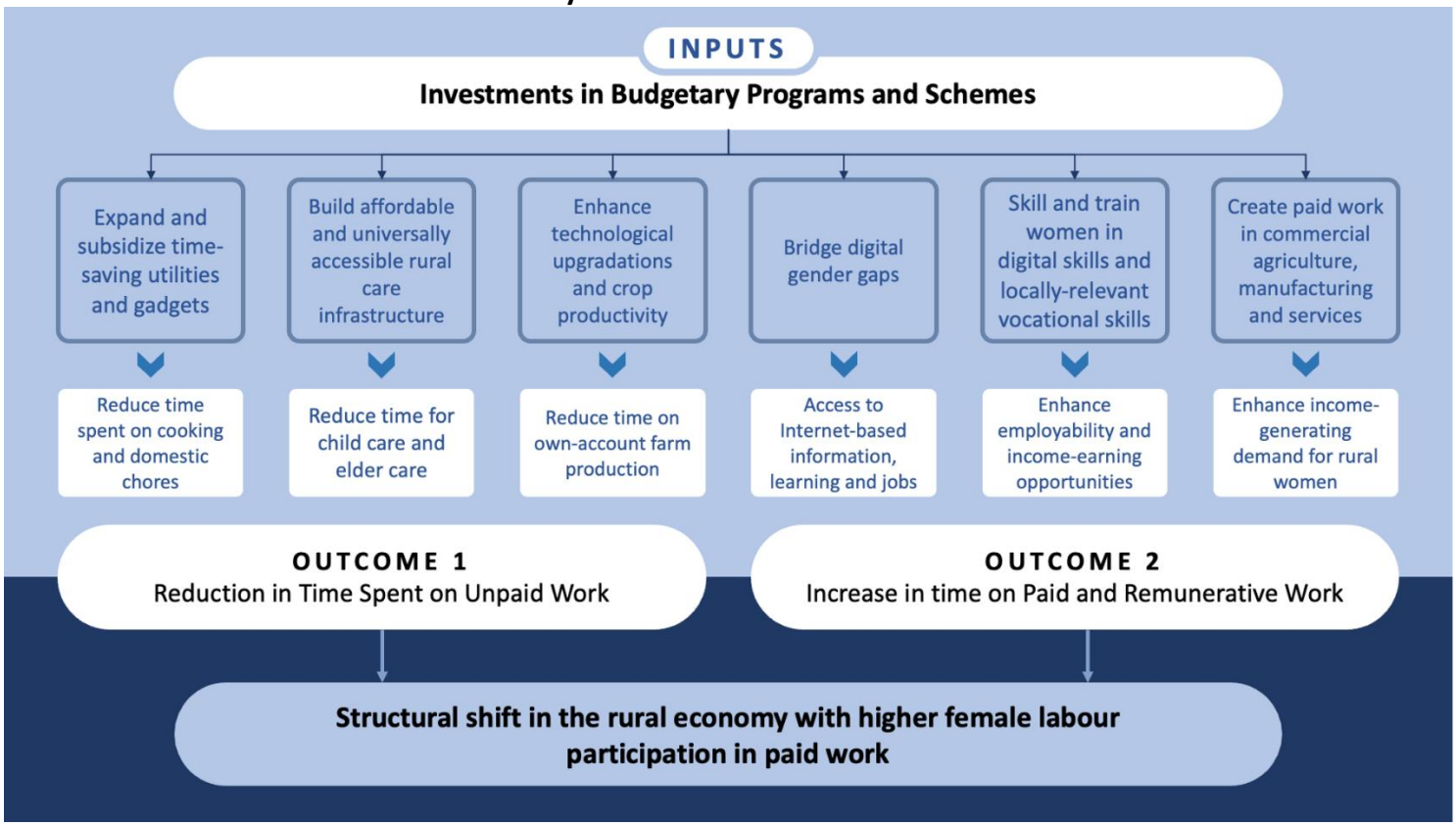


Source: Author's computation of gender budget of India's Central budget 2025-26

Therefore, India's gender budget needs to move from input-lens tagging to an outcome-based framework (Kapoor et al, 2024). Effective gender budgeting requires ex-ante gender analysis and ex-post monitoring of results, not just expenditure tracking. For gender budgets to enable meaningful structural transformation of women's work, it would be useful to shift to an outcome-based approach that explicitly uses time-use data to free women's time from unpaid work and redirect it toward higher-return, remunerative activities across agriculture, manufacturing, and services.

The proposed framework (Figure 10)treats time poverty as a binding constraint on women's economic agency and focuses on two core outcomes: (i) reducing women's time spent on unpaid activities (domestic chores, unpaid care, and non-remunerative own-account or subsistence work) and (ii) ensuring that freed time is reallocated to remunerative opportunities in higher-productivity segments of agriculture, manufacturing, and services. Time-use data would thus become both a diagnostic tool and a performance metric to assess whether public spending is genuinely shifting women from unpaid or low-return work into better-quality, income-generating activities.

Figure 10: Framework for Outcome-based Gender Budgeting as a tool for Time-Use-Embedded Pathway to Gendered Structural Transformation



Source: Author's own

The following theory of change is recommended for operationalisation of the framework for enabling outcome-based gender budgeting. These recommendations are drawn from the analysis of the available datasets, as well as stakeholder engagements through ICRIER's Economic Policy for Women-led Development (EPWD) initiative.

1. **Allocate Ex-ante investment in <u>Inputs</u> -** Synchronise time-saving and employment-generating schemes and programs, both on the supply and demand sides. Design around women's schedules, mobility constraints, digital in-access and care responsibilities. Proportionate investments must be allocated to programs and schemes for-

    a. **time saving on domestic and care work including** household infrastructure (water, electricity, clean energy, time-saving gadgets) and community-based infrastructure for childcare/creche and elder-care, community kitchens, safer and cheaper mobility
    b. **agricultural modernisation, including** gender-targeted mechanisation (power weeders, small reapers, rental models and agri-service centres), irrigation upgrades, small pump access, multi-crop planters and crop diversification toward higher-value, less labour-intensive crops; aggregated marketing.
    c. **upskilling rural women in** locally relevant vocational skills like food processing; livestock management; repair and maintenance of agricultural equipment; tailoring, embroidery, handicrafts and handloom weaving, and bamboo-based

crafts to support their transition from low value added to high value segments and from agriculture to services. Additionally, imparting digital skills

d. **incentivising creation of local-level opportunities in the manufacturing and services sector** (home-based/near-home) by giving direct support for women in the form of microgrants, concessional loans, capital subsidies for mechanisation and micro-processing. Support agri-allied services (machine operation, post-harvest handling), provide payroll tax rebates, investment tax credits for employers that create women-friendly jobs or wage subsidy for firms hiring local rural women (in home-based micro-processing and digital marketplaces for goods, local textile hubs, digital/gig work from rural areas etc). Finally, incentives for firms that co-invest in local childcare/community kitchens (investment tax credit).

2. **Measure Ex-post <u>Outcomes</u> Incorporating Time-Use in Assessment -** Budget schemes/programs and tax instruments must be tied to measurable time-saving and income-generating outcomes (prioritise close-to-home, flexible, part-time and home-based work) – and not inputs alone. Simple time-use modules must be embedded into in program management information system (MIS) and outcome reporting. The framework entails the achievement of two gender-outcomes of government budgets:

   Outcome 1 — Free women's time spent on unpaid activities

   - *reduce daily minutes spent on domestic chores and unpaid care work*
   - *reduce daily minutes spent on non-remunerative, own-account/subsistence* activities

   Outcome 2 — Shift women's time to remunerative opportunities (supply and demand-side)

   - *skilling and upskilling the female workforce*
   - *generation of local remunerative opportunities*

Additionally, embedding time-use perspectives into gender budgeting will depend critically on strengthening India's statistical and monitoring architecture, particularly labour surveys and programme evaluations. Increasing the frequency of national time-use surveys and ensuring they capture household access to infrastructure and labour-saving appliances (such as LPG, electricity, piped water, refrigerators, washing machines, mixer-grinders, efficient stoves, and pressure cookers) would allow more precise tracking of how policy interventions affect unpaid workloads and labour outcomes. Integrating time-use dimensions into labour statistics, for instance by linking TUS and PLFS, would help map the relationship between unpaid domestic and care work and women's participation in paid employment, which is currently inadequately captured.

Evidence from specific interventions illustrates both the potential and limits of current approaches. For instance, evaluations of the Ujjwala LPG scheme show that while cleaner fuels can theoretically save up to 19–20 minutes of cooking time per day, actual time savings

have been much smaller (around 5 minutes), because perceived fuel costs and refill constraints dampen sustained use and prevent transformative reductions in home production time Afridi et al, 2023. Similarly, an assessment of Karnataka's Gruha Lakshmi cash transfer and related guarantee schemes found that while women gained financial control and some improvements in safety and savings, there was no significant reduction in time spent on unpaid work, highlighting that unconditional cash transfers alone do not automatically recognise, reduce, or redistribute unpaid domestic and care labour (Kotiswaran et al, 2025).

Finally, multi-stakeholder partnerships between the Central, State and Local government, private sector, development banks and civil society will be essential to scale time-saving resources and create local remunerative opportunities for rural women. Case studies of firms such as Shahi Exports,[16] which runs rural skilling centres that train women in sewing and facilitate access to formal textile jobs, shows how the private sector and investments from corporate social responsibility (CSR) funds can align with public schemes to expand near-home employment in labour-intensive manufacturing. Initiatives like the Tamil Nadu Rural Transformation Project, which uses community skills schools to train women in trades ranging from masonry to agro-processing and link them to value chains and contracts, demonstrate how state–donor–community collaboration can generate village-level enterprises and jobs[17]. Digital and trade-related initiatives, from rural BPOs and gig-work platforms[18] to AI-enabled language tools and export-oriented FPOs[19] further illustrate how ecosystem actors can leverage technology and market access to move women up value chains, provided foundational constraints in time, skills, and infrastructure are addressed.

Using the framework, time-use embedded statistical surveys, and partnerships between stakeholders, randomised control trials (RCTs) can be conducted as pilots to assess the effectiveness of simultaneously addressing unpaid work and providing paid opportunities. The pilot can:

- Prioritise districts with the highest unpaid care time and lowest female labour participation. Use tribal, scheduled caste/tribe and poorest blocks as first-order targets.
- Reduce weekly unpaid work hours by a target x% among targeted rural women within five years, and convert y% of freed hours into paid work, raising median earnings proportionately by state baseline.

[16] https://c4rb.org/insights/CaseStudy/PROGRESS-Final-Skill-Development-ShahiExports.pdf
[17] https://www.worldbank.org/en/news/feature/2025/02/07/skilling-and-supporting-women-entrepreneurs-in-rural-tamil-nadu
[18] Fernandez et al(2024)
[19] https://www.thehindu.com/data/more-women-employed-in-agriculture-but-half-of-them-are-unpaid/article70124571.ece

VI. Conclusion

This paper brings together evidence from labour force and time-use data to examine the nature of women's work in rural India, with a particular focus on agriculture. The findings underscore two persistent features of women's employment: its concentration in low-productivity agricultural activities and its overwhelmingly unpaid nature. Despite women's substantial contribution to the agriculture sector, most of their work remains non-remunerative, alongside a persistent gender wage gap in paid agricultural employment. These patterns reflect not only segmented labour markets but also deep-seated structural and social constraints shaping women's economic opportunities.

Time-use statistics add a critical dimension to this analysis by revealing the unequal distribution of unpaid domestic and care work. Rural women continue to spend significantly more time than men on household chores and caregiving, effectively constraining their ability to engage in paid and productive work. Importantly, this burden persists despite decades of government interventions through centrally sponsored schemes, sectoral programmes, and targeted budgetary allocations aimed at women's economic and social empowerment.

The paper therefore argues for a shift towards outcome-based gender budgeting, where policy performance is explicitly evaluated against measurable reductions in women's unpaid work burdens and improvements in their labour market outcomes, as captured through time-use data. Strengthening and institutionalising regular, high-quality time-use surveys is essential to enable such monitoring. Finally, enhancing female labour force participation and agency in agriculture requires a whole-of-ecosystem approach—coordinated action by the Centre, States, local governments, and civil society— to improve female labour force participation, improve agency of women in the agriculture sector and chart a course for their engagement in more productive jobs with India's structural transformation.

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