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Employment Participation of Rural Women in Punjab: A Need for Policy Retrospect

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CDEIS Policy Brief Series on Punjab Economy

The COVID-19 pandemic has shaken the economies globally and added to the existing problems and their intensity like climate change, poverty, unemployment, migration, education, and of course, health. Developing economies have suffered even more due to their vulnerabilities to such sudden and large shocks. India is no exception to this trend and has regional variations in the impact of COVID-19 as there is much disparity and specificity in the levels of development of state economies. Punjab being an agriculturally grown state though still highly dependent on its agriculture and rural non-farm economy for significant proportion of its population and their livelihoods in the presence of public resource crunch has also faced this COVID-19 onslaught while being in economic, social and environmental crisis.

In this context, it was thought fit to get an independent set of policy directions from scholars in their respective domains based in Punjab, outside Punjab and even overseas to encourage public policy debate in and outside the state about the nature and magnitude of Punjab's economic and developmental crisis and the COVID-19 implications for it and explore possible ways forward to make the economic and social systems of the state move out of the situation of economic and policy inertia.

The policy briefs in this series numbering more than 20 examine issues ranging from agricultural sustainability, environmental and market aspects of the agricultural systems to allied sector and informal and small-scale sector livelihoods including dairy and MSMEs. The marginalised group livelihoods like women, schedule castes, and farm labour and other rural and migrant workers also get adequate attention. The sectors of health and education are also examined. On the fiscal front, institutional credit for recovery and revenue of the state post-GST are analysed. The larger aspects of governance, federalism and diaspora also get coverage as contextual and overarching themes.

We hope that these briefs would serve to encourage more informed debate and discussion in the interest of the betterment of the state economy and society to aid post-COVID recovery and medium and long-term sustainable development policy making.

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Abstract

Economic policy in India is governed by the neoclassical growth theory as growth being an answer to all problems. This has led to design of policies that focuses on expansion of economic activity in urban areas. The underlying assumption is that economic activity in rural areas will gear up with trickling down of benefits sourced in urban areas. This oversimplified understanding of the economy has led to a lopsided development where the gap between rural and urban areas has been widening. Employment of rural women is one of the biggest casualties of this growth policy.

Rural women in Punjab, one of the most developed states, have been bearing the brunt of current economic policies. The prevailing gender norms restrict women from traveling outside their villages for work. While men migrate or travel to urban areas for work, women in rural areas have largely become unemployed or underemployed, given the dearth of employment in rural areas. Findings of the primary survey, conducted in rural areas of Punjab, show that the majority of women are willing to work if work is available within the village. The growth policies focused on urban areas has not only led to adverse employment outcome for these women, but also has kept a large share of workforce out of productive employment.

COVID-19 pandemic has further hurt the employment prospect of women. The initial trends suggest that women's employment is more severely hit than their male counterparts. The governments are increasingly using the same set of policies to fight the economic fallout of the pandemic. Such policies are unlikely to benefit women in rural areas. The pandemic has further increased their cost of travel. In addition to the cost of breaking social norms, they have to risk the infection to reach urban areas for work. The increased restrictions on public transport have increased the monetary cost of travel. In such a scenario, women are likely to find the cost of travelling to urban areas for work more than the expected earnings. The economic policy, for an inclusive development, must focus on creating infrastructure and businesses, especially those which can employ women, to create jobs in rural areas. Such a policy will not only create better employment opportunities in rural areas but will also lead to higher growth and faster recovery.

Employment Participation of Rural Women in Punjab: A Need for Policy Retrospect

Ashapura Baruah and Indervir Singh

1. Introduction

Neoclassical macroeconomic and growth models consider growth as an answer to all economic problems. The underlying assumption of these models is that benefits of growth created in urban formal sector will trickle down creating employment in urban and rural areas. The productivity and consequent wage differences in urban and rural areas will result in movement of capital to underdeveloped areas and labour to urban and developed areas. This movement of capital and labour will result in higher growth and generate better job opportunities everywhere.

These models generally ignore the social and economic constraints faced by people. Even those models that incorporate market imperfections like search cost (Diamond 1989) are not useful in understanding the implications of social institutions like gender norms. Governed by these models, the economic policies in India in the last three decades have led to an excessive focus on expansion of economic activity (barring a few policies like the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), 2005). These policies have led to a lopsided development where growth figures do not match the employment data (Abraham 2017). Employment of rural women is one of the biggest casualties of these growth policies (Fletcher, Pande, and Moore 2017). This is reflected in their low workforce participation and concentration in low paying occupations in rural areas (Baruah 2016; Chowdhury 2011; Mazumdar and Neetha 2011).

Even high growth of agricultural sector is unable to improve the female labour force participation in rural areas. Punjab, one of the most agriculturally developed states in India, have experienced a decline in

employment opportunities for females over time (Baruah and Singh 2020). Fall in demand for labour in rural areas coupled with gender norms forced them to stay unemployed or underemployed (this point will be discussed in the next section).

The ongoing COVID-19 (corona virus disease 2019) pandemic is likely to further worsen the employment prospects of women. The initial trends suggest that women's employment is more severely hit than their male counterparts (Deshpande 2020). The governments are continuing with similar growth-centric policies to fight the economic fallout of the pandemic. The present paper re-examines these policies to assess their efficacy in generating employment for women in rural Punjab in times of pandemic. It is argued that such policies are unlikely to improve employment prospect of rural women and will only delay the overall recovery of the economy. It offers policy suggestion to improve employment prospect of rural women.

The paper is divided into four sections. The second section provides an overview of employment changes among women in rural Punjab since the Green Revolution. It discusses how the growth-centric policies have resulted in unemployment or underemployment among rural women in Punjab. The third section highlights the severity of employment problem in rural Punjab. The fourth section analyses the major policy measures taken by the central and the Punjab government and probes whether these policies can make any difference for rural women. Policy implications are discussed in the last section.

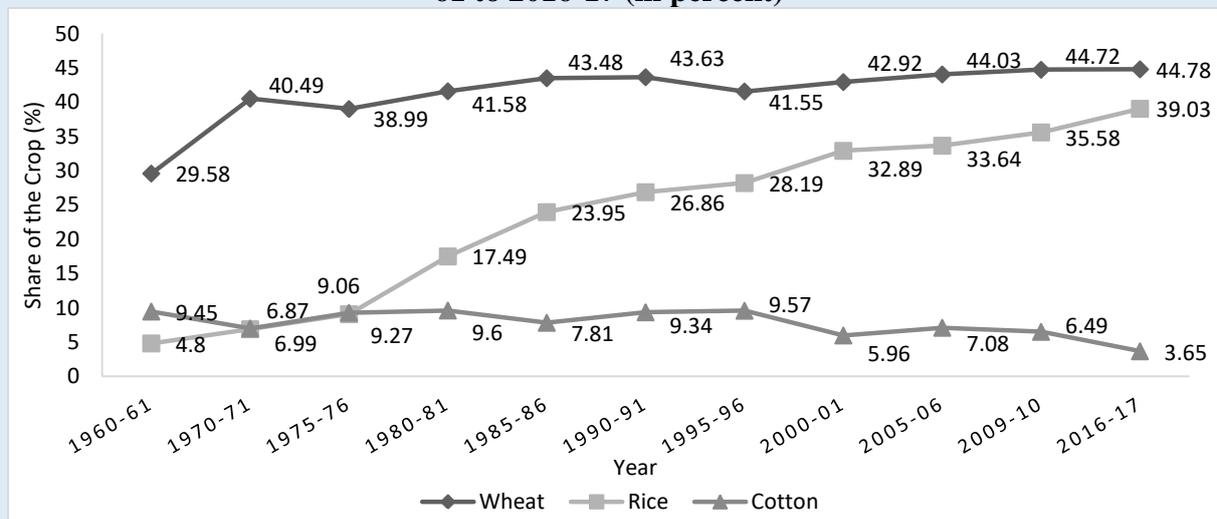
2. Agricultural Development and the Employment Change in Rural Punjab¹

The employment opportunities in rural areas are intrinsically linked to agricultural development. Therefore, challenges and opportunities for employment among rural women need to be understood in the context of changes in the agricultural sector. The major changes in the agricultural sector in Punjab came in the mid-1960s. Punjab witnessed a rapid diffusion of the green revolution technology in mid-1960s resulting a spurt in its agricultural growth. The adoption of an intensive system of cultivation led to significant productivity increase. Biochemical and mechanical technology played a major role in intensification of cultivation. The adoption of biochemical technology, like high-yielding varieties (HYV), chemical fertilizers, and pesticides, enhanced crop productivity. Mechanical technology initially came in the form of increased number of pump sets for irrigation, use of tractors for tilling and use of threshers. Over the years, Punjab saw increased use of machines in sowing and harvesting.

Punjab had just eight pump sets per one thousand hectares in 1962 which increased to 307 per thousand hectares in 2017

(Baruah and Singh 2020). It led to a large expansion in irrigated area and surge in the use of groundwater for irrigation. By 2017-18, nearly 71 percent of the net irrigated area in Punjab was irrigated using pump sets (GoP 2018). The gross cropped area under irrigation increased from 58 percent in 1962-65 (Bhalla et al. 1990) to 98.9 percent in 2015-18 (GoP 2018). Similarly, the number of tractors increased from 2.4 per thousand hectares in 1961 to 79 per thousand hectares in 2018. Use of tractors brought larger area under cultivation and raised the cropping intensity. However, most of the increase in cropping intensity and gross cropped area came in the first 25 years of the green revolution. Cropping intensity in Punjab went up from 129 percent in 1962-65 to 178 in 1990-91 and to 189 percent in 2015-18 (Bhalla et al. 1990; GoP 2018). The gross cropped area increased by 60 percent from 1960-61 to 1990-91 (Bhalla et al. 1990; GoP 2018). The increase was much smaller in the later years. During the 1991-92 to 2017-18 period, the gross cropped area had just 4 percent increase (GoP 2018). These trends suggest relatively minor change in cropping intensity and gross cropped area after 1990-91.

Figure 1: Share of Gross Cropped Area under Wheat, Rice and Cotton in Punjab, 1960-61 to 2016-17 (in percent)



Source: Singh et al. (2014); Statistical Abstract of Punjab 2018

Wheat and rice benefited the most in the initial years of green revolution. The yield in wheat, which was growing at two percent from 1952-53 to 1964-64, grew at 2.6 percent from 1967-68 to 1984-85 (Bhalla et al. 1990). The improvement in yield of paddy was even higher. The growth of its yield increased from 1.7 percent to 5.7 percent in the same period. During the 1960-61 to 1985-86 period, the area under wheat and rice increased from 29.52 percent and 4.8 percent to 43.48 percent and 26.86 percent, respectively (Figure 1). The productivity of other crops also increased over time. Between 1981-82 and 2011-12, the productivity of cotton, wheat and paddy, and cotton increased by 434.8 percent, 61 percent, and 98.1 percent, respectively. Despite the high growth in per hectare yield of cotton, the frequent crop failures due to bollworm resulted in farmers shifting to paddy cultivation in the 1990s (Gill and Singh 2006). By 2015-16, about 84 percent of the gross cropped area in Punjab was under two crops, wheat, and rice (Figure 1).

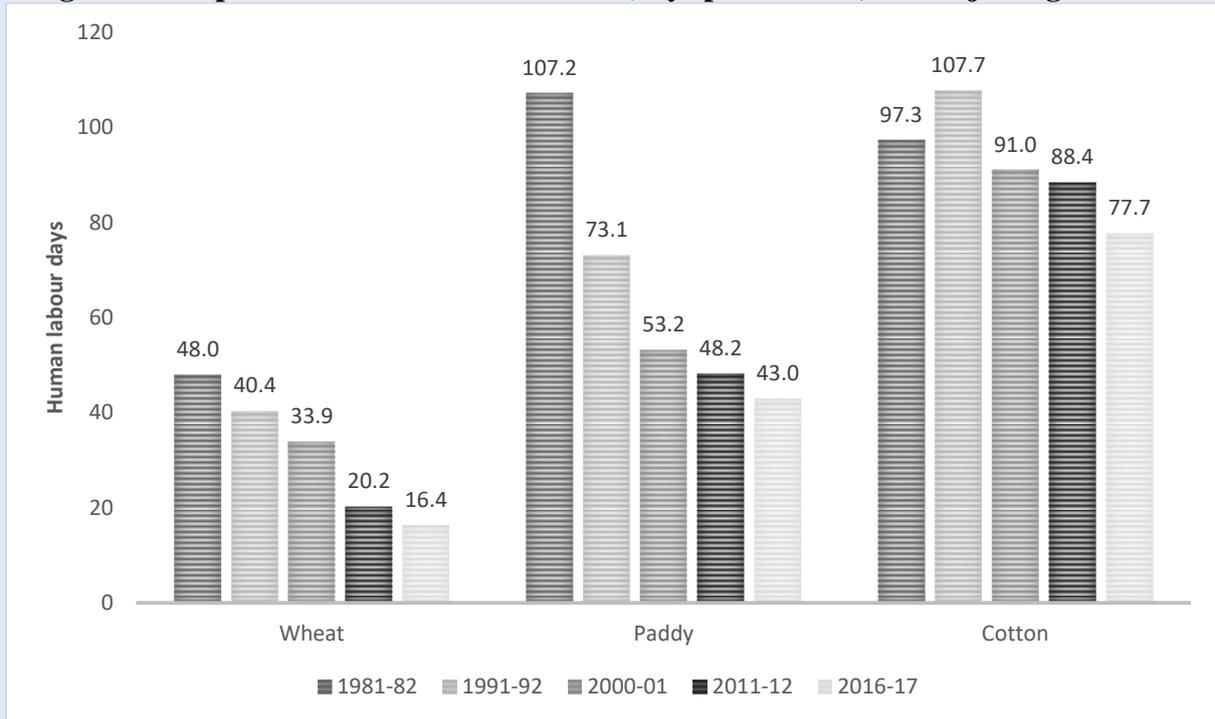
Based on the trend in labour use, the period of agricultural growth can be divided into two phases. The first phase, from the mid-1960s to mid-1980s, observed an increase in labour use. However, the trend was reversed in the second phase, the period after the mid-1980s. These trends were associated with the nature and extent of mechanisation in agriculture. While tractor use was associated with a decline in labour use in 1971-72, tubewell irrigation had offset its negative impact (Agarwal 1981). As a result, mechanisation had an effect of increasing labour use. Prihar and Sidhu (1984) found that fully mechanised farms employed 10411 person-hours of labour per farm in 1975-76 compared to 8342 person-hours of partly tractor and partly bullock operated farms and 7177 person-hours of fully bullock operated farms. A large increase in gross cropped area due to use of tractors and ground water irrigation from 1962-65 to 1990-91

(as previously pointed out) was the main reason behind this trend.

Demand for female labour was relatively lower even before the green revolution. They were mostly engaged in sowing and harvesting activities. Both the activities remained largely unaffected during the first phase of mechanisation. An analysis of the wheat crop by Agarwal (1981) found harvesting and sowing to be mostly manual in 1971-72. Women contributed nearly 19 percent of the labour time in sowing and 19 percent of the labour time in harvesting then. These findings suggest that female labour was mostly unaffected by the changes during this period.

The second phase saw a decline in labour use in agriculture. Mechanisation started replacing labour engaged in sowing and harvesting in this period. Labour use in agriculture declined from 1089 man-hours per hectare in 1985-86 to 840 man-hours per hectare in 2006-07 (Baruah and Singh 2020; Devi et al. 2013). During the same period, tractor use rose from 14.01 hours to 31.83 hours per hectare and the use of combine harvester increased from 0.13 hours to 1.89 hours per hectare. As a result, labour use declined for all crops. During the 1981-82 to 2016-17 period, wheat and paddy cultivation had 66 percent and 60 percent decline in person-days per hectare, respectively (Figure 2). While labour use remained high for cotton crop with a smaller decline (about 20 percent from 1981-81 to 2016-17), a large shift in area under cotton to paddy cultivation in the mid-1990s (as discussed earlier) led to a much larger drop in demand for labour.

Figure 2. Crop-wise use of Human Labour (days per hectare) in Punjab Agriculture



Source: Toor, Bhullar, and Kaur (2007); The Commission for Agricultural Costs & Prices, various reports

Increased use of machines in sowing and harvesting and a shift away from cotton crop significantly lowered the demand for labour in agriculture. The employment of women suffered the most due to this change. It led to most women becoming unemployed or underemployed. Baruah (2018), in a primary survey conducted in 2015, found that 49 percent of the Dalit women in working age (age 15-59 years) and 26 percent of the non-Dalit women were engaged in one or more agricultural activities in the district of Mansa (cotton is one of the main crops in the district). While Daljit women worked for 46 days in agriculture, the average was 36 for non-Dalit women. Only five percent of the Dalit women got more than 100 days of work in agriculture with a maximum of 125 days in a year. None of the non-Dalit women, in the sample, reached 100 days of work in agriculture. Even cotton, which is a relatively labour-intensive crop, provided merely 35 days of work to Dalit and 22 days of work to non-Dalit women.

3. Female Labour Force Participation in Rural Punjab

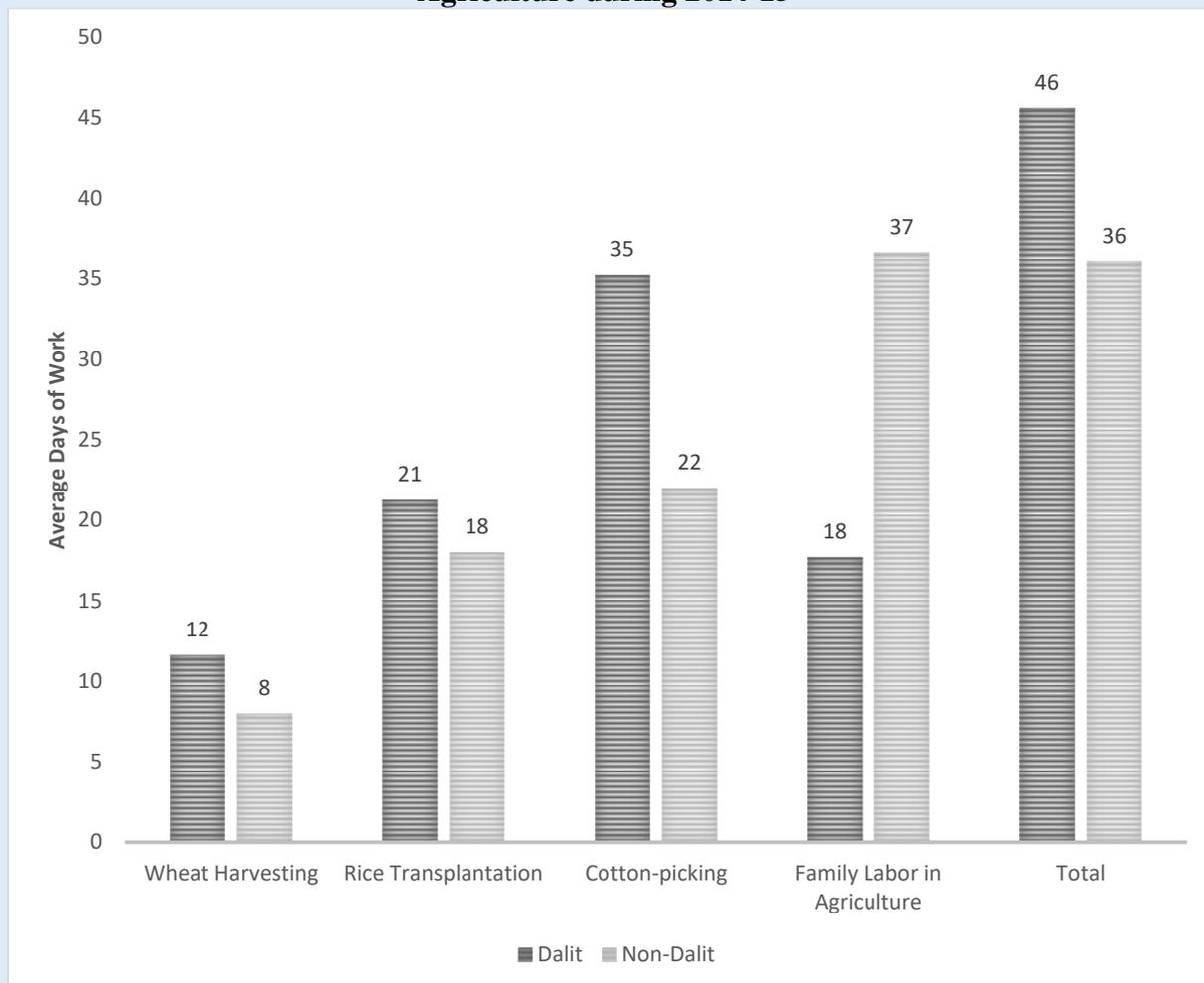
The effect of reduced demand for labour can be seen in changes in female labour force participation rate (FLFPR). The usual status shows rise in FLFPR from 34.7 percent in 1993-94 to 48.5 percent in 2004-05 (Table 1). However, it showed a worsening trend in the later years. FLFPR declined to 32.9 percent in 2011-12 which further fell to 15.4 percent in 2017-18. This is much smaller than male labour force participation rate which was more than 78 percent for any year (Baruah and Singh 2020; NSSO 2019).

However, a deeper look at their status shows that the problem is much severe than observed in the usual status. The share of females in principle status lies between 5.4 percent and 6.6 percent. It means that during the 1993-94 to 2011-12 period, the share of women, who were gainfully employed for the most of year, never crossed 6.6 percent (the similar figure is not available for 2017-18 due to non-availability of NSS unit-level data).

The rest of the women were underemployed (had subsidiary status). Even in 2004-05, when FLFPR reached

48.5 percent, more than 86 percent of the working women were underemployed.

Figure 3: Activity-wise Average Days of Work that Women have Performed in Agriculture during 2014-15



Note: The averages are based on data of women who were engaged in that particular activity.
Source: Baruah (2018)

Table 1: Female Labor Force Participation Rate by Work Status in Rural Punjab, age 15-59 years

Year	Usual Status [#]	Principal Status	Subsidiary Status
1993-94	34.7	5.4	29.3
1999-00	44.9	6.0	38.9
2004-05	48.5	6.1	42.4
2011-12	32.9	6.6	26.3
2017-18	15.4	-	-

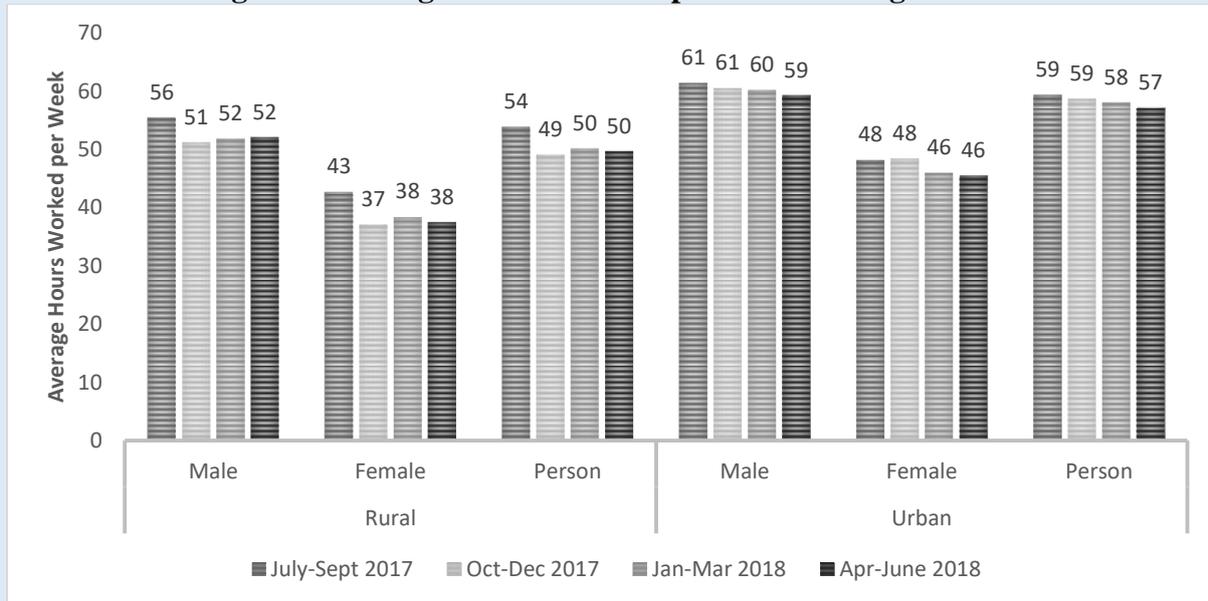
Note: # Usual status includes all those who have been workers under either principal status or subsidiary status. Usual status is also the labour force participation rate in this case.

Source: Computed from NSS unit-level data, various years and NSSO (2019)

Data on average hours worked per week during 2017-18 also confirms the lack of employment opportunities for rural women. Both men and women in rural areas worked lesser hours throughout the year (Figure 4). Working hours per week

were the lowest for rural females. Rural working women worked 13 to 14 hours less per week than their male counterparts and 5 to 13 hours less than urban women. The gap between rural women and urban men was 18 hours or more per week.

Figure 4. Average Hours Worked per Week during 2017-18



Source: NSSO (2019)

Baruah (2018) found that total days of employment hardly ever crossed the six-month benchmark for female workers in total areas to call them gainfully employed. Even among Dalit women, who constitute the most deprived section, only 0.8 percent was working more than 180 days. MGNREGS provided merely 22 days of work to Dalit and 14 days of work to non-Dalit women. A high share of these unemployed and underemployed women (about 66 percent) expressed their willingness to work. They stayed unemployed due to unavailability of work within the village. These women, due to prevailing gender norms, are unable to travel to urban areas for work, unlike their male counterparts.

NSSO (2019) found that female workers in rural Punjab earned significantly less in 2017-18. Self-employed and regular salaried females earn about 35 percent and 70 percent less than rural males in the

respective categories. Even urban women in these two categories earn 43 percent and 95 percent more than rural females. On an average, the wage rate for female casual workers (other than in public works) was 24 percent less than rural males.

The prevailing situation is the outcome of the existing policy that ignores social institutions and expects growth in itself to take care of employment. Despite the failure of agricultural growth to generate employment, many experts still emphasise on agricultural growth and diversification to be the solution to employment problem in rural areas (Toor et al. 2007). It is often overlooked that the extent of mechanisation (which is increasing over time) has left little scope for such policies to be effective. Therefore, rural areas require policies that inherently consider women's employment indispensable.

4. Lacklustre and Inadequate Response to Pandemic

Fear of COVID-19 and the lockdown have led to decline in economic activity and employment in India. IMF (2020) predicted 4.5 percent contraction and a slower recovery of the Indian economy in 2020. The data from the Centre for Monitoring Indian Economy (CMIE) found an increase in unemployment to 25.5 percent by 5 May 2020 from 7.4 percent in the pre-lockdown period (Bertrand, Krishnan, and Schofield 2020). The pandemic has hurt the employment prospects of women the hardest. Deshpande (2020), using the data collected by CMIE in April 2020, found that the loss of employment was 20 percent higher among women compared to their male counterparts.

The situation in rural areas is likely to be worse. The rural workforce could get more work during the paddy transplanting season due to non-availability of migrant labour (Gupta 2020). However, it only provided work for a few days. The work was shared by male and female labour which meant that only a part of the work went to female labour. The male labour was finding it hard to get work due to lockdown and the fear of COVID-19. Also, the wage controls imposed by the panchayats limited their earnings (Gupta 2020).

Notwithstanding the availability of work in paddy cultivation, the employment prospect of women is likely to have suffered serious damage because of the pandemic. Demand for non-essential goods and services dropped as the fear of COVID-19 has caused people to cut down their expenditure. Increased cost of travel (due to restrictions on public transport and higher fuel prices) and the fear of infection have made travelling to urban areas for work less attractive. These changes mean less work for female workers during the pandemic. COVID-19 outbreak has also

triggered some long-term changes in the labour market. The current shortage of labour for paddy cultivation due to pandemic has given a big push to mechanisation and is likely to permanently lower the demand for labour in agriculture (Kaur 2020; The Hindu 2020). Female workers, who have little scope to secure employment outside the agricultural sector, will be the most affected by this change.

The government policies, in the face of COVID-19 pandemic, have so far done little to ensure female employment in rural areas. Both the central and the Punjab government have introduced various policies to curtail the negative impact of the pandemic. Government of India has come up with a relief package which includes transfers of Rs. 1500 (over three months) in the Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts of 200 million women, Rs. 1.7 lakh crore for free ration, Rs. 5.94 lakh crore of collateral-free credit to micro, small and medium scale enterprises (MSME), Rs. 2 lakh crore of concessional credit to farmers, an investment of Rs. one lakh crore in agricultural infrastructure, and Rs. 40000 crores of additional allocation to MGNREGS (Balu 2020).

The government of Punjab, in addition to distribution of free ration to households, has transferred Rs. 3000 each to the accounts of 3.2 lakhs registered construction workers (Singh and Kumar 2020) and announced a relief package for the real estate sector (GoP 2020). To revive economic activity and boost investment, the government of Punjab has rolled back hike in the minimum wage and increased the working time from 8 hours to 12 hours (Singh, Maharathy, and Choudhury 2020). To attract investment, the government of Punjab has also redefined the classification of a 'large factory' by changing the labour requirement for it from 'more than 500

workers' to 'more than 1000 workers' (PTI 2020).

The above-mentioned policies of the central and the state government are focused on creation of growth, especially in urban formal sector. These policies pay little attention to female employment or even overall employment and working conditions and terms. Some of the policies, such as increase in working hours, is likely to hurt female employment instead of facilitating it (see Bardhan 2020).

Among all relief package and policies, additional funds for MGNREGS are the only measure that is directed to rural employment. While it is a welcome step, it has limited capacity to create employment. For example, MGNREGS, in the financial year 2019-20, provided 48.4 days of work per household for the expenditure of Rs. 68020 crores (GoI 2020). Based on these figures, the additional allocation may only provide an additional 28 days of work per household in India. The benefits of these additional funds are likely to be smaller for Punjab. In 2019-20, about 1.1 percent of the total funds were allocated to Punjab (nearly 2.1 percent of the rural population of India resides in Punjab). It provided 31.2 days of work per household. The days of work per household in Punjab were 36 percent less than all India figure. Assuming a similar allocation of funds, 100 percent utilisation and no additional households seeking work, the additional funds will just add 18 days of work per household in Punjab. This figure is also an optimistic estimate as it assumes that no new household will seek work under MGNREGS which is highly unlikely due to the present state of the economy. With a large increase in the number of households seeking work under MGNREGS, the days of work may even decline. Moreover, the additional funds for MGNREGS are a temporary measure with no effect on sustaining employment and earning of women.

5. Policy Implications

The discussion in previous sections shows that the existing policies are grossly inadequate to promote female employment in rural Punjab. These policies mainly focus on increasing agricultural growth. Even if the policies could achieve high growth in agricultural sector, it will be accompanied by higher mechanisation and is unlikely to generate employment in rural areas throughout the year. Policies which focus on agricultural growth, such as investment in agricultural infrastructure, may not be a solution to employment problem in rural Punjab. Employment programmes like MGNREGS also cannot address this issue. Households in Punjab are getting just 31 days of employment under MGNREGS. Even if the government could achieve the target 100 days of work in a year, it would constitute merely one-third of the year.

The dearth of employment opportunities in rural area is clear for the fact that even rural males are working for lesser hours (Figure 4). Migration and the daily commute to urban areas cannot solve this problem either. Baruah (2018) found that women often find it difficult to commute to urban areas for work in Punjab due to economic and social constraints. Higher dependence on urban areas to create growth and employment leads to urban-rural inequalities and exclusion of those who cannot travel to cities for work.

Hence, the rural economy needs a sustainable solution to combat unemployment. The economic policy in Punjab must centre on creating infrastructure and businesses in rural areas that can provide gainful employment. Punjab needs policies which facilitate the establishment of MSMEs in the rural areas by easing the norms for their establishment and ensuring faster clearance of the project. The preference should be given to those industries which employ women workers. Businesses, which can employ

unskilled and semi-skilled labour after a short training, may prefer to invest in rural area if the government of Punjab commit itself to providing required infrastructure

Note:

1. The structure of argument in this section is based on Baruah and Singh (2020).

References

- Abraham, Vinod. 2017. "Stagnant Employment Growth: Last Three Years May Have Been the Worst." *Economic and Political Weekly* 52(38):13–17.
- Agarwal, Bina. 1981. "Agricultural Mechanisation and Labour Use: A Disaggregated Approach." *International Labour Review* 120(1):115–27.
- Balu, Manjari. 2020. "Covid-19: India Uses Crisis to Bring-in Economic Reforms as Package." *The Peninsula Foundation*. Retrieved July 23, 2020 (<https://www.thepeninsula.org.in/2020/05/25/covid-19-india-uses-crisis-to-bring-in-economic-reforms-as-package/>).
- Bardhan, Pranab. 2020. "Labour Law Suspension: Hit The Workers When They Are Down." *Bloomberg Quint*, May 10.
- Baruah, Ashapurna. 2016. "Occupational Pattern and Workforce Participation of Women in Indian Rural Punjab: A Caste Perspective." *Millennial Asia* 7(2):153–83.
- Baruah, Ashapurna. 2018. "Changing Pattern of Dalit Women's Work in Contemporary Rural Punjab: Causes and Consequences." *Jawaharlal Nehru University, New Delhi*.
- Baruah, Ashapurna, and Indervir Singh. 2020. "Employment of Women in Rural Punjab: Deconstructing Agricultural Growth Policy." *Economic and Political Weekly* 55(26 & 27):29–35.
- Bertrand, Marianne, Kaushik Krishnan, and Heather Schofield. 2020. "How Are Indian Households Coping under the COVID-19 Lockdown? 8 Key Findings." Retrieved May 24, 2020 (<https://www.chicagobooth.edu/research/rustandy/blog/2020/how-are-indian-households-coping-under-the-covid19-lockdown>).
- Bhalla, G. S., G. K. Chadha, S. P. Kashyap, and R. K. Sharma. 1990. *Agricultural Growth and Structural Changes in the Punjab Economy: An Input-Output Analysis*. Washington, D.C.
- Chowdhury, Subhanil. 2011. "Employment in India: What Does the Latest Data Show?" *Economic and Political Weekly* 46(32):23–26.
- Deshpande, Ashwini. 2020. *The Covid-19 Pandemic and Lockdown: First Effects on Gender Gaps in Employment and Domestic Work in India*. Discussion Paper No. 30. Ashoka University, Department of Economics.
- Devi, Y. Latika, Jasdev Singh, Kamal Vatta, and Sanjay Kumar. 2013. "Dynamics of Labour Demand and Its Determinants in Punjab Agriculture." *Agricultural Economics Research Review* 26(2):267–73.
- Diamond, P. 1989. "Search Theory." Pp. 271–86 in *Allocation, Information and Markets*, edited by J. Eatwell, M. Milgate, and P. Newman. London: The New Palgrave.
- Fletcher, Erin K., Rohini Pande, and Charity Troyer Moore. 2017. *Women and Work in India: Descriptive Evidence and a Review of Potential Policies*. Working Paper No. RWP18-004.
- Gill, Anita, and Lakhwinder Singh. 2006. "Farmers' Suicides and Response of Public Policy: Evidence, Diagnosis and

- Alternatives from Punjab.” *Economic and Political Weekly* 41(26):2762–68.
- GoI. 2020. “MGNREGA Dashboard.” Ministry of Rural Development, Government of India. Retrieved July 27, 2020 (http://mnregaweb4.nic.in/netnrega/all_lvl_details_dashboard_new.aspx).
- GoP. 2018. *Statistical Abstract of Punjab, 2018*. Publication No. 958. Economic and Statistical Organisation, The Government of Punjab.
- GoP. 2020. “The Government of Punjab: Press Release.” Directorate of Information and Public Relations, Punjab, India. Retrieved July 23, 2020 (<http://www.diprpunjab.gov.in/?q=content/major-relief-real-estate-sector-capt-amarinder-announces-stimulus-package-cope-covid-impact>).
- Gupta, Vivek. 2020. “Punjab: Labour Shortage in Lockdown Reveals Fissures in Farm Economy Ahead of Paddy Sowing Season.” *The Wire*. Retrieved July 23, 2020 (<https://thewire.in/agriculture/punjab-paddy-farmers-labourers>).
- IMF. 2020. *World Economic Outlook Update, June 2020*. International Monetary Fund.
- Kaur, Deepkamal. 2020. “Labour Crisis, Mechanised Sowing Picks up in Punjab.” *The Tribune*, June 10.
- Mazumdar, Indrani, and N. Neetha. 2011. “Gender Dimensions: Employment Trends in India, 1993-94 to 2009-10.” *Economic and Political Weekly* 46(43):118–26.
- NSSO. 2019. *Periodic Labour Force Survey (PLFS), 2017-18*. National Statistical Office, Ministry of Statistics and Programme Implementation, The Government of India.
- Prihar, R. S., and D. S. Sidhu. 1984. “Impact of Mechanization on Labor Employment in Punjab Agriculture.” *Indian Journal of Industrial Relations* 19(3):379–87.
- PTI. 2020. “Punjab Govt Amends Law to Facilitate Large Industrial Units, Create Job Opportunities.” *News18*. Retrieved July 22, 2020 (<https://www.news18.com/news/india/punjab-govt-amends-law-to-facilitate-large-industrial-units-create-job-opportunities-2682457.html>).
- Singh, Inderjeet, Sukhwinder Singh, and Lakhwinder Singh. 2014. *Punjab’s Economic Development in the Era of Globalisation*. Delhi: LG Publishers.
- Singh, Indervir, and Naresh Kumar. 2020. “Punjab’s Fight Against COVID-19: Hopes, Fears and the Balancing Act.” *University Practice Connect*, Azim Premji University. Retrieved May 27, 2020 (<https://practiceconnect.azimpremjiuniversity.edu.in/punjab-fight-against-covid-19-hopes-fears-and-the-balancing-act/>).
- Singh, Rajdev, Shruti Jena Maharathy, and Pathik Choudhury. 2020. “India: State-Wise Relaxation Of Labour Legislations Amidst COVID-19.” *Mondaq*. Retrieved July 22, 2020 (<https://www.mondaq.com/india/employment-and-workforce-wellbeing/946064/state-wise-relaxation-of-labour-legislations-amidst-covid-19->).
- The Hindu. 2020. “Farmers in Punjab to Plant around 25% Paddy with DSR Technology.” *The Hindu*, June 7.
- Toor, M. S., A. S. Bhullar, and Inderpreet Kaur. 2007. “Agriculture-Led Diversification and Labor Use in Punjab: Potentials and Constraints.” *Indian Journal of Labor Economics* 50(4):737–46.

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