

ACIAR SDIP Foresight Program: Status Report

# Rural Women at Work or Out of Work?:

## A Gendered Analysis of Rural Employment in Eastern Gangetic Plains

Sucharita Sen with Sreenita Mondal,  
A. Daniel Raj, Soumi Chatterjee, & Suchita Jain



INTERNATIONAL  
FOOD POLICY  
RESEARCH  
INSTITUTE

IFPRI



Australian Government

Australian Centre for  
International Agricultural Research

**Australian  
Aid** 

## Abstract

This research note tries to unravel the spatial and temporal pluralities that exist with respect to gender and work in agriculture across Bangladesh, India and Nepal constituting Eastern Gangetic Basin (EGB). The context is derived from the generally accepted view that feminization of agriculture is typical of most developing countries which primarily stem from male-selective outmigration. While the macro level data published by government sources in Nepal and Bangladesh reveal feminization of agricultural labor force, a consistent de-feminization has been observed in the Indian side of EGB (Bihar and West Bengal). This note, other than pointing out the plurality in levels and trends in rural female workforce participation (WPR) across the three countries, finds that firstly, feminization in rural areas is not a necessary outcome of male selective outmigration, and secondly, the widely accepted reasons for defeminization in India cannot entirely explain the missing working women in rural EGB in India.

## Introduction

The Eastern Gangetic Basin (EGB) stretches across the states of Bihar and West Bengal in India, the western part of Bangladesh and the eastern half of Nepal. The existing literature hardly engages with women's role in agriculture that span all the three countries, much less their trajectories. The general acceptability of feminization (i.e. increased involvement of women in agriculture) in developing countries is based on a somewhat over-simplified proposition that if a large number of men are moving out of agriculture in search of better-paid jobs in the rural non-farm sector or to urban areas, women are expected to fill in for the labor that was earlier contributed by men (Gartaula et al 2010, Lastarria-Cornhiel 2008, Deere 2005). Though the positive or negative implications of such a trend have been looked into by a number of studies (Kelkar 2010, Patnaik et al 2018), very few have discounted this widely expected trend for developing countries other than in India (Brauw et al 2008). This note attempts to establish that even within a seemingly homogenous space of EGB, the trends of women's engagement in agriculture can be plural, and not necessarily associated with male selective outmigration from rural areas.

There are at least two other reasons that strengthen the rationale for such a study. First, it provides a distinct context for analyzing changing rural gender relations which have been inadequately conceptualized till now, unlike the gender relations embedded in class, caste, race, colonialism, etc. (Sachs 2018). Second, we typically assume a linear and smooth progression from the rural to urban workspaces, whereas there is ample evidence to suggest disrupted and uneven relationships between them in the recent decades in the Global South (Harvey 2003, Smith 1992, Friedman 1986). The notion of the agricultural surplus being reinvested in rural areas resulting in non-farm job creation seems to be a lopsided conclusion which does not pertain to the realities on the ground. In case of India, in particular, the trajectory of women's work needs to be understood in the context of an agricultural sector undergoing agrarian distress from the early nineties (Vakulabharanam & Motiram 2011, Suri 2006).

*Sucharita Sen with Sreenita Mondal, A. Daniel Raj, Soumi Chatterjee, and Suchita Jain. Sucharita Sen (ssen.jnu@gmail.com) is the corresponding author.*

---

*This is a pre-publication discussion paper. It is not peer-reviewed and the views expressed here are of the author(s) alone and not of ACIAR, DFAT or IFPRI.*

## Data and Concepts

The analysis for this note is based on unit level data published by the labor surveys by the respective governments (Employment Unemployment Surveys of National Sample Survey Organization and Labour Bureau Survey for India, Nepal Labour Force Survey and Bangladesh Labour Force Survey). The total samples of these surveys vary from 2.8 lakh to 4.4 lakh individuals for different years in India, 36 thousand to 39 thousand for Nepal and 84 thousand to 1.2 lakh in Bangladesh. For the analysis for India, 8 rounds have been used (1983, 1993, 2000, 2005, 2008, 2010, 2012 and 2015), for Nepal and Bangladesh, 2 rounds each have been used for the detailed analysis (2003 and 2013 for Bangladesh and 1998 and 2008 for Nepal).

The way work is defined and measured varies for different countries. In Nepal, collection of water, fuel and fodder is included under the definition of work, which is not the case for the other two countries. In India and Bangladesh, these activities which are done primarily by rural women and are crucial to the sustenance of households, are merely seen as extra-domestic work. For India, there is a rough account of the total number of non-workers that are engaged in these activities, but for Bangladesh, this information is entirely missing.

The way work is measured is similar for India and Nepal but somewhat different for Bangladesh. The concept that is comparable and hence used for this note for the former two countries is called *usual principal status*. *'The broad usual principal activity of the person will be identified based on the various activities pursued by the person during the reference period of last 365 days adopting a 'relatively long time (or major time)' criterion, not necessarily for a continuous period. The broad usual principal activity status will be one of the three categories viz. 'employed' (working), 'unemployed' (available for work) or 'not in labor force' (neither working nor available for work). It is to be noted that in deciding this, only the period normally available in a day for pursuing various activities need to be considered, and not the 24 hours of a day* (Government of India 2016: p 80). Nepal Labour Force Survey further clarifies this *'The usually economically active group can be further sub-divided into the usually employed and the usually unemployed, depending on whether or not the length of the employed periods exceeded the unemployed periods'* (Government of Nepal 2009: p 24). The reference period of the usual status thus is one year.

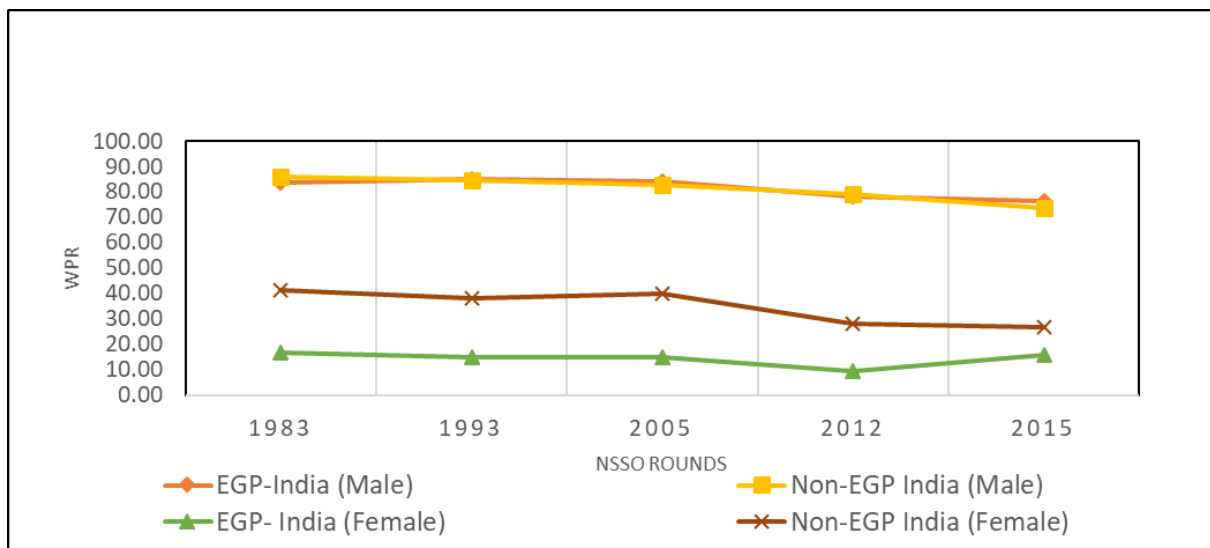
For Bangladesh, the only comparable measure of work that can be used over time within the country is a *weekly status*, where the reference period is 7 days preceding the day of survey enumeration. As is obvious, this status is different and less robust compared to the *usual status*, as the response of the weekly status would depend on the season of enumeration and could be an over-estimate or under-estimate depending on whether it is recorded in the peak or lean season respectively. This problem has been minimized by spreading the survey across seasons in different regions. In 2003, which had both the usual and weekly statuses, the difference in the female workforce participation (WPR) between the two measures was just above 1 percent, though, for males, this difference was about 5 percent.

*Feminization* is a temporal concept and has been understood as an increase in both absolute and relative participation of women in work. This note estimates the absolute trends by changes in female WPR (women workers in working-age group (15-59)/women population in the same age group), and the relative trends by dividing the female by male WPR. Defeminization is a trend which is reverse of feminization, i.e. a fall in the women's absolute or relative engagement in work. The concept of feminization has been also extended to portray the number of hours that women are engaged in work (again in either absolute or relative terms) and finally, an increase in level of skill that is required for the work women are engaged in (Slavchevska *et al.* 2016, Brauw *et al.* 2008). A reduction in unpaid work

and a corresponding increase in cash in hand has also been understood as a feminization process (Slavchevska *et al.* 2016).

## Levels and Trends of Female Work Participation in EGB

The primary objective of the study is to analyze the country level and sub-regional differences in the women's work in agriculture, given the overarching U shaped hypothesis proposed by Goldin (1994). This hypothesis assumes that with rising incomes and expansion of markets, the labor force participation rate for females would go down (suggesting women would withdraw from the labor force), referred to as the income effect. With further increases in the education levels and expanding market options for women, there will be a steep rise in the labor force participation of women referred to as the substitution effect. This U shaped hypothesis has been criticized on the grounds that it is rooted in a Global North perspective that may not apply to the experiences of the Global South; also, the different experiences of women across space and time owing to different socio-cultural, political and economic contexts produce different effects on women's work (Verick 2018, Tam 2011, Fatima and Sultana 2009).



**FIGURE 1 WORK PARTICIPATION RATES (USUAL PRINCIPLE STATUS), RURAL INDIA, 1983-2015**

SOURCE: CALCULATED FROM UNIT LEVEL NSSO EMPLOYMENT UNEMPLOYMENT DATA, VARIOUS YEARS AND LABOUR BUREAU DATA, 2015.

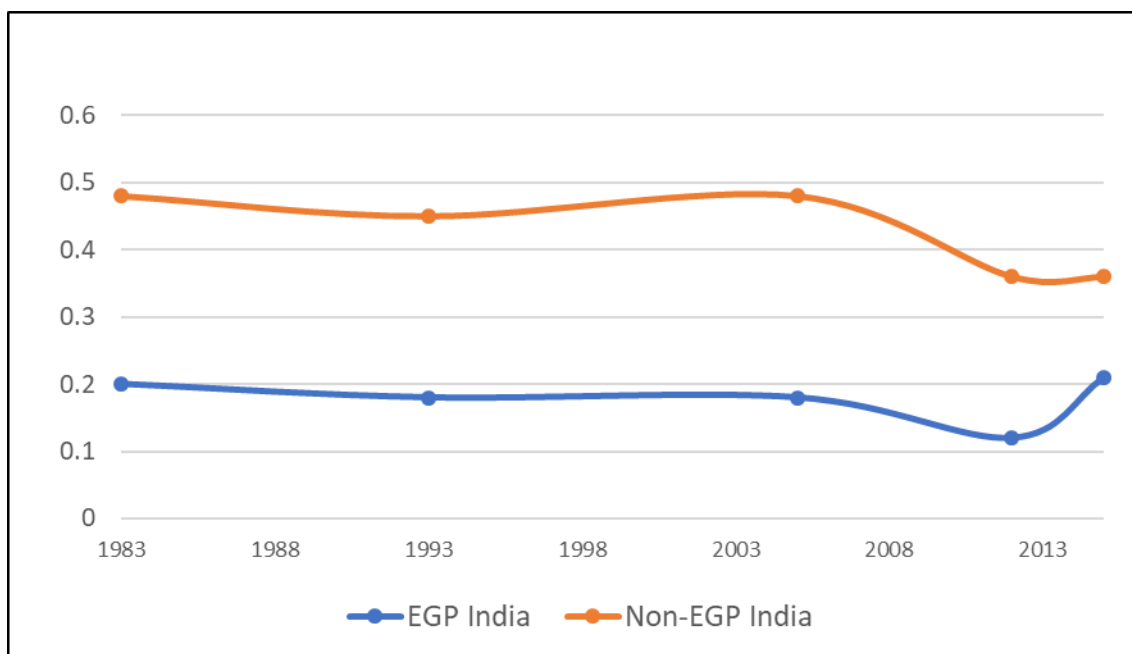


FIGURE 2 RELATIVE WORK PARTICIPATION RATES, RURAL INDIA

SOURCE: CALCULATED FROM UNIT LEVEL NSSO EMPLOYMENT UNEMPLOYMENT DATA, VARIOUS YEARS AND LABOUR BUREAU DATA, 2015.

TABLE 1 ABSOLUTE AND RELATIVE WORKFORCE PARTICIPATION RATES FOR NEPAL

	Work Participation Rate (WPR)	Relative WPR
	<b>Eastern Gangetic Basin</b>	
1998	76.60	0.92
2008	80.49	0.93
	<b>Rest of Nepal</b>	
1998	84.11	1.01
2008	84.70	0.99

Source: Calculated from the Labour Force Survey, Government of Nepal

TABLE 2 ABSOLUTE AND RELATIVE WORKFORCE PARTICIPATION RATES FOR BANGLADESH

	Work Participation Rate (WPR)		Relative WPR (F/M)
	Male	Female	
1995-96	78.8	17.4	0.22
1999-00	84	23.1	0.28
2002-03	88.1	25.6	0.29
2005-06	88	29.8	0.34
2010	83.3	36.4	0.44
2013	81.6	33.7	0.41

Source: Labour Force Survey, Government of Bangladesh

The difference in the trend of female WPR in Bangladesh, India and Nepal are striking in a number of ways that are revealed by **Figure 1** and **Figure 2**, **Table 1** and **Table 2**. A few comparative features within the three countries and the Eastern Gangetic Basin emerge as follows:

- The levels of both absolute women WPR and relative WPR of Nepal are much higher than that of India and Bangladesh. The data reveals that there is hardly any difference between male and female work participation rates in Nepal. Such high rates are partially a function of the way work is measured; as mentioned before, common property related work, like the collection of fodder, fuel and water, which are activities primarily undertaken by women are included as 'work' in Nepal, which is not the case in the other two countries. When the Indian WPR is adjusted for these activities (for Bangladesh this is not possible since the requisite data is not available), it goes up by nearly double of its current rates, though it is still lower than the Nepal WPR for women.
- In India, the WPR levels, both absolute and relative are much lower in Eastern Gangetic Plains (EGP) than the rest of the countries. The WPR of women was 1/5th of that of the rates of men in 1983 in EGP, which declined to 1/10th in relation to men in 2011-12; this recovered to the relative level of 1983 in the next 3 years in 2015. Notably, 2015 is the Labour Bureau data, which is different from that of the National Sample Survey; the definition of work in the two sources, however, is the same.
- Though in Bangladesh the levels of work participation were similar to that of the EGP India in 1995, by 2013, both the absolute (women) and relative WPR increased and was higher compared to EGP India. There is a slight decline in work participation that has been noted in the case of Bangladesh between 2010 and 2013. These comparisons have to be understood with the rider that the periods of comparison are not exactly similar.

## Driving Forces of Defeminisation in EGB India

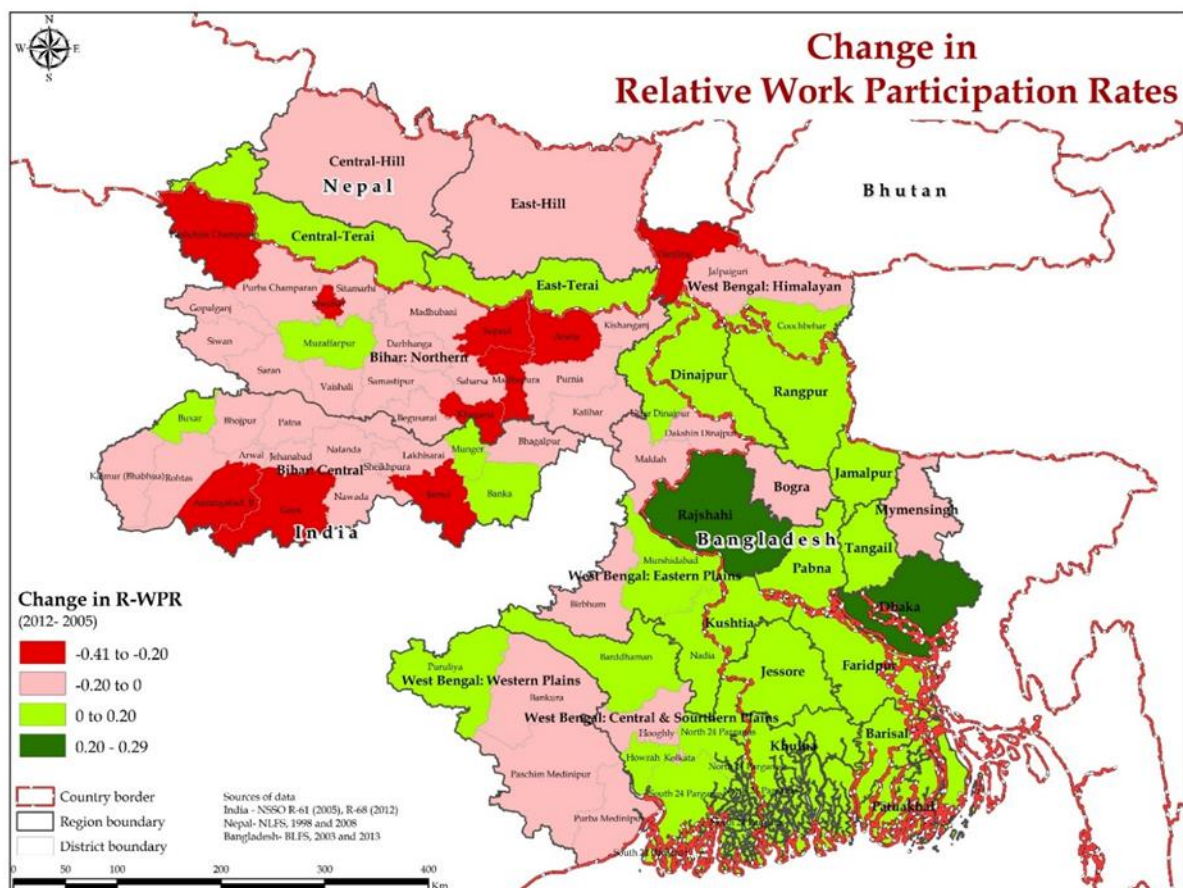
A trend of higher work participation in Nepal compared to India and Bangladesh can be explained from existing studies (Sen 2018). It has been argued that the terrain conditions and the physical landscape shapes cultural regimes, which in turn 'work in tandem to construct and sustain regional gender constructs' (Datta.2011: 354). The nature of the physical conditions shapes the demand for women's labor, and implicitly the way the patriarchy has been shaped in a particular region. The work participation of women tends to be higher in places with low productivity (hilly terrain) and low land prices, which are historically, areas of male selective outmigration. Typically, thus, the gender relations poses little restrictions on women working in public spaces, even agricultural fields owned by others in such cases, if only for the fact that the agricultural economy has had to historically depend on women.

However, a few unexpected points emerge from the comparative trends of the three countries. Firstly, the notably lower female WPR in EGB India is somewhat difficult to explain in comparison to the rest of India. Secondly, the long term defeminization for over three decades, in both EGB India and the rest of India has been a bit of a puzzle, though a lot of the existing literature has attempted to explain this (Verick 2018, Mehrotra and Parida 2017, Abraham 2013, Neff et al 2012, Kannan and Raveendran 2012). This set of literature leaves some questions unanswered. The third issue is the comparative position of India and Bangladesh EGP, i.e. the defeminizing trend in the former case and feminizing in

the latter. There is a trend of increasing productivity and mechanization in both cases, along with sub-regional trends of male selective out-migration (Jaim and Hossain 2011, SaciWATERs 2019).

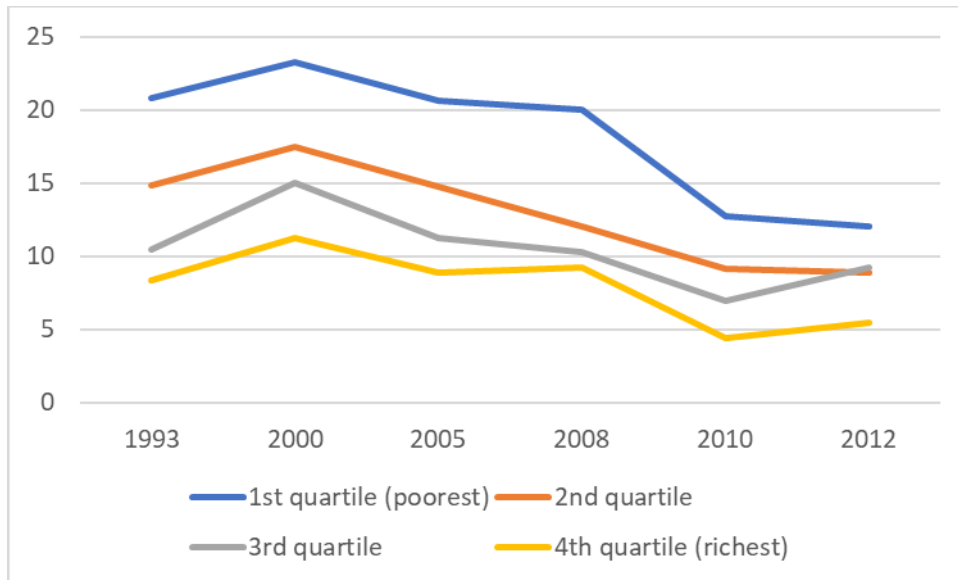
At the sub-regional level, almost the entirety of Bangladesh EGP is feminizing, which conforms to the macro trends (Figure 3). The Terai part of Nepal is feminizing, which is where the majority of work-force in the country is concentrated. In India, West Bengal reveals a mixed picture, while Bihar almost entirely is defeminizing, save four districts that are scattered.

The primary reasons of defeminization in Indian agriculture that come out of the literature are two-fold: first, a prosperity-induced withdrawal, a similar process described by Goldin explaining the fall in the U shaped curve; second, an education effect, i.e. more young women going into higher education relative to young men thus withdrawing from both workforce and labor force. The first can only be partially true given that the WPR has reduced faster for the poor than the rich (Kannan and Raveendran 2012). This is borne out by our analysis for EGB India, which shows the same trend in Figure 4. This is also inconsistent with the fact that the relative unemployment rate (females/males) in EGB India has gone up over the years (Figure 5). Figure 5 reveals that women are still in the labor force looking for work, which would not have been the case had it been primarily a case of prosperity-induced withdrawal.

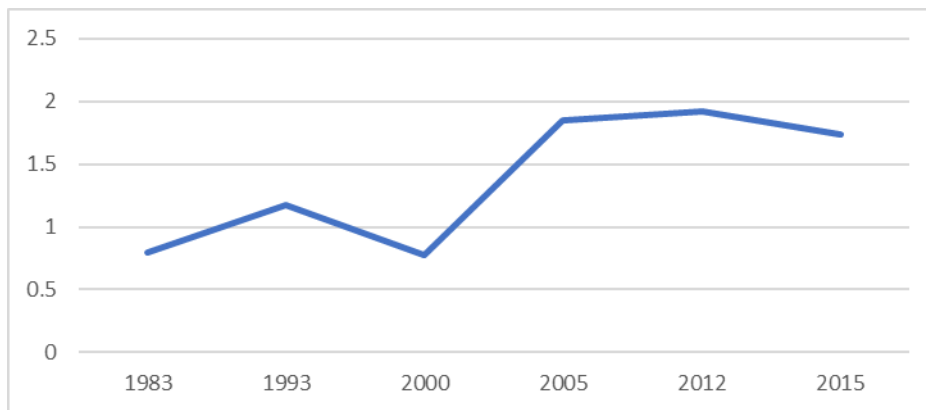


**FIGURE 3 CHANGE IN RELATIVE WORK PARTICIPATION RATES**

SOURCE: CALCULATED FROM NSSO EMPLOYMENT UNEMPLOYMENT ROUNDS, GOVERNMENT OF INDIA (2005 AND 2012), LABOUR FORCE SURVEY, GOVERNMENT OF BANGLADESH (2003 AND 2013) AND LABOUR FORCE SURVEY, GOVERNMENT OF NEPAL (1998 AND 2008)



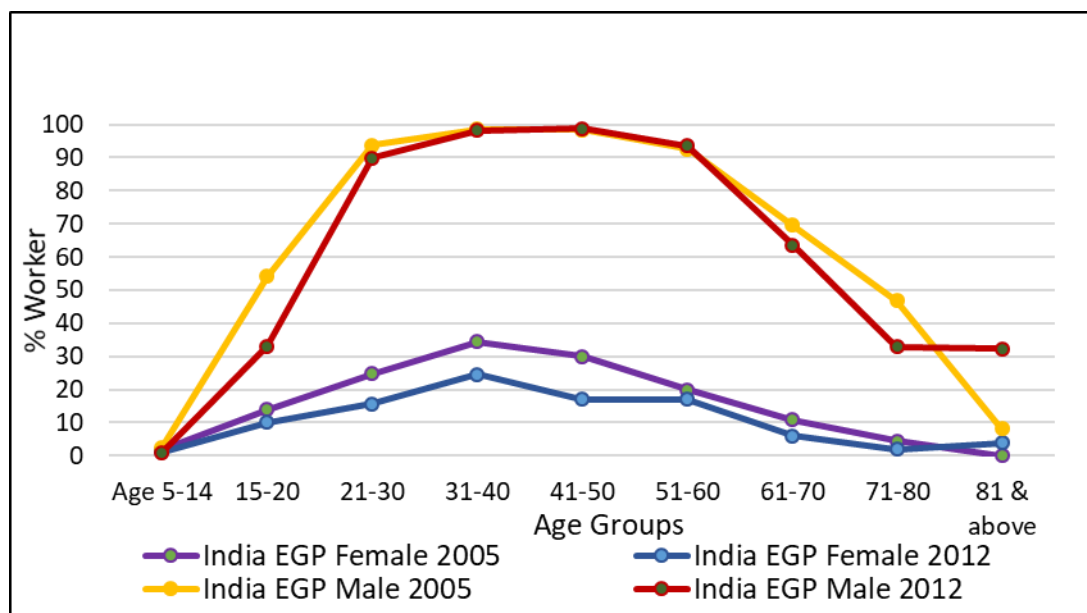
**FIGURE 4 REDUCTION OF FEMALE WPR BY MONTHLY PER CAPITA CONSUMPTION CATEGORIES IN EGB INDIA**  
 SOURCE: CALCULATED FROM NSSO EMPLOYMENT UNEMPLOYMENT ROUNDS, GOVERNMENT OF INDIA, VARIOUS YEARS.



**FIGURE 5 RELATIVE UNEMPLOYMENT RATES (FEMALE/MALE) IN EGP INDIA**  
 SOURCE: CALCULATED FROM NSSO EMPLOYMENT UNEMPLOYMENT ROUNDS, GOVERNMENT OF INDIA, VARIOUS YEARS.

We also discount the phenomenon of education-related withdrawal for EGB India in explaining the missing women in agriculture since the fall of women in the younger age group has been marginal in relation to that of men (**Figure 6**). The fact that Bihar has experienced consistent defeminization, raises questions about defeminization processes emanating out of economic progress, since it is a state marked by male selective outmigration on the one hand and low per capita agricultural income, on the other.





**FIGURE 6 AGE WISE WPR FOR MALE AND FEMALE IN THE EGP INDIA (2005 AND 2012)**

SOURCE: CALCULATED FROM NSSO EMPLOYMENT UNEMPLOYMENT ROUNDS, GOVERNMENT OF INDIA.

## Concluding Observations

The foregoing analysis suggests that the way ‘work’ is measured in the three countries invisibilizes women’s work both in Bangladesh and India, relative to Nepal, as activities like collection of water, fuel and fodder carried out specifically by women are not counted as work. Feminization in both Nepal and Bangladesh is consistent with expected trends in developing countries, where women fill in for men in agriculture as the latter move out of agriculture for higher wage rates. This may be a necessary condition for better control over agricultural resources for women in these two countries, but certainly not a sufficient one. Our larger study suggests that the quality of work and wages have not sufficiently improved for the women in these two countries, and at a few sub-regional contexts it has actually deteriorated (SaciWATERS 2019). The trend of defeminization in Indian EGB is somewhat counter-intuitive, since, at the sub-regional level, Bihar shows such a trend more clearly, and has all the potential characteristics that may have been linked with feminization. A defeminization process linked with higher levels of unemployment is indicative of distress and is suggestive of displacement from jobs or lack of jobs that women can take up along with the care work. Our larger study indicates that the burden of extra-domestic work like collection of water, fuel and fodder of women particularly from the poorer households have increased over time in Indian EGB, with degradation and privatization of common property resources, and this may have forced these women out of work, since these are activities crucial for sustenance of the household (SaciWATERS 2019). Also, it has been observed that in the last decade or so, due to an increase of unemployment among men in both rural and urban areas, they have been coming back to increasingly impoverished agriculture as cultivators, leading to a decline in the share of women cultivators (SaciWATERS 2019). The defeminization trend observed in EGB India is thus a serious concern. In the last three years, there appears to have been a reversal of the trend of defeminization in Indian EGB as per the data presented in this note, though it is impossible at this stage to conclude that this reversal is of a long term nature.

## References

- Abraham, V. (2013). Missing Labour or Consistent" De-Feminisation"? *Economic and Political Weekly*, 48(31), 99-108.
- De Brauw, A., Li, Q., Liu, C., Rozelle, S., & Zhang, L. (2008). Feminization of agriculture in China? Myths surrounding women's participation in farming. *The China Quarterly*, 194, 327-348.
- Deere, C. D. (2005). The feminization of agriculture? Economic restructuring in rural Latin America (No. 1). UNRISD Occasional Paper.
- Fatima, A., & Sultana, H. (2009). Tracing out the U-shape relationship between female labor force participation rate and economic development for Pakistan. *International Journal of Social Economics*, 36(1/2), 182-198.
- Friedmann, J. (1986). The world city hypothesis. *Development and Change*, 17(1), 69-83.
- Gartaula, H. N., Visser, L. E., & Niehof, A. (2010). Feminisation of agriculture as an effect of male out-migration: unexpected outcomes from Jhapa District, Eastern Nepal. *The International Journal of Interdisciplinary Social Sciences*, 5(2), 565-578.
- Goldin, C. (1994), "The U-shaped female labor force function in economic development and economic history", working paper series (Working Paper No. 4707), National Bureau of Economic Research, New York.
- Government of India (2016) India- Employment Unemployment, NSS 68th round, July 2011 to June 2012, National Sample Survey Organization, Ministry of Statistics and Programme Implementation, New Delhi.
- Government of Nepal (2009) Report on the Nepal Labour Force Survey, Central Bureau of Statistics, National Planning Commission Secretariat, Kathmandu.
- Harvey, D. (2003). The right to the city. *International Journal of Urban and Regional Research*, 27(4), 939-941.
- Jaim, W. M. H., & Hossain, M. (2011). Women's participation in agriculture in Bangladesh 1988–2008: Changes and determinants. In pre-conference event on Dynamics of Rural Livelihoods and Poverty in South Asia, 7th Asian Society of Agricultural Economists (ASAE) International Conference, Hanoi, Vietnam.
- Kannan, K. P., & Raveendran, G. (2012). Counting and profiling the missing labour force. *Economic and Political Weekly*, 47(6), 77-80.
- Kelkar, G. (2010). The feminization of agriculture in Asia: Implications for women's agency and productivity. UNIFEM South-Asia Regional Office.
- Lastarria-Cornhiel, S. (2008). Feminisation of Agriculture: trends and driving forces. Background Paper for the World Development Report 2008, Washington DC: The World Bank.
- Mehrotra, S., & Parida, J. K. (2017). Why is the labour force participation of women declining in India? *World Development*, 98, 360-380.

Neff, Daniel, Kunal Sen and Veronika Kling (2012) 'The Puzzling Decline in Rural Women's Labour Force Participation in India: A Re-examination,' German Institute of Global and Area Studies, Working Paper No: 196, May.

Pattnaik, I., Lahiri-Dutt, K., Lockie, S., & Pritchard, B. (2018). 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*, 23(1), 138-155.

Sachs, C. E. (2018). *Gendered fields: Rural women, agriculture, and environment*. Routledge: New York.

SaciWATERS (2019) *Understanding Women's Role in Agriculture in the Eastern Gangetic Plains: The Macro and Micro Connections*, supported by ACIAR, forthcoming.

Sen (2018) *Genderscape of Brahmaputra River: An Exploratory Exposition*, Report no. 2/2018, SaciWATERS, supported by The Asia Foundation.

Slavchevska, V., Kaaria, S., & Taivalmaa, S. L. (2016). *Feminization of agriculture in the context of rural transformations: What is the evidence?* Report No: ACS20815, World Bank: Washington DC.

Smith, N. (1992). *Geography, difference and the politics of scale*. in *Postmodernism and the Social Sciences* (pp. 57-79). Palgrave Macmillan, London.

Suri, K. C. (2006). *Political economy of agrarian distress*. *Economic and Political Weekly*, 41(16), 1523-1529.

Tam, H. (2011). *U-shaped female labor participation with economic development: Some panel data evidence*. *Economics Letters*, 110(2), 140-142.

Vakulabharanam, V., & Motiram, S. (2011). *Political economy of agrarian distress in India since the 1990s*. In *Understanding India's New Political Economy* (pp. 117-142). Routledge, New York.

Verick, S. (2018). *Female labor force participation and development*. *IZA World of Labor* 87.

## Foresight for Food Systems Status Reports

The Foresight for Food Systems in the Eastern Gangetic Plains (EGP) is a project led by IFPRI that seeks to lay down the groundwork for an open, scientifically informed and participatory foresight for food exercise in the EGP region led by regional scientists and engaging with other stakeholders like policy-makers, private investors, and farmers. A set of status reports on different components of the food system for better understanding of the current status, future challenges, research and knowledge gaps has been prepared for informed policy making for a sustainable future. The status reports will provide inputs into foresight and scenario building exercises in the region.

This work is funded by the Sustainable Development Investment Portfolio (SDIP), an Australian Government development strategy to increase water, food and energy security in South Asia to facilitate economic growth and improve livelihoods, targeting the poorest and most vulnerable, particularly women and girls.

SDIP initiatives aim to build technical capacity, share and generate knowledge, facilitate transboundary dialogue and mobilise the private sector and civil society in support of this objective. The focus area for SDIP initiatives is the three Himalayan river basins – the Indus, Ganges and Brahmaputra – which cover parts of India, Pakistan, Bhutan, Nepal and Bangladesh.

SDIP is a 12-year strategy (2012-2024), recognising that many of the critical interventions required for improving the integrated management of water, food and energy at the river basin level require sustained engagement to build regional cooperation and capacity over time. The Australian Centre for International Agricultural Research (ACIAR) is one of seven partners in SDIP. ACIAR SDIP funds research and development activities that improve agriculture's contribution to sustainable food systems. **For further information on the project please visit <https://aciarsdip.com/component-2>**