

# **Socio-Economic Dynamics of Women in Agriculture: A Longitudinal Analysis of Labor Participation in Bharat and Gujarat**

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## **Abstract:**

This research paper examines the evolving socio-economic role of women in the agricultural sectors of Bharat and Gujarat, utilizing a longitudinal analysis of Census and NSSO data from 1983 to 2011. While agriculture remains the primary employer for rural women, the study identifies a significant structural shift characterized as the "proletarianization" of the female workforce. Findings indicate a consistent decline in female cultivators—those with managerial or ownership-like control—and a concurrent rise in wage-dependent agricultural labor. In Gujarat, a distinct trend emerges where female secondary laborers outnumber primary laborers, positioning women as a flexible "reserve" workforce. The paper analyzes how localized governance and sectoral shifts, such as the rise of construction, impact rural female livelihoods. Ultimately, the study advocates for gender-sensitive policy interventions, including joint land titling and ergonomic technological support, to transition women from precarious manual labor toward empowered, recognized agricultural roles essential for national food security.

## **1. Introduction:**

Women play different roles in civilization. The concept of economic contribution refers to the active engagement in physical or mental activities that result in the production of commodities and services, which can be utilised for personal consumption, sold in the market, or exchanged with others (Mitra, 1980). Household tasks, including cooking, laundry, child-rearing, and cattle service, lack a tangible output or visible income, making them challenging to assess accurately.

The requirements for national income accounting do not obviously fall under the scope of this concept. The economic contribution of rural families, especially in contrast to rural females, has been deemed unproductive and unremunerated due to their engagement in certain activities. Consequently, their contributions in terms of production, employment, and wages have been disregarded and categorised as supplementary, informal, optional, and supporting.

Women have played an important part in Bharat's agricultural sector, serving as farmers, agricultural labourers, and entrepreneurs. Globally, the proportion of female workers involved in the agricultural sector decreased from 53.5 percent in 1980 to approximately 42 percent in 2010. In 2010, it was observed that approximately 52.7 percent of female workers in developing nations were employed in the agricultural sector. There exists significant variation in the nature and scope of women's involvement on a global scale.

Women's role in agriculture continues to be persistently ignored and not acknowledged throughout the nineteenth century and more, amid the introduction of scientific and

technological advancements to agricultural development. On the other hand, there was an increasing recognition among archaeological researchers, researchers in anthropology and farming historians that "women domesticated crop plants and thus initiated the art and science of farming (Swaminathan, 1985)."

The World Economic Profile of Women shows that women represent 50 percent of the population, make up 30 percent of the formal labor force, do 60 percent of the hours worked, earn 10 percent of the world's income and own less than 1 percent of the world's property (FAO - Thirtieth Session of the Conference, 1999).

According to Boserup, the nature of agricultural systems influences the overall participation rate of women in agriculture. There are widespread female agricultural systems in Africa where hoe cultivation is utilised. In agricultural systems, women execute a significant number of duties related to food production. In male agricultural systems in the Asian continent, whereas men plough and engage in additional difficult tasks, women accompany men via harvesting, weeding, and related activities. Statistics on female participation in these nations indicate that women serve a key part in a variety of agricultural activities throughout diverse economies of regions (Boserup, 1970). Multiple time allocation studies conducted by the Food and Agriculture Organisation (F.A.O.) have consistently demonstrated that women contribute between 40 to 80 percent of the global workforce's productive labour. The revised estimates provided by the Food and Agriculture Organisation (F.A.O.) include a breakdown of the data by region, which can be found in Annexure-1. The data presented discloses the proportion of women engaged in agricultural labour across several regions, including Sub-Saharan Africa (46%), North Africa/Middle East (31%), Asia (45%), and the Caribbean (40%) (FAO - Thirtieth Session of the Conference, 1999).

In the regions of South Asia and Bharat, it is observed that more than 60 percent of the female workforce is engaged in agricultural activities. According to the Census of Bharat in 2011, over 65 percent of the female workforce in the country is involved in agricultural activities. Out of the entire number of cultivators, which amounts to 118.7 million, around 30.3 percent are female. Similarly, out of the total number of agricultural labourers, which stands at 144.3 million, approximately 42.6 percent are female labourers. The proportion of female agricultural labourers in 2001 was 21%, which experienced a little increase to 23% in 2011.

There are altogether of 94 countries classified as less developed, and among these countries, there are as many as 28 where the labour force participation rate for women is 50 percent or above. The labour force participation rate for women in Bharat is 47 percent (Joekes, 1990).

The rate of women's engagement in the rural economy of Bharat varies based on local, economic, social, and cultural factors. Certain states and regions have witnessed the acquisition of specialist skills by females, resulting in their exclusive control over certain agricultural activities.

Agriculture holds significant importance in the rural livelihoods of Bharat. According to the 2011 Census of Bharat, around 70% of the country's population, which amounts to almost 833 million individuals, resides in rural regions. Women have a crucial and indispensable part in various agricultural activities, including the entire spectrum from planting to harvesting to post-harvest operations, as well as in related industries. The participation of women in the agricultural sector exhibits a multifaceted and varied nature. In contrast to their male counterparts, women engage in a diverse array of activities inside the agricultural sector as well as within the domestic sphere. The extent of women's involvement in agriculture has undergone transformations due to shifts in the agricultural landscape and the growth of non-farm sectors.

## **2. Scope of the study:**

The scope of this research is multidimensional, focusing on the intersection of gender, labor, and land rights. Specifically, the study covers:

- **Historical Evolution:** Examining the transition of agricultural challenges over time and the shifting demographics of the rural workforce.
- **Production and Income Analysis:** Assessing how female labor participation impacts the production cycles and income levels of rural agribusiness enterprises.
- **Macro and Micro Trends:** Analyzing national-level data (All Bharat) alongside regional specifics (Gujarat) to understand localized economic drivers.

## **3. Importance of the study:**

The study concerning the involvement of women in agriculture carries substantial significance owing to its capacity to tackle a multitude of crucial matters and make contributions to many facets of societal and agricultural progress. The significance of research in this domain can be underscored by several major factors.

Females comprise a significant proportion of the agricultural labour force on a global scale. Research studies can offer valuable perspectives on the potential impact of increasing women's involvement in agricultural activities on economic growth, poverty reduction, and livelihood improvement, particularly in rural regions.

Gaining insight into the role of women in enhancing agricultural productivity has the potential to enhance the efficacy and sustainability of farming methods. Addressing food demand in the context of a rapidly expanding global population is of utmost importance.

Research findings can shed light on the significance of women's empowerment in the agricultural sector.

Research data and findings have the potential to contribute valuable insights that can inform the creation of evidence-based policies and the development of treatments. The implementation of gender-sensitive policies has the potential to enhance the fairness and efficacy of agricultural programmes and strategies.

#### 4. Objectives of the study:

The primary objectives of this research paper are:

1. To quantify the proportion of women engaged in agricultural employment across various states and administrative tiers.
2. To analyze the impact of women on agricultural production and the structural shift from cultivation to labor.
3. To evaluate the socio-economic responsibilities and status of secondary/subsidiary female workers in the rural economy.

#### 5. Research Methodology:

This study adopts an **evaluation-oriented research design** based primarily on **secondary data**. Data has been sourced from:

- The Census of India (2001 and 2011).
- National Sample Survey Organization (NSSO) reports (Rounds 50, 55, 61, and 66).
- Directorate General of Employment (DGE), Ministry of Labour & Employment.

The data is processed using **statistical trend analysis**, comparing longitudinal shifts over three decades. Results are presented through tabular structures and graphical interpretations to illustrate the frequency and percentage changes in labor distribution.

#### 6. Contribution of women to agricultural development:

The following section presents a detailed analysis of the workforce distribution, highlighting the gendered shifts in public employment, rural sectoral shares, and the evolving status of female laborers at both the national and regional levels.

Level	Men	Women	Total	% of Women
Central Government	2463	245	2463	9.96
State Government	7218	1654	7218	22.91
Central Government (Quasi)	3454	409	3454	11.84
State Government (Quasi)	2360	269	2360	11.41
Local Bodies	2053	611	2053	29.77

**Source:** (Directorate General of Employment (DGE) Ministry of Labour & Employment/Government of India, 2023)

The 2011 employment data from the Directorate General of Employment reveals a public sector workforce heavily dominated by state-level administration and characterized by a significant gender imbalance. The State Government serves as the primary employer, maintaining a workforce of approximately 7.2 million, which is nearly triple the size of the Central Government's 2.46 million. However, a critical examination of gender distribution shows that women remained a distinct minority across all administrative tiers, with their participation following a "localization" trend. The Central Government recorded the lowest female representation at only 9.96%, whereas Local Bodies achieved the highest at 29.77%. This suggests that decentralized governance and local recruitment frameworks were more effective at integrating women into the formal workforce than federal structures. Between these extremes, State Government departments and quasi-governmental organizations at both levels maintained female participation rates ranging from 11.41% to 22.91%. Ultimately, the data indicates that while the public sector was a massive engine for employment in 2011, the success of gender-inclusion policies was far more pronounced at the grassroots and state levels than within central administrative bodies.

<b>Table No. 2 : Sectoral Shift in Rural Female Employment (1993–2010)</b>				
<b>Sector Share (%)</b>	<b>1993-94</b>	<b>1999-00</b>	<b>2004-05</b>	<b>2009-10</b>
Share of agriculture in rural employment	86.2	85.4	83.3	79.4
Share of manufacturing in rural employment	7.0	7.6	8.4	7.5
Share of construction in rural employment	0.9	1.1	1.5	5.2
Share of trade, hotel & restaurant in rural employment	2.1	2.0	2.5	0.2
Share of transport, etc. in rural employment	0.1	0.1	0.2	0.2
Share of other Services in rural employment	3.4	3.7	3.9	4.6
Share of mining & quarrying in rural employment	0.4	0.3	0.3	0.3
Share of electricity, etc. in rural employment	0.1	0.0	0.0	0.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<p><b>Source:</b> (India - Employment and Unemployment Survey: NSS 50th Round, Schedule 10, July 1993 - June 1994, 2023) (Report-No.458-Part1-Final-1.Pdf, n.d.) (515part1_employment.Pdf, n.d.) (NSS_Report_No_537.Pdf, n.d.)</p> <p><b>Note:</b> All data pertain to usually working persons in the Principal Status (PS) and Subsidiary Status (SS) taken together</p>				

The provided data illustrates a progressive shift in the sectoral distribution of rural female employment in India between 1993-94 and 2009-10, highlighting a slow but distinct transition away from traditional agrarian roles. Agriculture remained the dominant source of livelihood throughout the period, yet its share experienced a consistent decline from 86.2% in 1993-94 to 79.4% by 2009-10. This contraction suggests a gradual diversification of the rural female workforce into non-farm activities. Notably, the construction sector emerged as a significant alternative, showing a substantial leap from a mere 0.9% to 5.2%, with the most rapid growth occurring between 2004 and 2010. Other services also saw a steady increase, rising from 3.4% to 4.6%, indicating an expanding footprint in social or personal service sectors. Conversely, the share of manufacturing remained relatively stagnant, peaking at 8.4% in 2004-05 before receding slightly to 7.5%. Sectors such as trade, transport, and mining continued to represent negligible portions of rural female employment, with trade even witnessing a sharp decline in the final period. Overall, the figures reflect a rural economy in transition, where the diminishing reliance on agriculture is being primarily offset by the growth of the construction and service sectors.

**Table No. 3 : Per 1000 distribution of usually employed persons in agriculture during 1983 to 2009-10**

Year	Rural		Urban	
	Men	Women	Men	Women
1977-78	628	881	106	319
1983	665	875	103	310
1987-88	714	847	91	294
1993-94	741	862	90	247
1999-00	745	854	66	177
2004-05	775	833	61	181
2009-10	806	794	60	139

**Source:** (NSS\_Report\_No\_537.Pdf, 2009-10.)

The data presented indicates that in rural Bharat during the year of 2009-10, a significant proportion of the male population (about 63%) and an even larger proportion of the female population (approximately 79%) were working in the agricultural sector. The percentage of males involved in agricultural activities experienced a progressive decline over the years. Specifically, it decreased from 81% in 1977-78 to 71% in 1999-2000, further dropping to 67% in 2004-05. By 2009-10, this proportion had decreased even further to 63%. In contrast, the percentage of female workers involved in agricultural operations has seen a decline over time. Specifically, the proportion declined from 88 percent in 1977-78 to 85 percent in 1999-2000, further down to 83 percent in 2004-05, and currently stands at 79 percent.

In the metropolitan areas of Bharat, there has been a notable decline of almost 18 percentage points in the proportion of employed females engaged in the agricultural industry from the year 1977-78.

<b>Table No. 4 : The proportion of women in agriculture (In 2001 and 2011)</b>				
<b>2001 Census</b>				
<b>Details</b>	<b>Men</b>	<b>Women</b>	<b>Total</b>	<b>% of Women</b>
Cultivators	85416498	41896353	127312851	32.91
Agriculture labourers	57329100	49446230	106775330	46.31
Total	142745598	91342583	234088181	39.02
<b>2011 Census</b>				
<b>Details</b>	<b>Men</b>	<b>Women</b>	<b>Total</b>	<b>% of Women</b>
Cultivators	82706724	35985916	118692640	30.32
Agriculture labourers	82740351	61589482	144329833	42.67
Total	165447075	97575398	263022473	37.10
<b>Source:</b> (Census Tables / Government of India, 2001) (Census Tables / Government of India, 2011)				

In terms of the proportion of cultivators in relation to the overall workforce, there has been a notable decrease from 31.7% in 2001 to 24.6% in 2011. Within the male population, there was a fall over the course of a decade, namely from 31.1 in 2001 to 24.9 in 2011. Conversely, the decline in the proportion of female cultivators as a percentage of the entire workforce was more pronounced. In this case, the percentage decreased from 32.9 in 2001 to 24% in 2011.

In relation to the category of Agricultural Labourers, there has been a notable rise in the proportion of agricultural labourers among the overall workforce during the previous census decade. Specifically, the percentage of agricultural labourers among the total workers increased from 26.5% in 2001 to 30% in 2011. The data reveals a notable upward trajectory in the proportion of male agricultural labourers, rising from 20.8% in 2001 to 24.9% in 2011. Similarly, the percentage of female agricultural employees also experienced an increase, but to a lesser extent, from 38.9% in 2001 to 41.1% in 2011. In terms of numerical values, there are around 6.16 crores of women, while there are 8.27 crores of male agricultural labour.

<b>Table No. 5 : Percentage of Cultivators and Agricultural Labour to Total Workers of Women. (In 2001 and 2011)</b>					
<b>Details</b>	<b>% of cultivators to total workers</b>		<b>% of agricultural labour to total workers</b>		<b>% workers in agricultural labour to total workers</b>
	<b>2001</b>	<b>2011</b>	<b>2001</b>	<b>2011</b>	
<b>State</b>					<b>2011</b>
Andhra Pradesh	20.1	14.0	55.8	58.0	72.0
Arunachal Pradesh	75.5	63.1	4.5	7.5	70.6
Assam	41.1	28.1	16.2	20.9	49.0
Bihar	23.2	15.3	62.6	60.8	76.1

Details	% of cultivators to total workers		% of agricultural labour to total workers		% workers in agricultural labour to total workers
	2001	2011	2001	2011	2011
Chhattisgarh	44.5	31.3	44.1	54.4	85.7
Gujarat	28.0	17.8	39.1	47.1	64.9
Haryana	43.7	32.8	21.1	23.1	55.9
Himachal Pradesh	85.8	76.2	2.9	4.7	80.9
Jammu & Kashmir	54.7	42.5	5.2	11.8	54.3
Jharkhand	43.0	32.6	39.6	44.8	77.4
Karnataka	24.7	19.0	43.4	40.3	59.3
Kerala	4.8	3.9	21.5	14.7	18.6
Madhya Pradesh	43.3	28.5	40.4	51.5	80.0
Maharashtra	35.8	29.6	41.1	39.9	69.5
Odisha	20.1	12.9	53.9	57.8	70.7
Punjab	13.9	9.9	17.8	19.1	29.0
Rajasthan	67.0	52.6	16.2	24.2	76.8
Tamil Nadu	19.0	13.2	44.8	41.6	54.8
Uttar Pradesh	36.1	22.2	39.6	38.4	60.6
Uttarakhand	77.8	64.0	6.1	8.8	72.8
West Bengal	14.1	7.7	32.2	34.0	41.7
All Bharat	32.9	24.8	38.9	41.1	65.1

**Source:** (Census Tables / Government of India, 2001) (Census Tables / Government of India, 2011)

The comparative data from the 2001 and 2011 Census of India highlights a significant structural shift in the participation of women within the agricultural sector, characterized by a widespread decline in female cultivators and a simultaneous rise in female agricultural laborers. Nationally, the percentage of women acting as cultivators dropped from 32.9% to 24.8%, while those working as agricultural laborers increased from 38.9% to 41.1%. This trend—often termed the "proletarianization" of female agricultural workers—suggests that women are increasingly losing managerial or ownership-like control over land and are instead being pushed into wage-dependent manual labor. This phenomenon is most striking in states like Chhattisgarh and Madhya Pradesh, where the share of female agricultural laborers jumped by approximately 10 percentage points in just a decade.

Regional variations provide further insight into the diverse agrarian landscapes of India. Hilly and northeastern states, such as Himachal Pradesh (76.2%), Uttarakhand (64.0%), and Arunachal Pradesh (63.1%), maintained high levels of female cultivators in 2011, reflecting the traditional role of women in managing small-scale family subsistence farms in these terrains. Conversely, states like Bihar and Andhra Pradesh exhibit a heavy reliance on female

wage labor, with agricultural labor shares reaching 60.8% and 58.0% respectively. Kerala stands out as a unique outlier with extremely low agricultural participation in both categories (3.9% cultivators and 14.7% laborers), indicating a more advanced transition toward service-oriented and non-agrarian economies.

The aggregate "All Bharat" figure for 2011 shows that 65.1% of the total female workforce is still tied to agriculture, underscoring the sector's role as the primary employer for women despite the diminishing returns of cultivation. However, the internal migration from cultivation to labor indicates a growing economic vulnerability for rural women. As the share of cultivators declines across every single state listed, the data suggests that factors such as land fragmentation, rising input costs, or the mechanization of tasks typically handled by owners have forced women into the more precarious and lower-paid role of seasonal labor. This analysis concludes that while women remain the backbone of Indian agriculture, their status within the sector underwent a notable devaluation during the first decade of the 21st century.

<b>Table No. 6 : The gender distribution of rural and urban agricultural labour in Bharat (In Cr.)</b>						
<b>2001</b>						
<b>Details</b>	<b>Primary Agriculture Labour</b>			<b>Secondary Agriculture Labour</b>		
	<b>Total</b>	<b>Men</b>	<b>Women</b>	<b>Total</b>	<b>Men</b>	<b>Women</b>
Total	6.34 (100)	4.11 (100)	2.23 (100)	4.32 (100)	1.62 (100)	2.70 (100)
Rural	6.05 (95.48)	3.91 (95.13)	2.14 (95.96)	4.19 (96.99)	1.55 (95.68)	2.63 (97.41)
Urban	0.29 (4.57)	0.20 (4.87)	0.09 (4.04)	0.13 (3.01)	0.06 (3.70)	0.07 (2.59)
<b>2011</b>						
<b>Details</b>	<b>Primary Agriculture Labour</b>			<b>Secondary Agriculture Labour</b>		
	<b>Total</b>	<b>Men</b>	<b>Women</b>	<b>Total</b>	<b>Men</b>	<b>Women</b>
Total	8.61 (100)	5.52 (100)	3.09 (100)	5.81 (100)	2.74 (100)	3.07 (100)
Rural	8.09 (93.96)	5.16 (93.48)	2.93 (94.82)	5.60 (96.39)	2.62 (95.62)	2.98 (97.07)
Urban	0.52 (6.04)	0.36 (6.52)	0.01 (5.18)	0.21 (3.61)	0.12 (4.38)	0.09 (2.93)
<b>Source:</b> (Census Tables / Government of India, 2001) (Census Tables / Government of India, 2011)						
<b>Note:</b> Figures in brackets indicate percentage.						

The longitudinal data from the 2001 and 2011 Census provides a comprehensive overview of the shifting gender and geographical dynamics of agricultural labor in India, measured in crores. A primary observation is the substantial growth in the total volume of primary agricultural labor, which rose from 6.34 crore in 2001 to 8.61 crore in 2011. While both genders saw absolute increases, the expansion was particularly pronounced among women in the rural sector. In 2001, rural female primary agricultural labor stood at 2.14 crore, rising to 2.93 crore by 2011. Even more significant is the trend in secondary agricultural labor—those

for whom agriculture is a supplementary source of income—where the total number of women (3.07 crore) actually surpassed men (2.74 crore) by 2011. This suggests a "feminization" of precarious agricultural work, where women increasingly shoulder the burden of subsidiary labor roles.

Geographically, the data confirms that agricultural labor remains an overwhelmingly rural phenomenon, with over 93% of both primary and secondary workers situated in rural areas across both census years. However, a subtle but noteworthy shift is visible in the urban fringes. Urban primary agricultural labor increased from 0.29 crore in 2001 to 0.52 crore in 2011, indicating that even as India urbanizes, a significant portion of the urban-resident workforce remains tied to agricultural manual labor, likely in peri-urban zones. The percentage distribution within the brackets further highlights that while the rural share of primary labor dipped slightly from 95.48% to 93.96%, the absolute pressure on rural land for wage labor increased for both men and women.

The distinction between primary and secondary status reveals critical insights into rural economic stability. By 2011, the number of women engaged in secondary agricultural labor (3.07 crore) was nearly equal to those in primary labor (3.09 crore), whereas for men, primary labor remains the dominant mode (5.52 crore primary vs. 2.74 crore secondary). This disparity implies that while men are more likely to be engaged in agriculture as their main occupation, women are frequently utilized as a reserve workforce, moving in and out of agricultural labor as a subsidiary activity. Ultimately, the 2001–2011 period reflects an intensifying reliance on wage-based agricultural work, with women emerging as a pivotal, albeit secondary, pillar of the rural agrarian economy.

<b>Table No. 7 : The gender distribution of rural and urban agricultural labour in Gujarat</b>						
<b>2001</b>						
<b>Details</b>	<b>Primary Agriculture Labour</b>			<b>Secondary Agriculture Labour</b>		
	<b>Total</b>	<b>Men</b>	<b>Women</b>	<b>Total</b>	<b>Men</b>	<b>Women</b>
Total	3048713 (100)	2004136 (100)	1044577 (100)	2112945 (100)	505515 (100)	1607430 (100)
Rural	2921313 (95.82)	1913788 (95.49)	1007525 (96.45)	2061896 (97.58)	488593 (96.65)	1573303 (97.88)
Urban	127400 (4.18)	90348 (4.51)	37052 (3.55)	51049 (2.42)	16922 (3.35)	34127 (2.12)
<b>2011</b>						
<b>Details</b>	<b>Primary Agriculture Labour</b>			<b>Secondary Agriculture Labour</b>		
	<b>Total</b>	<b>Men</b>	<b>Women</b>	<b>Total</b>	<b>Men</b>	<b>Women</b>
Total	4491751 (100)	3008969 (100)	1482790 (100)	2347664 (100)	640630 (100)	1707034 (100)
Rural	4207186	2799674	1407512	2274109	611948	1662161

	(93.66)	(93.04)	(94.92)	(96.87)	(95.52)	(97.37)
Urban	284565 (6.34)	209287 (6.96)	75278 (5.08)	73555 (3.13)	28682 (4.48)	44873 (2.63)
<b>Source:</b> ( <i>Census Tables / Government of India, 2001</i> ) ( <i>Census Tables / Government of India, 2011</i> )						
<b>Note:</b> Figures in brackets indicate percentage.						

The longitudinal analysis of agricultural labor in Gujarat between 2001 and 2011 reveals a significant expansion in the workforce and a distinct gendered division between primary and secondary employment role. Total primary agricultural labor in the state grew substantially from approximately 3.05 million to 4.49 million over the decade. While male participation in primary labor remained dominant—rising to over 3 million by 2011—female primary labor also saw a marked increase, growing from 1.04 million to 1.48 million. This upward trend indicates that despite Gujarat's rapid industrialization during this period, the agricultural sector remained a critical absorber of labor, particularly for those entering the workforce as full-time wage earners.

A striking feature of Gujarat's rural economy is the overwhelming presence of women in secondary agricultural labor. In both 2001 and 2011, the number of women engaged in secondary agricultural work far exceeded that of men. By 2011, female secondary laborers numbered 1.71 million compared to only 0.64 million for men. This disparity highlights a structural characteristic where women serve as the primary "subsidiary" workforce, likely balancing agricultural wage labor with domestic responsibilities or seasonal household cultivation. The fact that female secondary laborers (1.71 million) outnumber female primary laborers (1.48 million) suggests that for most women in rural Gujarat, agricultural labor is a supplementary rather than a principal economic activity.

Geographically, the workforce remains concentrated in rural areas, though there is a perceptible shift toward the urban fringe. Rural areas accounted for roughly 93.66% of primary labor in 2011, a slight decrease from 95.82% in 2001. Conversely, urban primary agricultural labor more than doubled in absolute terms, rising from 127,400 to 284,565. This growth in the urban category, particularly among men, reflects the expansion of peri-urban agriculture and the survival of agricultural pockets within rapidly expanding municipal boundaries.

In conclusion, the data illustrates that the agrarian economy of Gujarat is increasingly reliant on a bifurcated labor model: men predominantly occupy primary, full-time labor roles, while women provide the bulk of the secondary, flexible labor force. While the rural sector continues to hold the vast majority of these workers, the significant absolute growth in both

primary and secondary categories underscores the persistent dependence of a large segment of Gujarat's population on agricultural wages, even amidst broader economic diversification.

## 7. Key Findings

- **The "Feminization of Labor" vs. "Masculization of Management":** While women's absolute numbers in the agricultural workforce are significant, there is a clear trend of **proletarianization**. Women are increasingly moving away from being "Cultivators" (decision-makers/owners) and are being concentrated into "Agricultural Laborers" (wage seekers).
- **The Subsidiary Workforce Gap:** In Gujarat specifically, female secondary laborers (1.71 million) outnumber primary laborers (1.48 million). This indicates that women are treated as a **buffer workforce**, utilized for seasonal peaks but lacking year-round employment security.
- **Sectoral Stagnation in Manufacturing:** Despite the decline in agricultural dependence (from 86.2% to 79.4%), the rural manufacturing sector has not grown enough to absorb the displaced female workforce. Instead, women are shifting toward the **Construction** sector, which is often more physically demanding and less stable.
- **Geographic Disparities:** Hilly regions (Himachal, Uttarakhand) still empower women as primary cultivators due to subsistence farming needs, whereas industrializing states like Gujarat and Andhra Pradesh show a sharper divide where women become landless laborers.
- **Public Sector Inequity:** Formal public sector employment remains heavily male-dominated at the central level (approx. 90%), with women only finding significant representation in grassroots "Local Bodies."

## 8. Suggestions

- **Formal Recognition of "Female Farmer" Status:** Currently, many government benefits are tied to land ownership. Since most land titles are in men's names, female cultivators are often classified as "housewives" or "laborers," depriving them of access to institutional credit, subsidies, and crop insurance.
- **Technological Gender-Sensitivity:** Most agricultural machinery is designed for male physical frames. There is an urgent need for the "ergonomic redesign" of tools (e.g., smaller tractors, specialized weeders, and harvesters) to reduce the physical drudgery for female workers.
- **Expansion of Agro-Processing Units:** To prevent women from shifting into the hazardous construction sector, rural areas should focus on value-addition industries

(e.g., milk cooperatives, food processing, and packaging) that leverage existing agricultural skills.

## 9. Recommendations

### For Policy Makers:

1. **Joint Land Titling:** Implement mandatory joint land titles for husband and wife to ensure women have the collateral needed to transition from laborers back to cultivators.
2. **Gender-Specific Minimum Wage Enforcement:** Address the wage gap in the agricultural sector where women are often paid significantly less than men for the same duration of labor.
3. **Strengthening Cooperative Models:** Emulate the success of Gujarat's milk cooperatives (like Amul) in other agricultural sub-sectors to give women collective bargaining power.

### For Institutional Support:

1. **Tailored Extension Services:** Agricultural training (Krishi Vigyan Kendras) should schedule sessions during times that accommodate women's domestic responsibilities.
2. **Credit Accessibility:** Introduce "Micro-Credit" schemes specifically for female-led farming collectives (Self-Help Groups) to invest in high-yield seeds and sustainable irrigation.

### For Future Research:

1. **Impact of Climate Change:** Future studies should investigate how erratic weather patterns specifically affect female laborers, who often lack the mobility to seek alternative urban employment compared to men.
2. **Digital Literacy:** Assess the impact of mobile-based agricultural marketplaces on female farmers' ability to bypass middlemen.

## 10. Conclusion

The longitudinal analysis of agricultural participation in Bharat and Gujarat underscores a profound structural transformation: the "feminization of agriculture" is increasingly synonymous with the "proletarianization of female labor." While women remain the cornerstone of the rural economy, their role has shifted from autonomous cultivators to precarious, wage-dependent laborers. National data reveals a consistent decline in female land management, while regional trends in Gujarat highlight an overwhelming reliance on women as a "subsidiary" or reserve workforce.

This transition signals growing economic vulnerability, as women balance intensified domestic responsibilities with seasonal, low-paid manual labor. To ensure sustainable

agricultural development, it is imperative to move beyond viewing women as mere workers. Policy interventions must prioritize joint land titling, gender-sensitive mechanization, and the formal institutional recognition of female farmers. Only by bridging the gap between labor contribution and ownership rights can the agrarian economy achieve true equity and resilience.

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