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Summary report: Understanding Women's Role in Agriculture in the Eastern Gangetic Basin: The Macro and Micro Connections



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Understanding Women's Role in Agriculture in the Eastern Gangetic Basin: The Macro and Micro Connections

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EXECUTIVE SUMMARY

This research report aims to situate the role of women in agriculture in the Eastern Gangetic Basin (EGB) across time and space. This transboundary region spans across the plains of Bihar and West Bengal in India, and the north-western and south-eastern parts of Bangladesh and Nepal respectively. Despite fertile agriculture land and a high dependence on this sector, the region is characterized by low productivity, limited crop diversification, a high incidence of rural poverty and persistent poor political governance. Though the EGB shares similarities across country borders, there are a number of intra-regional dissimilarities, in terms of physical, agricultural and cultural contexts.

The existing literature on the EGB does not attempt to comprehensively understand women's role in agriculture unpacking the plurality within the region, and this report aims to bridge this gap. The primary objective of the study was to understand the magnitude, quality and trend of women's participation in rural work and agriculture in relation to men across the three constituent countries of the EGB, i.e. Bangladesh, India and Nepal. The study takes two approaches to achieve this objective: first, a quantitative one, based on household and individual-level data published by the governments of the three countries on labor and employment, and second, a predominantly qualitative one, based on an exploratory field survey in the three countries attempting to triangulate, complement and supplement the findings derived from the quantitative analysis.

India, Nepal and Bangladesh have their own statistical data sources that provide time series information on employment and unemployment which are often not comparable across the countries. The study highlights the different ways in which women's work is measured in the three countries, and reveals that Nepal among the three countries addresses the problem of invisibility of women's work better than the other two countries by adopting a more holistic definition of 'productive' work. This entails bringing crucial extra-domestic activities primarily carried out by rural women into the ambit of work, due to the accepted norms shaping the gender division of work in the region like collection of water, fuel and fodder. Notably, such activities are not only central to the welfare of the household but also intersect with outcomes of agricultural activities through multiple pathways. The statistical sources in India and Bangladesh are less inclusive in what they consider to be work, and importantly this study has made suitable adjustments across countries to arrive at comparable measures for women's work wherever possible, and in other cases considered the nearest comparable measure.

This research has attempted to map the spatial variations in gender vulnerabilities at sub-regional levels in the EGB as a backdrop to understanding the changing gender roles in agriculture. In Bangladesh the gender gaps have been bridged successfully from a low base over time, and Nepal has achieved some improvements from a higher base the changes are not as impressive as that of Bangladesh. In the Indian part of the EGB, somewhat unexpectedly, the gender gaps have widened over time, which should be of considerable concern for the policymakers and civil society alike.

The work participation rates of women in the rural EGB demonstrate considerable regional variations, and diverging trends over a period of time, defying its relatively small size and the

shared agricultural and economic characteristics of the basin. In terms of levels of work participation of women, Nepal has a high base, while Bangladesh and India started with a much lower base. Over time, both Nepal and Bangladesh have had a feminizing rural and agricultural workforce, the latter more sharply so. The Indian EGB, on the other hand, has defeminized steadily over the last 30 years, the trend showing some reversal only in the last three years ending with 2015. The Indian EGB also experienced an increasing rate of unemployment among women, far exceeding that of men, which suggests that a lot of the women that are going out of work are still seeking it. At the sub-regional level in the Indian EGB, the regional pattern of defeminization is somewhat counter-intuitive since in Bihar it has been particularly sharp, although it has all the potential characteristics that are typically linked with feminization like low agricultural income and male outmigration.

Though the analysis from the macro quantitative approach falls short of revealing the exact processes behind defeminization in India, it provides some useful pointers to reveal its character. First, poorer women have dropped out of work faster than women from better-off households, and this coupled with the high unemployment rates is indicative of a distress driven process, which also appears to be class specific. A seemingly parallel trend of a higher share of women engaged in fuel and fodder collection over time, and hence not being able to participate in work in the Indian EGB supports the distress-driven proposition. The qualitative field insights highlight defeminization processes such as land-use changes from agriculture to aquaculture, lack of opportunities for women in the latter, gender-specific displacement due to mechanization, the combined effects of remittances leading to marginal increases in household income and long and difficult working conditions for women, from examples in Bihar and West Bengal.

Bringing together the findings from the quantitative and qualitative analyses, it can be stated that the recent increase in participation of women in agriculture in Bangladesh as a response to long-term male migration challenges the social norms in the country and this could thus initiate a lasting change in the gender relations observed historically in Bangladesh. The stark improvement in gender gaps in multifaceted aspects in the last decade is very likely a harbinger of this path. The feminization process in Nepal, in contrast, is a continuation of its societal historicity, unlikely to bring about deeper changes in the gender relations in the region from the way it is now. The inability to run the rural economy without women in a region that experienced years of traditional male outmigration, arguably shaped this historicity of social norms that found women working in the agricultural fields or their presence in public spaces acceptable. The relatively high gender gap in literacy rates in Nepal is a case in point, which indicates that the high participation of women in agriculture in Nepal is probably more functional than part of an all-encompassing pathway towards gender equity.

1 Background

This research explores the seemingly homogenous agriculture-dependent Eastern Gangetic Basin (EGB), unravelling the spatial and temporal pluralities with respect to gender and work in agriculture. The context is derived from the somewhat contradictory evidence in the existing literature about gendered patterns of work in agriculture in the EGB, whereby much of the primary fieldwork-based literature assume feminization as a temporal trajectory in South Asia in general and the EGB in particular, and further proceed to enquire the degree to which this process may have led to empowerment of women (Lahiri Dutt 2014; Sugden et al 2014). Feminization pertains to an increase in absolute and relative (to men) contribution of women, primarily by way of work participation in rural areas. The literature based on large scale sample surveys in India, however, clearly point out defeminization, that is a reduced participation of women in agriculture and the rural economy both in absolute and relative terms (Neff et al 2012; Kannan and Raveendran 2012; Mehrotra and Sinha 2017). There is a lack of a comprehensive discourse on the processes behind feminization in the EGB belonging to Bangladesh and Nepal on one hand, and defeminization in the Indian side (West Bengal and Bihar), on the other. This study attempts to bridge this gap, focusing on work-participation, quality of work and unemployment, and on the drivers of defeminization in India in particular, which is an unusual trend in the context of most developing countries.

1.1 Why the Eastern Gangetic Basin?

A balanced gender division of work, in terms of quality of work, remuneration and recognition of the work that women do is significant both from the perspectives of efficiency of an agrarian economy and social justice (Agarwal 2003). The transboundary region of the EGB spans the plains of Bihar and West Bengal in India, the north-western part of Bangladesh and the south-eastern part of Nepal. Though it is endowed with fertile agricultural land, the region is characterized by low productivity, limited crop diversification, a high incidence of rural poverty and persistent poor political governance (Carter and Darbas 2014; Lahiri Dutt 2014). Thus, the importance of agricultural work on rural livelihoods and the potential challenges encountered in this regard by the region cannot be overstated. The EGB also offers a regional context that is associated with a high dependence on agriculture, a high incidence of male-selective outmigration which is known to impact women's work, and spatially embedded physical and cultural pluralities (Sinha et al 2005; Sugden et al 2014; Raju et al 2016). There is therefore an a priori rationale for expecting intra-regional variations in women's role in agriculture within the region, that is likely to be shaped by complex intersecting factors, necessitating a comprehensive understanding of the region from both macro and micro perspectives.

1.2 Research questions

1. How can we characterize the meso regions of the EGB based on gender characteristics?
2. What are the patterns and trajectories of women's work in agriculture in the EGB in relation to that of men? What are the similarities and dissimilarities within the region?
3. What are the processes that impact these patterns and trajectories? In other words, how do we unpack the phenomena of feminization and defeminization in the region?

2 Methodological approaches and data

Given the complexities inherent in the research questions stated above, the study employs a mixed-methods approach that offers scope for triangulation and complementarity (Kelle 2005). The study is conducted at two levels or scales, the macro and the micro. The significance of the macro level analysis is that it covers the entire region based on unit level (household and individual) employment and unemployment data generated by large labor surveys over time, from government sources in three countries. The total samples of these surveys vary from 280,000 to 440,000 individuals for different years in India; 36,000 to 39,000 in Nepal; and 84,000 to 120,000 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 & 2013 for Bangladesh and 1998 & 2008 for Nepal).

The data across the three countries are often not comparable, particularly the way in which women's work is measured in the three countries. Nepal addresses the problem of invisibility of women's work better than the other two countries by adopting a more holistic definition of 'productive' work. In particular, this entails bringing crucial extra-domestic activities like collection of water, fuel and fodder into the ambit of work. These tasks are primarily carried out by rural women due to the accepted norms shaping the gender division of work in the region. Notably, such activities are not only central to the welfare of the household but also intersect with outcomes of agricultural activities through multiple pathways. This study has made suitable adjustments across countries to arrive at comparable measures for women's work wherever possible, and in other cases considered the nearest comparable measure.

Frequent changes in definitions and concepts over the time period have also led to problems of comparability across different data rounds within the same source. An analysis of the methodological differences in all three countries has added a new dimension to the study. This leads to the finding that the estimation of labor force using Usual Status (US) approach and majority time criteria provides a broad spectrum which captures the maximum possible number of workers. For women in rural areas in particular, such an approach enables their inclusion in the workforce, which tends to be otherwise overlooked due to the part-time and seasonal nature of work. The chances of under-counting or over-counting of female workers increase in the Current Weekly Status (CWS), which the study was compelled to use in the case of Bangladesh. Additionally, the ordering arrangement of the questions in the questionnaire also appears to impact the enumeration of female workers.

The micro level analysis based on primary fieldwork for the study was exploratory but was designed to tie up with the macro level analysis. It specifically attempted to answer questions emerging out of the macro level analysis which the latter was not able to address satisfactorily. In particular, it attempted to unravel the processes leading to defeminization in the Indian EGB, and feminization in Nepal and Bangladesh. To achieve this end, two districts/blocks were selected from the states of Bihar and West Bengal, where the rates of defeminization were the highest; similarly, administrative units from Bangladesh and Nepal were selected where rates of feminization were high. The actual cluster of villages within these administrative units were selected through a Rapid Rural Appraisal. In-depth interviews primarily with women and fewer men were the main data source for the qualitative analysis. A time-use survey was also conducted as a supplementary exercise to compare for the time spent in different activities both in the peak and the lean seasons by men and women.

3 Macro Trends

3.1 Mapping heterogeneity in the EGB

This study has used selected gender gap criteria that includes the child sex ratio, relative literacy rate and relative work participation rate, showing gender vulnerability as a whole to define the EGB region. The spatial variations of these variables indicate that the gender space of the EGB, as expected, is very often shaped by both cultural roots and the economic status of the respective country. The performative aspect of gender in particular often tends to be shaped by the latter over time, though the rules of patriarchy in the different spaces provide its initial context.

There is a clear regional difference in the levels of the three variables, both spatially and temporally (**Figure 1**). In the terminal period, Bangladesh and Nepal are seemingly at par with respect to the relatively high child sex ratio, Bangladesh far exceeding the status of the other two countries vis-à-vis relative literacy rates, while Nepal performs the best in terms of relative work participation rates. India falls behind in all three indicators, more so in the second period. In terms of improvement in the Gender Vulnerability Index (GVI) over the decade that the study considers, Bangladesh is far ahead of India and to some extent, Nepal (Raju et al 2016). Though the study comes up with broad regional patterns, there are significant sub-regional differences in both Nepal and Bihar; in the case of the former, the Terai region of Nepal is worse off compared to the mountain region, while in the case of Bihar, north-western Bihar is worse off compared to the rest of the state. This analysis reveals that the high work participation rates in Nepal should be viewed in the context of a high, though improving gender gap in literacy rates, while the low to moderate work participation rates in Bangladesh need to be evaluated in the backdrop of a relatively low gap in literacy rate. India's case, particularly with respect to Bihar, is worrying as the high gender gaps in most indicators at the base period have further widened, leading to an exceedingly low status of GVI in the latter period. The de-feminizing trend of agriculture in particular and rural work in general needs to be contextualized in the perspective of a declining status of women in India.

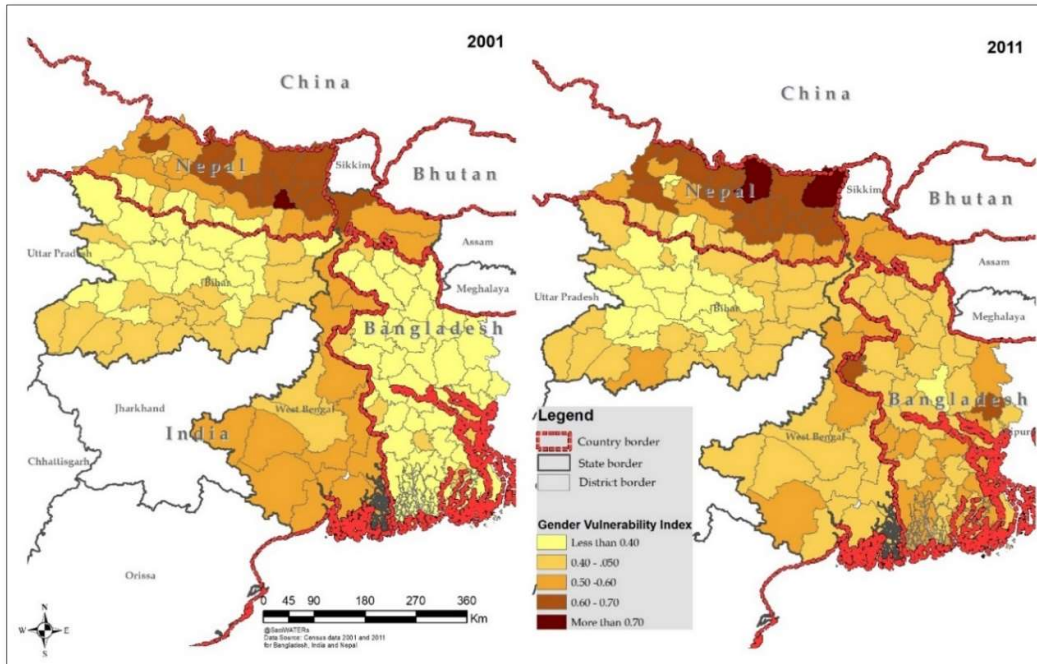


Figure 1 Gender Vulnerability Index in the Eastern Gangetic Basin. Source: Calculated from NSSO Employment Unemployment rounds, Government of India (2005 and 2012), Labor Force Survey, Government of Bangladesh (2003 and 2013) and Labor Force Survey, Government of Nepal (1998 and 2008).

3.2 Patterns of feminization and defeminisation

An interesting regional picture emerges after analyzing the levels and trends of WPR and unemployment rates of the three countries. Nepal stands out due to very high female work participation rates, comparable to that of men and still increasing over the years (**Table 1**). In Bangladesh, albeit, from a very low base, the female work participation rates have increased appreciably over time (**Table 2**). 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, although the impacts of this on work-load, empowerment and decision-making are highly variable depending on many socio-cultural and economic variables. Feminization of agriculture may be a necessary condition for better control over agricultural resources for women, but certainly not a sufficient one. Our study suggests that the quality of work and wages have not sufficiently improved for the women in these two countries, and in the case of share of unpaid family work, women in both countries have experienced an increase.

Table 1 Absolute and Relative Work Participation Rates for Nepal. Source: Calculated from Labor Force Survey, Government of Nepal.

Year	Work Participation Rate (WPR)	Relative WPR (F:M)
Eastern Gangetic Basin		
1998	76.60	0.92
2008	80.49	0.93
Rest of Nepal		
1998	84.11	1.01
2008	84.70	0.99

Table 2 Absolute and Relative Work Participation Rates for Bangladesh. Source: Labor Force Survey, Government of Bangladesh.

	Work Participation Rate (WPR)		Relative WPR (F:M)
	Male	Female	
1995 - 96	78.8	17.4	0.22
1999 - 00	84.0	23.1	0.28
2002 - 03	88.1	25.6	0.29
2005 - 06	88.0	29.8	0.34
2010	83.3	36.4	0.44
2013	81.6	33.7	0.41

The absolute fall in men and women’s Work Participation Rates (WPR) in rural areas of EGB India, though of general concern, need not have been a gender issue (**Figure 2**); a fall in economic opportunities and lack of jobs could potentially lead to a fall for both gender categories. However, the sustained fall in the relative WPR, save in the terminal year suggests that more women have been dispossessed or dropped out of work over time, relative to men in the same area (**Figure 3**). The declining status of women in India, as observed in the earlier section, does not point towards an increased possibility of an enhanced bargaining power or choices of women that could reverse the defeminizing trend. This region also experienced an increasing unemployment rate of women far higher that of men, which in the recent period reached more than eight per cent.

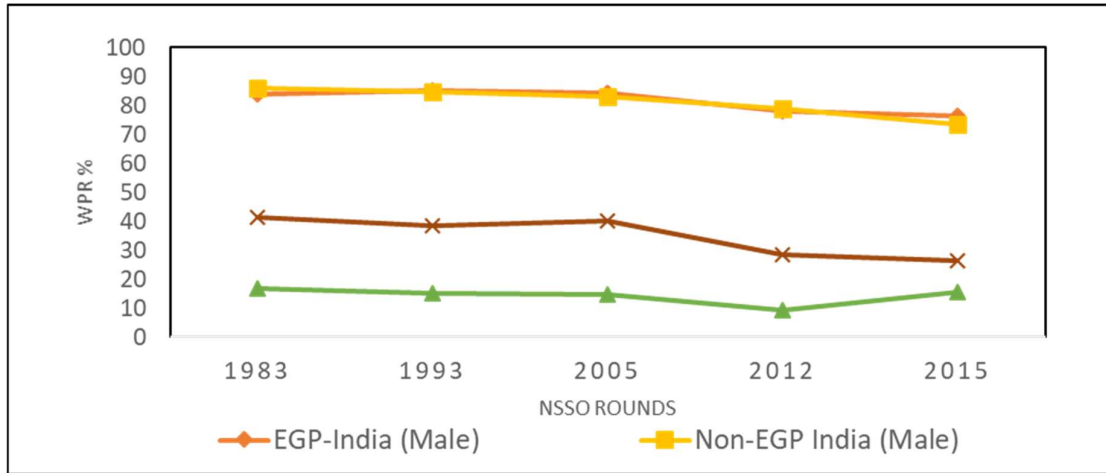


Figure 2 Work Participation Rates (Usual Principal Status). Source: Calculated from unit level NSSO Employment Unemployment data, various years and Labor Bureau data, 2015.

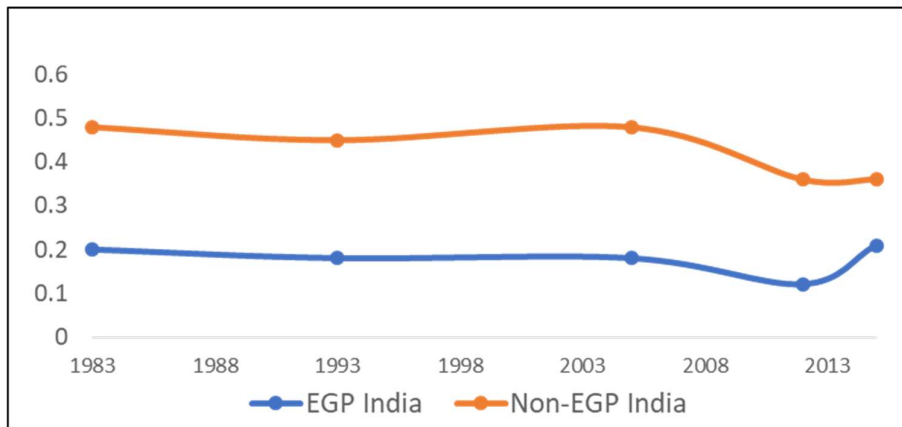


Figure 3 Relative Work Participation Rates, rural India. Source: Calculated from unit level NSSO Employment Unemployment data, various years and Labor Bureau data, 2015.

At the sub-regional level, almost the entirety of Bangladesh EGB is feminizing, which conforms to the macro trends (**Figure 3**). The Terai part of Nepal is feminizing, which is where the majority of the workforce in the country is concentrated. In India, West Bengal reveals a mixed picture, with the areas adjacent to Bangladesh feminizing, while the western parts are defeminizing. Bihar almost entirely is defeminizing, save four districts that are scattered (**Figure 4**).

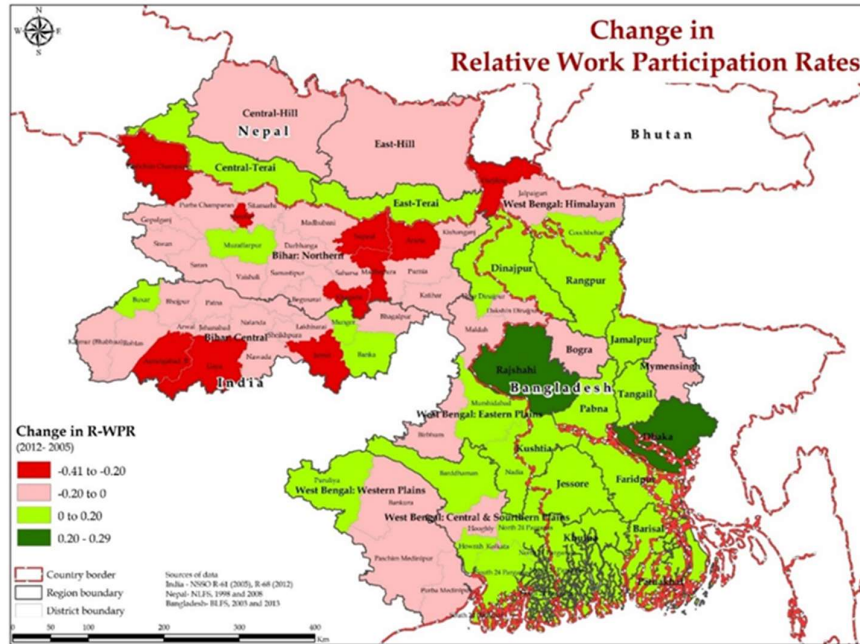


Figure 4 Change in Relative Work Participation Rates, 2005 – 2012. Source: Calculated from NSSO Employment Unemployment rounds, Government of India (2005 and 2012), Labor Force Survey, Government of Bangladesh (2003 and 2013) and Labor Force Survey, Government of Nepal (1998 and 2008).

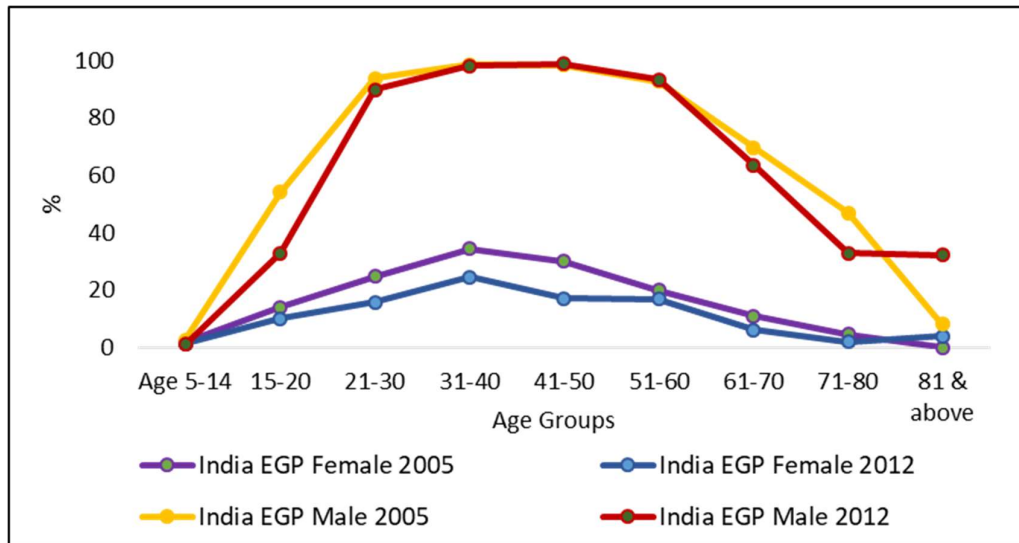


Figure 5 Age wise WPR for male and female in the EGB regions of India (2005 and 2012). Source: Calculated from NSSO Employment Unemployment rounds, Government of India (2005 and 2012).

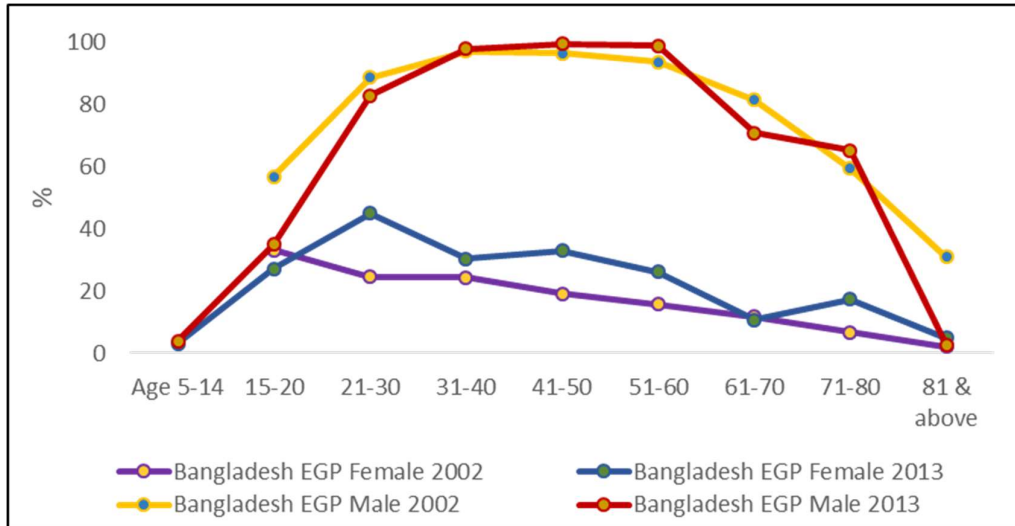


Figure 6 Age wise WPR of male and female in the EGB regions of Bangladesh (2002 and 2013). Source: Calculated from Labor Force Survey, Government of Bangladesh (2002 and 2013).

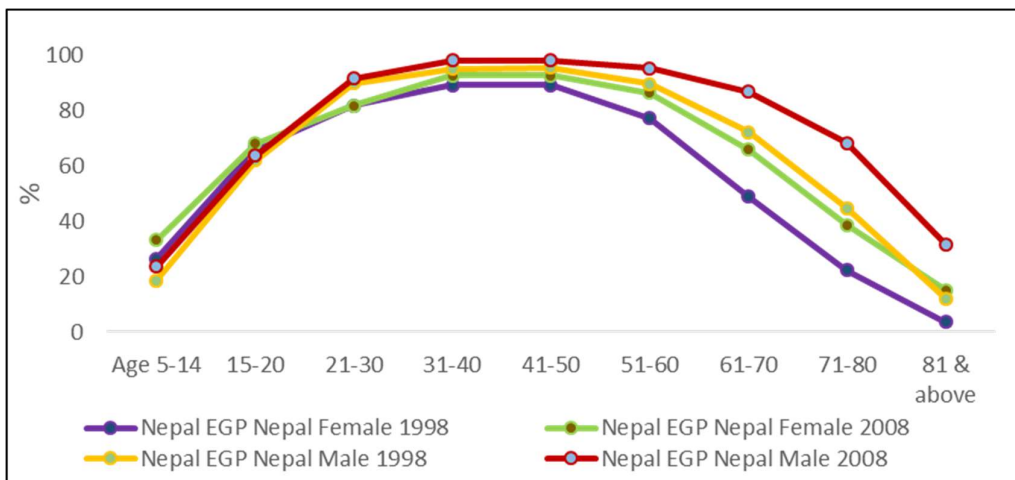


Figure 7 Age wise WPR of male and female in the EGB regions of Nepal (1998 and 2008). Source: Calculated from Labor Force Survey, Government of Nepal (1998 and 2008).

A comparison of age-specific trends of women’s work participation over time in the three countries provides a new dimension to the analysis of trajectories of women’s role in rural work (**Figure 5, Figure 6 & Figure 7**). **Figure 5** reveals that in EGB India, there is no change in men’s work participation in the peak working age groups i.e. from 21 to 60. There is however a fall among the age groups below 20, particularly 15-20. This needs to be interpreted in view of the higher share of young men leaving work for education. The fall in work participation of women, however, is from all age groups, particularly the peak working age groups. The fall in the younger women is meager in comparison to the fall observed among men of the same age group, indicating that education-related withdrawal from work in favor of women is not a plausible explanation in case of EGB India. In the case of Bangladesh, no significant changes

can be observed among men, except for a reduction among the younger age groups, which can be attributed to higher shares of younger men participating in education, like in the case of India (**Figure 6**). In the former period in Bangladesh, the women’s work participation across age does not resemble the typical inverted U-shaped curve, instead registering a consistent fall after the 15-20 age groups; as indicated in the literature, this was due to withdrawal of women from work after marriage (BBS 2004). A decade later, in 2013, it can be observed that the curve somewhat resembles the inverted U- shaped curve. This is reflective of a structural change in gendered work culture in Bangladesh, an observation supported by multiple strands of evidences in this study. In the case of Nepal, as can clearly be observed from **Figure 7**, the work burden is shifting to both older men and women, which poses a challenge for agriculture in the country in the future, since the younger age groups over time appear to be moving out of the sector in relative terms.

3.3 Processes of Feminization and Defeminization

The trend of defeminization in the Indian EGB is somewhat counter-intuitive; at the sub-regional level, Bihar more than West Bengal experiences this trend clearly but has all the potential characteristics that would normally be linked with feminization, such as low agricultural income and male outmigration. A defeminization process linked with higher levels of unemployment is indicative of distress and suggestive of displacement from jobs or lack of jobs that women can take up along with care work. This study reveals that the explanation in the existing literature of defeminization in rural India as a whole, of prosperity-induced withdrawal can at best only partially provide an explanation for the trend in EGB India, while the proposition of education-related withdrawal does not apply for EGB India even in a limited way, as pointed out in the previous section (Neff et al 2012; Kannan and Raveendran 2012; Abraham 2013; Mehrotra and Parida 2017; Verick 2018). In this region, the withdrawal of women from the workforce is the highest from the poorest section that partially defies the hypothesis of a prosperity-induced withdrawal theory (**Figure 8**).

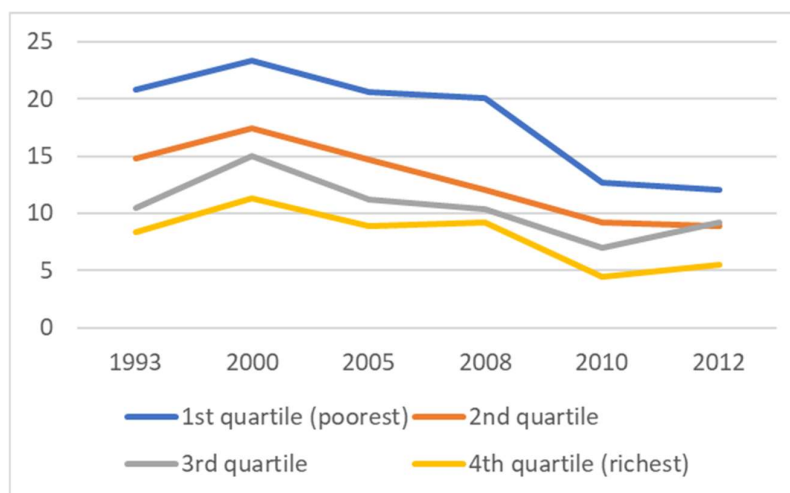


Figure 8 Reduction of female WPR by monthly per capita consumption categories in EGB India. Source: Calculated from NSSO Employment Unemployment rounds, Government of India, various years.

The withdrawal from work among the richer groups, albeit at a lower rate, is suggestive of the class-specificity and complexity of the process of defeminization (**Figure 8**). In other words, such a process in EGB India does not appear to be either unidirectional or uni-faceted. While the explanation of prosperity-induced withdrawal offers a plausible explanation for the reduction of WPR among the economically better-off groups, this also is indicative of the continued practices of restrictive norms for women, in terms of their workspace and mobility.

To explain the withdrawal of women from work from the poorer households, this piece of research offers two additional explanations that have not been explored earlier. Firstly, our study indicates that over time, a higher share of women are engaged in extra-domestic work like collection of water, fuel and fodder particularly from the poorer households in Indian EGB, potentially due to degradation and privatization of common property resources. This added burden of labor may have forced these women out of work, since these are activities crucial for sustenance of the household. Secondly, it has been observed that in the last decade or so, due to an increased incidence of unemployment among men in urban areas, they have been returning to an increasingly impoverished agriculture sector as cultivators, leading to a decline in the share of women cultivators. The defeminization trend observed in EGB India is thus a serious concern. In the terminal period (2015), there appears to have been a reversal of the trend of defeminization in Indian EGB, though it is impossible at this stage to conclude whether this reversal is of a long-term nature.

However, defeminization in India has also been associated with greater participation in wage labor for women, both in agriculture and non-agricultural sectors, the latter spurred to a large extent by Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA). Though a reduced presence of women in rural work in India does not in a generic sense augur well for the future, the silver lining could be their greater access to cash through wages, unlike in the other two countries which have experienced an increase in the share of unpaid work among women.

4 Understanding micro level drivers

A primary survey was carried out based on exploratory qualitative fieldwork in selected locations of West Bengal, Bihar, Nepal and Bangladesh; the objective of this exercise was to provide location-specific explanations for women's changing roles in agriculture. The field insights reveal that the processes of feminization and defeminization are complex as well as multidimensional, which conforms with the macro analysis. It also highlights that the regional plurality of patriarchies leads to qualitatively different outcomes in terms of the type of roles women undertake in agriculture, in addition to the magnitude of their participation.

4.1 Feminization in Bangladesh and Nepal

The Bangladeshi farming system can be described as a male-dominated farming system, where women's presence in farm activities is invisible but present (Jaim et al 2011; Rahman and Islam 2013). Thus though both Nepal and Bangladesh have indicated a feminization of the workforce, the social contexts are very different in these two countries. Though the Purdah system in Bangladesh still restricts women's mobility outside the home space, men's long-term absence has compelled women to take up additional roles in agriculture that they were earlier unused to, including at times managerial roles (Khan et al 2017). Increased participation of women in agriculture, however, has been primarily restricted to unpaid family labor in the absence of men, which corresponds to the findings based on secondary data analysis. The increased incidence of family labor has primarily come from activities performed traditionally like the post-harvest activities like threshing, boiling and drying of crops, managing and storing of seeds, as well as tending to livestock and kitchen gardens (**Figure 9**). The process of feminization in Bangladesh has been spurred through outmigration of men, much of which in our selected field area was international migration to the Gulf countries. This has left behind female-headed households, and our interviews with these women reveal that they have now started taking decisions about hiring men for casual work for agricultural activities in the field, which was solely handled by their husbands before they migrated. Women from poorer households have, in fact, started taking up field activities, which is against the religio-cultural norms of the region. For example Fahima (name changed), from a poor household, has recently entered the previously uncharted territory of cultivation of vegetables in the field (**Figure 10**). The forced increased participation of women in agriculture, primarily of those from the poorer households challenges the social norms, and could initiate a lasting change in the gender relations observed historically in Bangladesh.



Figure 9 Women are involved in post-harvest activities on the field adjacent to their house in Kohilatoli village of Manikganj district, Bangladesh.



Figure 10 Fahima, from Deutia Village of Manikganj district, Bangladesh, harvesting okra from her own field, work she would not have thought of doing before her husband migrated to the Gulf.

The feminization process in Nepal, in contrast, is a continuation of its societal historicity, unlikely to bring about deeper changes in the gender relations in the region. Unlike in Bangladesh, a lot of the outmigration is not male-selective; younger couples migrate first to the Terai, within the country, and subsequently to India. The burdens are shifted to older couples, a fact borne out by the macro analysis. The migration outside of Nepal and India, is however, male selective, and in these isolated cases, the burden of agricultural work shifts

primarily to the women married to the migrated male member. Often the burden of the work, like the elderly, shifts to young girl children as well, for activities such as cooking, fetching water, collecting grass for fodder and cattle grazing (**Figure 11**).



Figure 11 Young girls, taking charge of activities such as cattle grazing in Nepal.

4.2 Defeminization in India

The primary survey uncovered reasons behind defeminization in EGB India, in addition to what was pointed out by the secondary data-based analysis. There was evidence of a strong correlation between changing agricultural systems (cropping pattern, changing land use and mechanization) and gender division of labor, which intensifies the defeminization of agriculture in rural areas of West Bengal (**Figure 12**). The Bihar story reveals that male out-migration has a major impact on women's work, but in a converse way compared to what is typically expected. There are indications that in the initial periods, male outmigration led to women taking over agricultural activities, often at low wage rates with long working hours. At a later stage, once the male migrant started sending adequate remittances to the family, it has been reported by both male and female respondents that women wage laborers tended to withdraw from agricultural work. We are hesitant to term this 'prosperity-induced withdrawal' as some of the households where the withdrawal happened were not economically well-off, but were in a position to make the choice of not getting into adverse working conditions that required tedious work but paid low wages. This choice was also made since the long hours in the available jobs made it difficult to perform the domestic and care-work at home. There is evidence that agrarian distress has a big impact on gender roles in agriculture and impacts women adversely, an effect that is hardly highlighted adequately in existing literature. This adversity stems from low wage rates and lower levels of employment created due to low profits in agriculture; distress-driven migration that takes men somewhat out of agriculture, leave women to engage in low-paid wage work; agrarian distress combined with urban unemployment, as the case is in India, brings men seasonally back into cultivation, having a defeminizing effect, as an impoverished agriculture cannot accommodate both men and women. Some narratives from Bihar revealed that labor scarcity due to male migration has induced mechanization of agriculture in the state, which has had a gendered effect on labor displacement (**Figure 13**).



Figure 12 Huge expanses in villages in Purba Medinipur in West Bengal engaged in freshwater fisheries, displacing women from employment due to change in land use.



Figure 13 Mechanization offers fewer jobs for women; it causes gendered labor displacement in Bihar, as women are impacted by the process more than men.

5 Conclusion

This study explores the macro and micro connect in terms of the changing role of women in EGB agriculture, responding to a gap in the literature. The focus on the EGB derives its importance on three fronts. First, agriculture is central in sustaining livelihoods of people living in the rural areas of this transboundary region and in at least two of the three countries until two decades ago, the level of women's participation in rural work was much lower compared to other developing countries. Second, there are significant physical and cultural diversities within the region, likely to lead to complex pluralities in women's roles in agriculture, an area that is underexplored in existing literature. Third, a point partially stemming out of the second point is that there is no systematic comparison of the three countries on the issue at hand, much less for their component parts within the region.

The study focuses on three major issues, specifically exploring the sub-regional pluralities in terms of its gendered context; explication of the key patterns and trajectories of women's work in agriculture in the EGB in relation to that of men, highlighting the similarities and dissimilarities within the region and identification of the key processes that impact those patterns.

The complex questions posed above and contradictions within the literature based on secondary and primary empirical evidences in the case of India necessitated a convergence of macro trends based on secondary quantitative data and micro level information based on qualitative methods.

The gendered context of the EGB presents a plurality both in terms of levels of gendered differences and the way these have been bridged over time. Gender gap was explored through three indicators: the child sex ratio, relative literacy rate and relative work participation rate, and a composite of these indicators to arrive at gender vulnerabilities across the region. Regional differences of the gendered context, both spatially and temporally, does not present a linear picture. In terms of levels, Bangladesh and Nepal are better off in different aspects of the Gender Vulnerability Index, while India is behind in all the constituent elements of the index. With respect to the trends, Bangladesh surpasses the other two countries in improving its position in all respects. The Terai region of Nepal performs worse than the mountain region. India, over time, has lost its relative position in the EGB, compared to the other two countries, particularly Bihar.

Women's relative presence in agriculture has somewhat followed the larger gender context. The levels of both absolute and relative women work participation in Nepal are much higher than that of India and Bangladesh. In part, this stems from the holistic way in which work is measured in Nepal, though even correcting for the same, as the study has attempted to do, women in Nepal have a bigger presence in agriculture. Though in Bangladesh the levels of work participation were similar to that of the EGP India in 1995, by 2013, both absolute and relative work participation increased and were notably higher compared to EGP India. Bangladesh thus experienced a feminization of agriculture and rural work, which is striking in terms of the rapid gains it has made; Nepal, where women had comparable work participation to that of men, further bridged this marginal gap, though this has been bridged by older women.

The Indian EGB is striking in its already low rates of work participation, further defeminizing over the last three decades, recovering only in the last three years of the period considered by

the study. Bihar, a state characterized by high male selective migration and poverty, a region that would be typically associated with feminization, has demonstrated a trend completely contrary to it. The macro analysis examines two oft-discussed reasons of defeminization for India; prosperity-induced and education-related withdrawal. It comes to the conclusion that while the former can partly explain the defeminization process, the second is not applicable to the region.

The study concludes that *for the most part, the defeminization process has its roots in agrarian distress*. A defeminization process associated with higher withdrawals from poorer households and higher levels of unemployment is indicative of this claim, and is suggestive of displacement from jobs or lack of jobs that women can take up along with the care work. Our 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. It has been also 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 an increasingly impoverished agriculture as cultivators, leading to a decline in the share of women cultivators. The defeminization trend observed in EGB India, is thus a serious concern.

The study achieved the convergence of the macro and micro scale analysis based on two different methodological approaches in two ways: first by triangulating observations of the macro analysis through primary observations, and then by adding to explanations of the trends emerging out of the secondary data through field insights. Examples of validations that the primary insights provided to macro analysis are as follows:

- Both analyses reveal that there has been an increase in the incidence of unpaid work, along with feminization in Nepal and particularly in Bangladesh.
- Both sets of analysis confirm a shifting burden of feminization in Nepal to the elderly women.
- Both the macro and micro insights suggest an increased burden on women due to Common Property Resource (CPR) related work in EGB India. The secondary data provided an indication of an increase in the share of women engaged in CPR related work, while the primary survey revealed examples of aquaculture taking over paddy fields that reduced de facto CPRs.
- Both secondary and primary analyses point towards the class-specific processes of defeminization; in other words the reasons for reduced participation among the richer and poorer households are different.

The primary survey complemented explanations provided by the macro analysis in several ways. While the macro analysis suggested an increase in the share of male cultivators which can be interpreted as return of men to agriculture, the primary survey revealed that men are in fact moving back to agriculture in the form of seasonal work during the times of peak labor demand due to lower availability of jobs in urban areas; this in turn, is rendering the women jobless or leaving them with less than full employment.

One of the puzzles that the research based on the secondary data left us with is that Bihar is defeminizing, in spite of being a state with high male out-migration. The field survey enabled us to explain this by revealing that the remittances, though meagre, often offer a choice to women not to join agricultural work that pays less but requires long hours. This cannot be

termed as the 'prosperity-induced withdrawal' as commonly suggested in the literature, but a slight widening of choices responding to an unfavorable labor market.

The primary analysis added to the explanations of processes of defeminization, which include the influence of changing cropping patterns, the transformation of land-uses, increasing mechanization, along with effects of remittances following male outmigration.

The qualitative approach adopted in the primary survey shows that feminization processes of Bangladesh and Nepal cannot be interpreted similarly. In Bangladesh, long-term migration to Gulf along with the growing incidence of nuclear families force poorer women to break through the cultural norms of gender division of work, while empowering richer women to engage in management of hired male laborers. In Nepal, younger couples migrating shifts the burden of work to the elderly and to some extent, the elderly.

6 Way Forward

This study opens up further scope for research on how the rural gender relations change due to the changing role of women in agriculture. The exact effects of agrarian distress, particularly following suicides by male farmers on left-behind women is an area that would also be relevant in connection to this work, particularly in the Indian part of the EGB. Finally, the study leaves us with the general finding that both feminization and defeminization are complex processes which cannot be unidirectionally characterized as positive or negative developments in rural South Asia, either from the gender equity or economic progress perspective. It is of utmost importance that the processes behind such trends are analyzed in detail, part of which the study has contributed to. However, these complex processes need to be followed up by detailed research based on systematic primary surveys representative of sub-regions, to inform policymakers so that enabling interventions can promote gender equity based on women's meaningful engagement in agriculture in the region, rather than a one-size-fits-all approach.

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