



Feminization of Indian Agriculture: A Review

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10.18805/ag.R-2044

ABSTRACT

After liberalization the Indian agriculture went through a phenomenon called feminization of agriculture which means increase the share of women in agricultural work force. However this feminization was not consistent with empowerment as still these workforce are underpaid as compare to its male counterpart. The differences in participation between men and women workers were lowest to the states with higher share of workers in agriculture. In order to understand the factors determining this phenomenon, constraints causing the impediment the participation and policies to overcome it, a number of literature had been compiled in this paper. Feminization in agriculture occurred due to migration of male work force from agriculture. However, this phenomenon does not consistent with empowerment as women work force are always underpaid. Proportion of land utilized for food grain, per capita income, land holdings were some of the factors which were determining the women's participation. In order to improve the situation for women government are now focusing on gender budgeting. Besides women's participation in research work had been encouraging to develop technology which will be suitable for the use of women.

Key words: Feminization, Indian agriculture, Gender bias.

Indian agriculture is suffering from a number of crisis such as declination of plot size, inflation of food price, relative increase of cost of production to farm incomes, farmer suicides *etc.* (Mishra 2006; Dev 2012; Eapen and Nair 2015; Pritchard *et al.*, 2014). These agrarian crisis had forced rural men to seek livelihood opportunity outside agriculture and migrate to urban areas in search for works, leaving women for agricultural works (Tumbe 2014; Agrawal and Chandrasekhar 2015). Increasing participation of rural women in agriculture make us keen to search for an answer to some questions like how they are managing both agricultural and household activities side by side and how the power and autonomy in household and community of women is affected by participation (Shah and Pattnaik 2015). Feminization is known for changing property relation including increase in ownership among women. Besides it is evident that feminization provide women the ability to control its own labour, impart authority to make decisions and put a light on women's activities, needs and aspirations for policy measures (Agarwal 2012; Deere 2005; Lastarria 2006).

However, we cannot say that there is a positive correlation between feminization and empowerment, especially in case of paid employment. In this case growing number of women employee comes with insubstantial and menial paid employment, which is not a all empowerment (Kelkar and Wang 2007). Besides there are diversified causes and consequences of feminization. Increase in number of female participants may be due to decrease in number of males' participation (Deere 2005) or it may reflect activity which is important to women and change forced to them (Lahiri-Dutt 2014). It should be considered that women move from unremunerated occupationssuch as unpaid family labour, although in public sphere their visibility is prominent, but in private sphere it is still less reflective.

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How to cite this article: Das, A., Mohapatra, S., Patnaik, N.M. (2021). Feminization of Indian Agriculture: A Review. *Agricultural Reviews*. 42(4): 434-439. DOI: 10.18805/ag.R-2044.

Submitted: 24-06-2020 **Accepted:** 28-01-2021 **Online:** 06-03-2021

Due this complexity literature related to this issue was collected from various sources to understand the present scenario of female work force, determinants of their participation in work force, their role in livestock which is a female dominated sector, constraints and policy measures for feminization in India.

Past studies related to feminization

Some of the literature in the past mainly focused to the increase in the share of farm-related work performed by women such as increase of importance of smallholder production as well as non-traditional agro-export production (Lahiri-Dutt, 2014). While some were focused on farmland ownership and other resources (Agarwal 2012), decision making power (Lastarria 2006) and recognition of various contributions by women in the public sphere, previously dominated by male counterpart (Deere 2005).

Numerous studies have been done to establish a relationship between agriculture and suicide and their impact

on family but the available studies do not provide a definitive answer about the relationship of location of residence and suicide, but there do appear to be higher suicide rates in rural versus urban areas both in India and in other countries with large agricultural populations (GOI 2007). If true, the likely explanations for the higher suicide rates in rural areas would include rapid migration, economic hardship, lack of social support, isolation, relatively easy access to lethal means (e.g., pesticides) and the lack of high-quality resuscitation services (Wage Indicator Report). The lack of performance however in terms of agricultural success can be said to be the most dominating of all.

Few studies supported the facts that feminization is the result of distress migration and loss making crop production (Kanchi, 2010; Kelkar and Wang, 2007; Srivastava, 2011), while Rawal and Saha (2015) supported economic liberalization for increase in women participation in work force. Some region specific studies like the study of Hardikar (2015) found that migration of men in small and marginal groups in Madhya Pradesh pressurized women and obligated some women cultivators to make their farms abandoned. A study on Uttarakhand by Bhandari and Reddy (2015) compared the condition of out-migrant and non-migrant household and observed that there was little or no capital formation on farms of migrant households. Compare to non-migrant one the work burden (marketing, utility bills payment, meeting family requirements) of women from migrant household was higher. Besides a huge number of children from migrant household was dropping-out, which showed another negative impact of feminization. Women often end up being invisible in spaces of policy-making and not just in terms of participation.

Present scenario of feminization in agriculture

Sharp increase in non-agricultural activities from 1991 to 2001 was due to the impact of economic liberalization (Table 1). Male participation in non-agricultural activities increased from 39.1 per cent in 1991 to 50.1 per cent in 2011, while female participation doubled from 17.6 per cent to 34 per cent during the same period of time. It means that while half of the male work force is engaged with non-farm activities still 65 per cent of woman dependent on agriculture. As males became more engaged in non-agricultural activities after liberalization

There is a noticeable variation in dependency of agricultural employment across different states (Table 2).

Women's participation in agriculture similarly varied across regions and states. Except Himachal Pradesh and Nagaland, men participate more in agriculture than women. It was apparent that, in those states where workers engaged in agriculture were above national average, the differences were lowest in case of participation between men and women workers. Uttar Pradesh and Bihar were exception in this trend, here although share of agricultural workers was high, the difference was much wider than other states.

Traditional obstacles like mobility, education and the inability to interact with the market still exist. However, a few women farmer groups are breaking the mould. Growing millets is a symbol of moving away from the clutches of patriarchy in farming. "Being the least input demanding crops, millets run against the 'high input = high output' market logic. Therefore, it leaves an anti-corporate economics. These values of millets bring them closest to the ecofeminist philosophy," said a statement from All India Millet Sisters Network. The network was launched in November 2016 and received the 'Nari Shakti Puraskar, 2017' for outstanding contribution to women's empowerment. The award was presented by the President of India at Rashtrapati Bhawan, New Delhi on the International Women's Day on 8 March (Saxena 2019). The Women's Collective in Tamil Nadu, also part of the All India Millet Sisters Network, tries promoting millets amongst women farmers, as they can keep some of their produce for their homes, giving food security to the entire family. "The challenge, however, is that most women are landless and do not have a say in what can be grown in the lands they are working on," said Sheelu Francis from the collective. "We organise them into collectives and encourage leasing lands in groups of five to ten for them to grow millets. Millets are also hardy and resistant to the vagaries of climate change," she added. Her collective works with nearly 12,000 women farmers in dryland regions of Tamil Nadu. The All India Millet Sisters Network is an initiative of the Deccan Development Society and has more than 20 NGOs working across ten states. CN Suresh, one of the coordinating members of its parent network, Millet Network of India, believes the knowledge of women in farming, especially in dryland regions is unparalleled (Whatmore 1991). "In some villages in Telangana, crops are categorised as 'male' crops and 'female' crops. Male crops are commercial crops like cotton and sugar while female crops are millets," he said. "While the men grow only commercial crops, they sell and the money does not leave their hands.

Table 1: Work participation in agricultural and non-agricultural sectors by gender.

Census year	Agriculture			Non-agriculture		
	Male (%)	Female (%)	Total agriculture (%)	Male (%)	Female (%)	Total non-agriculture (%)
1981	66.3	82.6	70.3	33.7	17.8	29.7
1991	60.9	82.4	67.2	39.1	17.6	32.8
2001	51.9	71.8	58.4	48.1	28.2	41.6
2011	49.8	65.1	54.5	50.1	34.9	45.5

Source: Census, various issues.

Whereas women growing millets keep some for their house and then sell the rest. By growing millets, women are retaining decision-making powers," he said. Women, in most cases, have a bigger role in agriculture than men - at least in small and marginal farmlands. "Some 85 per cent of all farmlands in the country are small and marginal. And in these lands, it is the woman who has a larger role in farming. In most cases, men only take care of plowing, cutting and selling," said a member of Mahila Kisan Adhikaar Manch (Makaam) or Forum for Women Farmers' Rights Sejal Dand. "Recognising the role of women is the best way to revive agriculture and ecology, especially in the era of direct benefit transfers. It gives her social security," she added. The forum has members across 24 states working towards securing due recognition and rights of women farmers in India.

Role of women in fodder and livestock management

Illiterate rural dairy women farmers were the main architect behind pushing India to first place in milk production and

also for ever increasing per capita milk availability (Patel, 1998). Participation of women in fodder and livestock management was studied in few villages of Karnataka (Table 3). It was observed that majority of women were involved in almost all the livestock activities *viz.* animal feeding (78%), collection of fodder (84%), cattle shed maintenance (80%), making of cow dung for fuel (88%) milking (70%), marketing of milk and milk products (76%).

Determinants of women's participation in agriculture and non-agriculture activities

Poverty, income per capita, land holding and share of land utilized for food grain were some of the factors which were determining the women's participation (Table 4). The study found that there was an inverse relationship between size of land holdings and involvement of women in agriculture and a positive relationship between land holding size and women participation in non-farm activities. There was a non-linear relationship between poverty ratio and women's

Table 2: Agricultural workers as share of total workers, 2011.

States	Agricultural workers as share of all workers (%)	Men as share of agricultural workers (%)	Women as share of agricultural workers (%)
Chhattisgarh	74.7	52.4	47.6
Bihar	73.6	71.7	28.3
Madhya Pradesh	69.8	58.5	41.5
Jharkhand	63.0	56.2	43.8
Himachal Pradesh	62.9	45.1	54.9
Rajasthan	62.1	52.0	48.0
Odisha	61.8	63.2	36.8
Nagaland	61.7	48.5	51.5
Andhra Pradesh	59.5	53.2	46.8
Uttar Pradesh	59.3	75.2	24.8
Meghalaya	58.5	55.4	44.6
Arunachal Pradesh	57.7	50.5	49.5
Mizoram	55.8	56.0	44.0
Maharashtra	52.7	55.1	44.9
Uttarakhand	51.2	51.5	48.5
Gujarat	49.6	64.2	35.8
Assam	49.3	71.6	28.4
Karnataka	49.3	58.5	41.5
Manipur	49.1	55.4	44.6
Sikkim	46.5	53.1	46.9
Haryana	45.0	70.6	29.4
Tripura	44.2	68.2	31.8
West Bengal	44.0	78.1	21.9
Tamil Nadu	42.1	54.7	45.3
Jammu and Kashmir	41.5	65.8	34.2
Punjab	35.6	85.0	15.0
Dadra and Nagar Haveli	29.2	51.7	48.3
Kerala	17.2	70.5	29.5
Andaman and Nicobar	14.0	46.9	23.1
Goa	10.1	57.9	42.1
India	54.6	62.9	37.1

Source: Pattnaik *et al.* (2017).

Table 3: Nature of participation of farm women in fodder and livestock activities.

Activities	Women's participation (%)		
	Doing	Supervision	No participation
Milking	70	18	12
Marketing of milk and milk products	76	08	16
Feeding animals	78	18	04
Maintenance of cattle shed	80	14	06
Fodder collection	84	12	14
Cleaning of cattle	56	24	20
Cow dung making for fuel	88	06	06
Health care	64	36	20

Source: Nataraju *et al.* (2009).**Table 4:** Regression model: factors determining women's participation in agriculture and non-agriculture.

Variables	Women in agriculture	Women in non-agriculture
Share of women land holding	0.04 (0.107)	0.053 (0.044)
Poverty level	0.241*** (0.047)	0.054*** (0.019)
Poverty (square)	-0.003*** (0.001)	-0.0001*** (0.000)
Average size of land	-2.869*** (1.019)	0.714* (0.421)
Per capita SDP	-2.592 (1.709)	1.664** (0.706)
Growth rate of agricultural SDP	-0.005 (0.011)	-0.003 (0.004)
Growth rate of non-agricultural SDP	0.023 (0.024)	0.002 (0.010)
Share of area under food-grain	0.017 (0.026)	-0.026** (0.011)
Constant	65.712*** (17.857)	5.355 (7.375)
R ²	0.214	0.425
Observation	384	384
Year effect	Yes	Yes
Model	Fixed effect	Fixed effect

Note: Standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.1.

Source: Pattnaik *et al.* (2017).

participation, which was depicted through square terms. It showed women work participation declines at high level of poverty. There was no significant relationship between women's participation in agriculture and per capita income but there was a positive association between incomes per capita and women workers engaged in non-agricultural activities. Findings also suggest as more land came under foodgrain, lower the likelihood women would participate in non-farm activities. Finally there was no significant relationships between women's share of landholdings and their participation in agricultural and non-agricultural activities. This suggested that women's ownership of land

do not necessarily influence their overall levels of participation in agriculture. Poverty levels and the overall size of land holdings appear to be the major determining factors, with women withdrawing from agriculture in favour of involvement in non-agricultural activities as household income increases.

Major constraints

i. Gender discrimination

Rural women are much more over burdened with work, involving 15-16 hours a day with labour intensive, monotonous, drudgery prone activities.

ii. Development Bias and lack of technology refinement for women

Due to biasness of development planner the women are considered as consumer of social services rather than producers, kept them away from various development programmes. Although various technology had been developed but those are not ergonomics for women.

iii. Gender bias

Although women bear sole responsibility for family welfare and household management but their effort remain in shadow. There is a huge discrimination against women in wage payment due to inadequate access to information about rights, opportunities and support programmes *etc.* Women role in land and livestock management get little recognition by the government as a result they remain deprived from agricultural policies, schemes, formal support system like credit, extension services, insurance and marketing services.

iv. Limited access to resource

Due to limited access to resources, women are unable to meet collateral requirement to get loan from financial institution.

v. Inadequate access to markets

Women engaged in agriculture, forestry and fishery tend to produce small quantities and have poor access to organized marketing and cooperatives. Therefore, women sell mainly to private traders and have low bargaining power.

Policy and programmes

i. The direct benefit transfer

Improving access to land by introducing 'joint pattas' for both cultivable and homestead land; creating multiple livelihood opportunities through crop-livestock farming systems. agro-processing etc. and provide timely credit through Kisan Credit Card are some of the measure taken by the government to provide environment for women to contribute their best ability and improve their income.

ii. Mainstreaming gender concerns

A gender based concern is necessary. Introducing 'pro-women initiatives' to help women derive the benefits of all beneficiary-oriented components of different programs/schemes and missions, focusing on formation of women Self Help Groups (SHGs) and reserving 30 per cent of funds for women under various major schemes/programs and development interventions are some of the initiative taken by the government related gender mainstreaming.

iii. Budgetary allocations for women in agriculture

The increasing number of women in agriculture sector has not been matched with the increase in budgetary allocation for women farmers. Sufficient allocation should be made for women under each scheme.

iv. Mass media and ICT support

ICT led extension approach will be ground breaking to change the lives of women farmers by improving access to information and sharing knowledge through click of a button.

v. Women and research

Involving women in research work would help the work efficiency of women as technology will be designed keeping their specific issues in mind. This will refine the technology in favour of women and make it more ergonomic.

CONCLUSION

Feminization in agriculture occurred due to migration of male work force from agriculture. However, this phenomenon does not consistent with empowerment as women work force are always underpaid. After liberalization while almost half of the male work force engaged in non-agricultural sector, in case of female counter part only 35% of total workforce engaged in non-agricultural sector. Except Utter Pradesh and Bihar, it was evident that, in those states, where workers mainly engaged in agriculture, the differences in participation between men and women workers were lowest. Women mainly dominate livestock sector. Proportion of land utilized for food grain, per capita income, land holdings were some of the factors which were determining the women's participation. Among those variable poverty had a nonlinear relationship with participation of female in workforce. Gender discrimination, gender biased against women, lack of refinement of technology for women, limited access to resource and inadequate access to market are some the factors which impeding women's contribution to agriculture.

In order to improve the situation for women government are now focusing on gender budgeting. Besides women's participation in research work had been encouraging to develop technology which will be suitable for the use of women.

REFERENCES

- Agarwal, B. (2012). Food Security, Productivity and Gender Inequality. Working Paper No. 320. Bangalore: Institute of Economic Growth (IEG).
- Agrawal, T. and S. Chandrasekha. (2015). Short Term Migrants in India: Characteristics, Wages and Work Transition. Working Paper No. 07. Mumbai: Indra Gandhi Institute of Development Research.
- Bhandari, G. and Reddy, B.V.C. (2015). Impact of out-migration on agriculture and women work load: An economic analysis of hilly regions of Uttarakhand India. *Indian Journal of Agricultural Economics*. 70(3): 395-404.
- Deere, C. (2005). The Feminization of Agriculture? Economic Restructuring in Rural Latin America. Occasional Paper No. 1. Geneva: United Nation Research Institute for Social Development, February. www.unrisd.org/publications/opgp1.
- Dev, S. Mahendra (2012). Small Farmers in India: Challenges and Opportunities. Working Paper No. 2012-014. Mumbai: Indra Gandhi Institute of Development Research. <http://www.igidr.ac.in/pdf/publication/WP-2012-014.pdf>.
- Eapen, L. Mary and Nair, S.R. (2015). Agrarian Performance and Food Price Inflation in India. *Economic and Political Weekly*. 50(31): 49-60.
- Government of India (2007). Report of the Expert Group on Agricultural Indebtedness, Ministry of Finance (Chairperson: R. Radhakrishna).
- Hardikar, J. (2004). Migration, Agriculture and Women. <http://www.indiatogether.org>.
- <http://siteresources.worldbank.org/INTGENAGR/LIVSOUBOOK/Resources>
- Kanchi, A. (2010). Women Workers in Agriculture: Expanding Responsibilities and Shrinking Opportunities. ILO Asia-Pacific Working Paper series. New Delhi: International Labour Organisation (ILO).
- Kelkar, G. and Wang, Y. (2007). The gender questions and decent work: An analysis of apparel industry worker in China and India. *The Indian Journal of Labour Economics*. 50(3): 66-89.
- Lahiri-Dutt, K. (2014). Experiencing, Coping with Change: Women-Headed Farming Households in the Eastern Gangetic Plains. Canberra: Australian Council for International Agricultural Research.
- Lastarria Cornhiel, S. (2006). Feminization of Agriculture: Trends and Driving Forces. Background Paper for the World Development Report (2008). http://siteresources.worldbank.org/INTWDRS/Resources/477365-1327599046334/8394679-1327599874257/LastarriaCornhiel_FeminizationOfAgri.pdf.
- Mishra, S. (2006). Suicide Mortality Rates across States of India, 1975-2001: A Statistical Note. *Economic and Political Weekly*. 41(16): 1566-1569.

- Nataraju, M.S. *et al.* (2009). Proceedings of National Symposium on women in Agriculture, UAS, Bangalore. April 10-12: 2007.
- Patel, A. (1998). Women and white revolution. *Cooperative Dialogue*. 8(1): 20-25.
- Pattanaik, I., Lahiri-Dutt, K., Lockie, S. and Pritchard, B. (2017). The feminization of agriculture or the feminization of agrarian distress? Tracking the trajectory of women in agriculture in India. *Journal of the Asia Pacific Economy*. 1-18 <https://doi.org/10.1080/13547860.2017.1394569>
- Pritchard, B., Rammohan, A., Sekher, M., Parasuraman, S. and Choithani, C. (2014). *Feeding India: Entitlements, Capabilities and Livelihoods*. London: Routledge.
- Rawal, V. and Saha, P. (2015). Women's Employment in India: What do Recent NSS Surveys of Employment and Unemployment Show? *Statistics on Indian Economy and Society*. Accessed 28 January 2015. http://archive.indianstatistics.org/misc/women_work.pdf.
- Saxena, R. (2019). Feminization of Indian agriculture. *International Journal of Advanced Scientific Research and Management*. 4(7): 79-85.
- Shah, A. and Pattnaik, I. (2015). Recent Experiences of Agricultural Growth in Gujarat and Madhya Pradesh: An Enquiry into the Patterns, Processes and Impacts. Report submitted to Indian Council of Social Science Research (ICSSR), New Delhi.
- Srivastava, N. (2011). Feminisation of agriculture: What do survey data tell us? *Journal of Rural Development*. 30(3): 341-359.
- Tumbe, C. (2014). Missing Men, Migration and Labor Markets: Evidence from India. Working Paper No. 028. Delhi: South Asia Research Network (SARNET).
- Whatmore, S. (1991a). *Farming Women: Gender, Work and Family Enterprise* (London: Macmillan).