

## **Sex Ratio, Literacy Rate and Work Participation of Female in Dakshin Dinajpur District of West Bengal: Spatio-Temporal Analysis**

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**Abstract:** The participation of women in the labour force varies considerably across developing countries. The female workers have much lower participation rates than their male counterparts and hence comprise a marginalized section. The participation of women in workforce is the outcome of various economic and social factors. Work participation rate of women has directly connected to the development of society. So if the rate of workforce participation will increase, naturally it will enhance the level of autonomy in women. Using data from Census of India 2001 and 2011 this paper attempts to analyze the spatial pattern of sex ratio, literacy rate, and female participation rate in Dakshin Dinajpur district of West Bengal. Female works participation is a driver of growth and therefore, participation rates indicate the potential for a country to grow more rapidly.

**Key Word:** Sex ratio, Literacy rate, Female Work participation.

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### **I. INTRODUCTION**

Women play a central role in the overall progress of a country as they constitute nearly half the human resources of India. It is highly desirable for women to take part in education and employment for equity and balanced development of the country. Women workforce participation rate is one of the most important factors to indicate women's status and empowerment. Women's Participation in economic activities is essential to enhance their status in society. The increase in the female literacy rate alone cannot change the scenario of participation of women in the workforce, because the socio-cultural factors have a complex role in this case. Although a large number of women participate in out-door economic activities their economic role is cannot be recognized due to the traditional middle-class perception of women being confined to the home and the family (Nayak & Ahmad, 1984). Through the female literacy rate of West Bengal was higher than rest of the country but the female participation rate in economic activity was not so impressive (Bedajna & Basu, 2016). The female participation ratio in different economic activities indicates the level of progress of society because human development in the modern world considers women as active agents rather than passive beneficiaries (Mutsuddi, 2015). In this study, an attempt has been made to analyze the sex ratio, literacy rate, and female participation rate of Dakshin Dinajpur district. India is a socially constructed country, where both economic and socio-cultural factors determine the level of female employment. The occupational structure also influences the socio-economic development of an area.

### **II. OBJECTIVES OF THE STUDY**

- 1) To analyze the spatial pattern of sex ratio and literacy rate in Dakshin Dinajpur district in 2001 and 2011.
- 2) To identify female work participation rate in Dakshin Dinajpur district in 2001 and 2011.
- 3) To know the Spatio-temporal pattern of female main workers in Dakshin Dinajpur district in 2001 and 2011.

### **III. DATABASE AND METHODOLOGY**

The present study is based on secondary data sources, obtained from Census of India (2001 & 2011) for the District of Dakshin Dinajpur (Primary Census Abstract and Economic table) for the analysis. Apart from these, several articles published in various National and International journals have also been consulted for the study. GIS mapping is used for showing the Spatio-temporal variation. Blockwise spatial variation by Choropleth maps has been prepared with the help of QGIS 3.14. Microsoft Excel also used to make the tables and graph.

In the present study, the following important socioeconomic indicators have been used

- a) Sex-Ratio,
- b) Literacy Rate,
- c) Workforce Participation Rate for:

1. Main Workers: The census of India defines the main workers as those who are worked for the major part of the reference period (six months or above) in any economic activity. According to the census of India, the main workers are classified in four categories of workers

- i. Cultivator,
- ii. Agricultural Labours,
- iii. Household Industry Workers, and
- iv. Other Workers

#### IV. STUDY AREA

Dakshin Dinajpur is a District of West Bengal located in the eastern part of India. The geographical location of Dakshin Dinajpur is located between 25°10' 55" N to 25°35' 55" N latitude and 88°09'07" E to 89°09'30"E longitude. The area of Dakshin Dinajpur is 2,219 Square Kilometre. The district headquarters is Balurghat town. It lies cushioned between Bangladesh on its east and south and district Uttar Dinajpur on its north. To its west lie, Uttar Dinajpur district, and a part of its southern border lies contiguous to Malda district. Dakshin Dinajpur district consists of 8 CD Block namely Balurghat, Hilli, Kumarganj, Tapan, Gangarampur, Kushmandi, Banshihari, and Harirampur. According to the 2011 Census Dakshin Dinajpur district has a population of 1,676,276, and population density is 755 persons per sq.

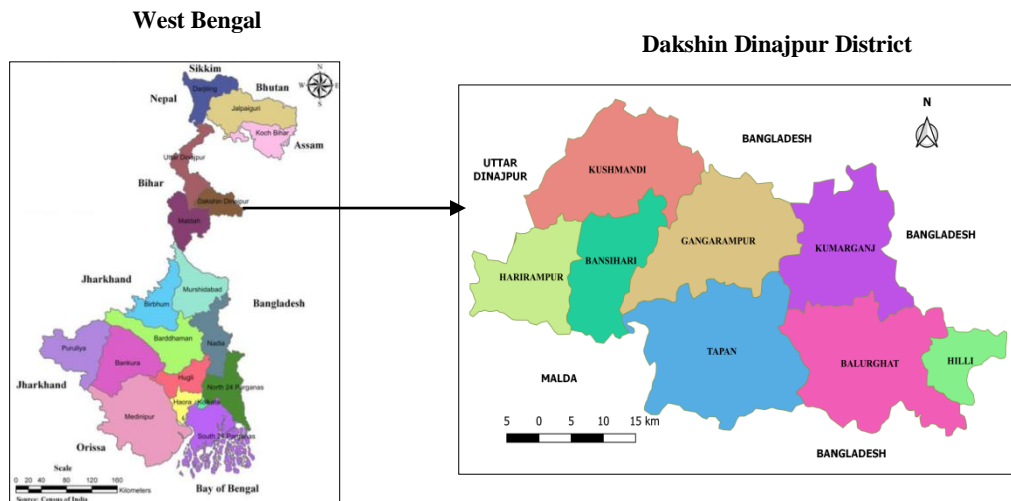


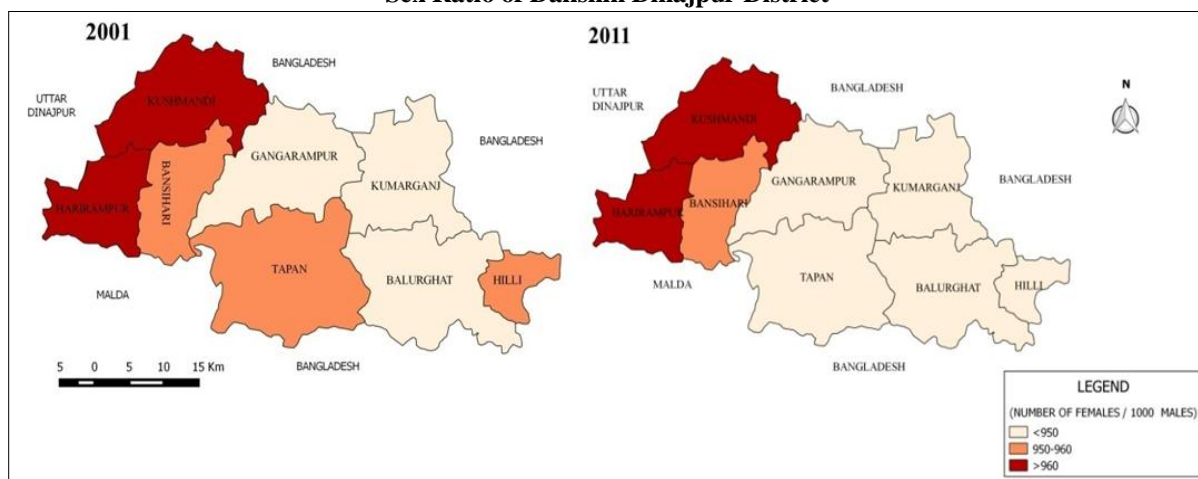
Figure 1: Location of the study area

#### V. RESULTS AND FINDINGS

##### a. Sex Ratio

Sex ratio is defined as the number of females per 1000 males in a population. The male to female sex ratio is calculated by dividing the number of males (all ages) by the number of females (all ages) and multiplying by 1000.

**Sex Ratio of Dakshin Dinajpur District**



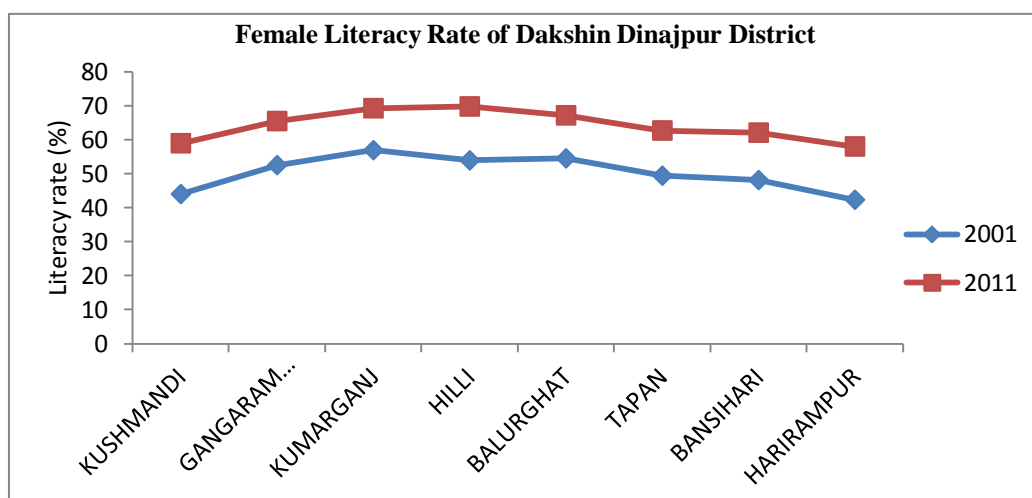
**Figure 2**

In 2001 the average sex ratio in Dakshin Dinajpur was 951 (Table 1), High sex ratio is found in (Figure 2) Harirampur and Kushmandi block whereas Hilli, Tapan, Bansihari block have moderate sex ratio. Kumarganj, Gangarampur, and Balurghat block came under low sex ratio.

In 2011 average sex ratio of Dakshin Dinajpur increased to 956 (Table 1). Harirampur and Kushmandi block have a high sex ratio (Figure 2). Moderate sex ratio is found in Bansihari. The remaining blocks come under low sex category. Hilli and Tapan block have moved from moderate to low category from 2001 to 2011.

**b. Literacy Rate**

Census of India defines literacy Rate as the percentage of literates in the age-group seven years and above. For different age-groups, the percentage of literates in that age-group gives the literacy rate.



**Figure 3**

A review of the growth of female literacy during 2001-2011 decade shows that all Blocks of this district achieved good progress. According to census data of 2011 (Table 1) average female literacy rate of this district has increased from 54.3% in 2001 to 67.01 % in 2011 with an increase of 12.71%. Data shows that in 2001 Kushmandi block has low literacy of females whereas Kumarganj block shows high female literacy. In 2011 Balurghat block represent high literacy while Harirampur block came under low female literacy. Hilli block improves significantly in decadal growth of female literacy.

**Table 1: Sex Ratio, Literacy Rate, Female Work Participation Rate of Dakshin Dinajpur District 2001 & 2011**

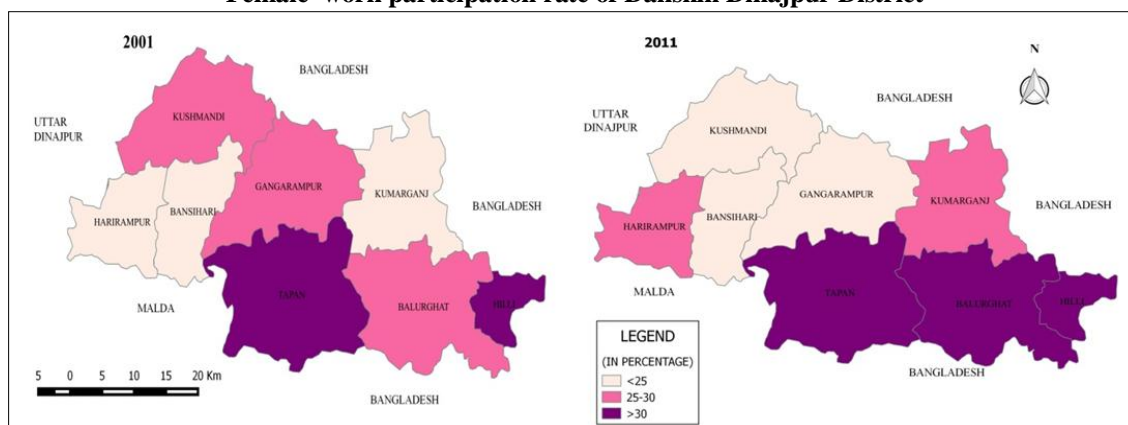
Sl. No	Blocks	Sex Ratio		Literacy Rate (%)		Female Work Participation Rate (%)	
		2001	2011	2001	2011	2001	2011
1	Kushmandi	964	981	44	58.95	26.9	19.81
2	Gangarampur	941	933	52.5	65.47	27.5	22.4
3	Kumarganj	946	942	56.9	69.25	17	25.72
4	Hilli	954	949	53.9	69.77	38.1	30.52
5	Balurghat	939	940	54.5	67.15	26.8	30.16
6	Tapan	953	949	49.4	62.69	31.9	30.78
7	Bansihari	952	958	48.1	62.06	23.8	23.3
8	Harirampur	964	982	42.3	58	23.8	25.28
Dakshin Dinajpur District		951	956	54.3	67.01	25.1	24.84

Source: Census of India 2001 and 2011

**c. Female Work Participation Rate**

Census of India defines Work participation rate as the percentage of total workers (main and marginal) to the total population.

**Female work participation rate of Dakshin Dinajpur District**



**Figure 4**

The economic situation of an area increases when work participation rate also increase. Total work participation rate of the Dakshin Dinajpur district is 41.94 percent. In 2001 the female work participation rate for the District was 25.1%, high main work participation rate are found in Tapan and Hilli block (Figure 4) while Moderate work participation rate is found in Gangarampur, Kushmandi, Balurghat block, and the lowest work participation rate are found in Bansihari, Harirampur, Kumarganj block. In 2001 lowest share of Total Female Worker was found in Kumarganj block whereas the highest share of female cultivators was found in Hilli block.

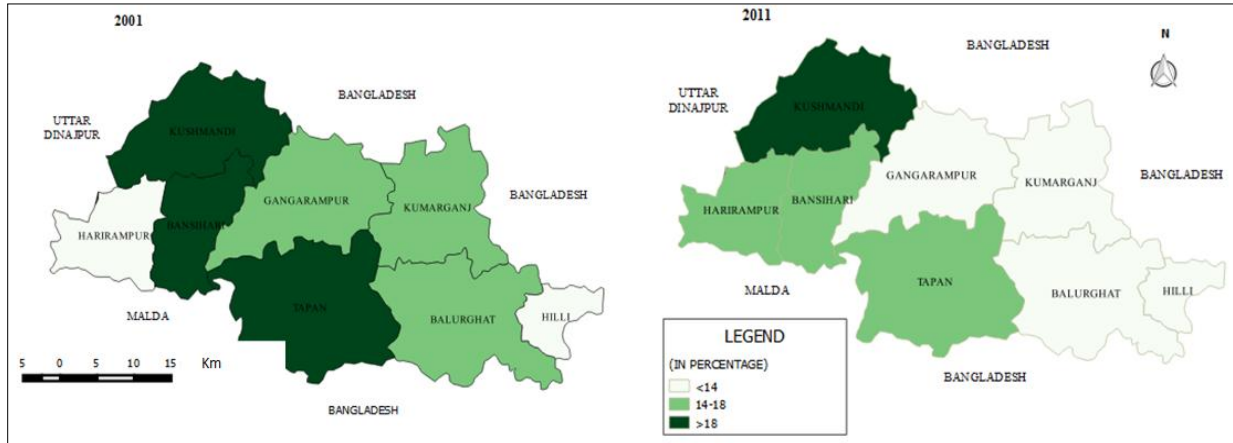
In 2011 female work participation rate of the study area slightly decreased to 24.84% (Table 1) the high work participation rate is found in Tapan, Balurghat, and Hilli block. Moderate work participation rate are found in Kumarganj and Harirampur block. In 2011 the lowest share of female cultivators was found in the Kushmandi block whereas the highest share of female cultivators was found in Tapan block.

Kushmandi, Gangarampur, and Tapan block experienced increase in female work participation from 2001 to 2011. Balurghat block shifted from moderate to high female work participation and Kumarganj and Harirampur block shifted from low to moderate category. Kushmandi and Gangarampur block declined from medium to low category in 2011. Kumarganj block experienced the highest increase in female work participation from 2001 to 2011.

**i. Female Cultivator**

Census of India defines cultivator who is engaged in cultivation of land owned or from government or from private persons or institutions for payment in money, kind or share. It does not include the plantation crops like- tea, coffee, rubber, coconut and betel nuts (areca). These workers are recorded under “other workers”.

**Female Cultivator of Dakshin Dinajpur District**



**Figure 5**

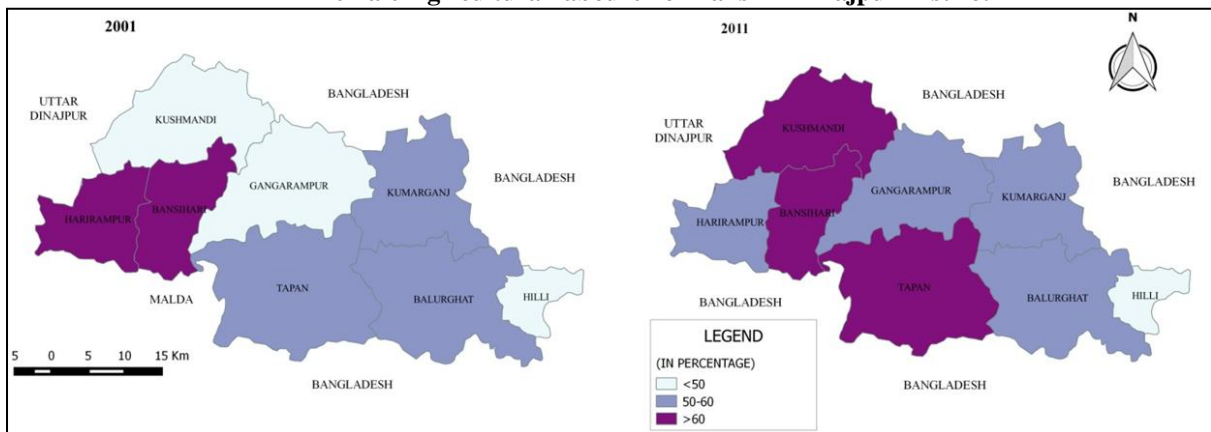
In 2001 the average female cultivators in Dakshin Dinajpur was 16.2 % (Table 2). The high concentrations of female cultivators are found in Kushmandi, Bansihari, and Tapan block. Gangarampur, Balurghat, and Kumarganj has moderate rate of female cultivators (Figure 5) whereas Hilli and Harirampur have lower rate of female cultivators. In 2001 the lowest share of female cultivators was found in Harirampur block whereas The highest share of female cultivators was found in Kushmandi block.

In 2011 average share of female cultivators in Dakshin Dinajpur decreased to 12.44% (Table 2). Kushmandi block has a high rate of female cultivators, Bansihari, Tapan, and Harirampur block came under the medium rate of female cultivators. Gangarampur, Balurghat, Kumarganj, and Hilli block have lower concentrations of female cultivators. In 2011 the lowest share of female cultivators was found in Hilli block whereas the highest share of female cultivators was found in Kushmandi block. Gangarampur, Kumarganj, and Balurghat block declined from medium to low category in 2011. Kushmandi block experienced the highest decrease in female work participation from 2001 to 2011.

**ii. Female Agricultural labourer**

Census of India defines Agricultural labourer who works on another person’s land for wages in cash or kind or share.

**Female Agricultural labourer of Dakshin Dinajpur District**



**Figure 6**

In 2001 the average female Agricultural Labourer in Dakshin Dinajpur was 50.2 % (Table 2), the high concentration (Figure 6) of female Agricultural Labourer is found in Harirampur and Bansihari block. Tapan, Kumarganj, and Balurghat are had moderate rate of female Agricultural Labourer whereas Hilli and Harirampur

have lower rate of female cultivators are found in Kushmandi, Gangarampur, and Hilli block. In 2001 the lowest share of female Agricultural Labourer was found in Hilli block whereas the highest share of female Agricultural Labourer was found in Harirampur block.

In 2011 average share of Agricultural Labourer in Dakshin Dinajpur increased to 53.26% (Table 2). Tapan block has a higher rate of female Agricultural Labourer. The high concentrations of female Agricultural Labourer are found (Figure 6) in Tapan, Kushmandi, and Balurghat block. Gangarampur, Harirampur, Kumarganj, and Balurghat block came under medium rate of female. The lowest share of female Agricultural Labourer found in Hilli block. Kushmandi, Gangarampur, and Tapan block experienced an increase in female work participation from 2001 to 2011.

**Table 2: Female Main Workers of Dakshin Dinajpur District 2001 & 2011**

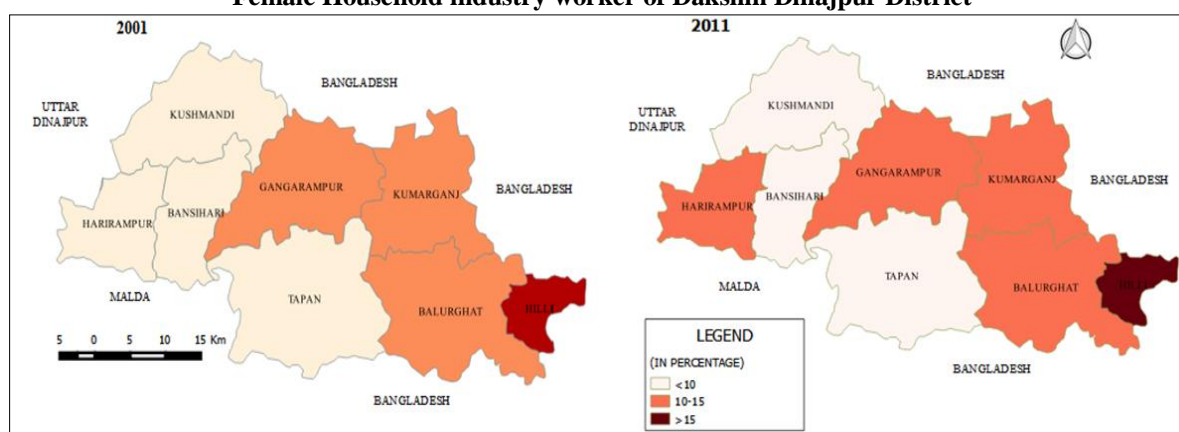
Sl. No	Blocks	Female Main Workers (%)							
		Cultivators		Agricultural Labourers		Household Industry Workers		Other Workers	
		2001	2011	2001	2011	2001	2011	2001	2011
1	Kushmandi	26.6	19.64	48.3	65.96	6.6	2.84	18.5	11.56
2	Gangarampur	15.1	11.74	48.3	58.48	12.6	10.25	24	19.53
3	Kumarganj	14.8	11.84	56.7	57.32	10.6	12.19	17.9	18.65
4	Hilli	13.5	9.09	33.1	36.62	16.3	30.89	37.1	23.39
5	Balurghat	14.9	12.11	56.2	51.14	11.3	11.25	17.7	25.5
6	Tapan	18.7	14.53	56.9	66.46	3.1	4.78	21.3	14.23
7	Bansihari	19	14.97	62	64.29	7.7	4.66	11.3	16.08
8	Harirampur	13.4	14.44	68.2	57.52	7.7	11.21	10.8	16.82
Dakshin Dinajpur District		16.2	12.44	50.2	53.26	9.6	9.83	23.9	24.47

Source: Census of India 2001 and 2011

### iii. Household industry worker

The activity of Household industry is related to production, processing, servicing, repairing or making and selling of goods.

**Female Household industry worker of Dakshin Dinajpur District**



**Figure 7**

The average share of Female household workers for the district was 9.6% in 2001 (Table 2) and this increased to 9.83% in 2011. Hilli block had higher concentration of this category of workers in 2001 and 2011. Tapan block had low concentration in 2001 and Kushmandi block in 2011 (Figure 7).

Harirampur block had shifted from low to moderate category between 2001 to 2011. All other blocks have no change in the groupings during the study period.

#### iv. Female Other workers

Census of India defines other workers who have been engaged in economic activity other than cultivator or agricultural labourer or worker in Household Industry.

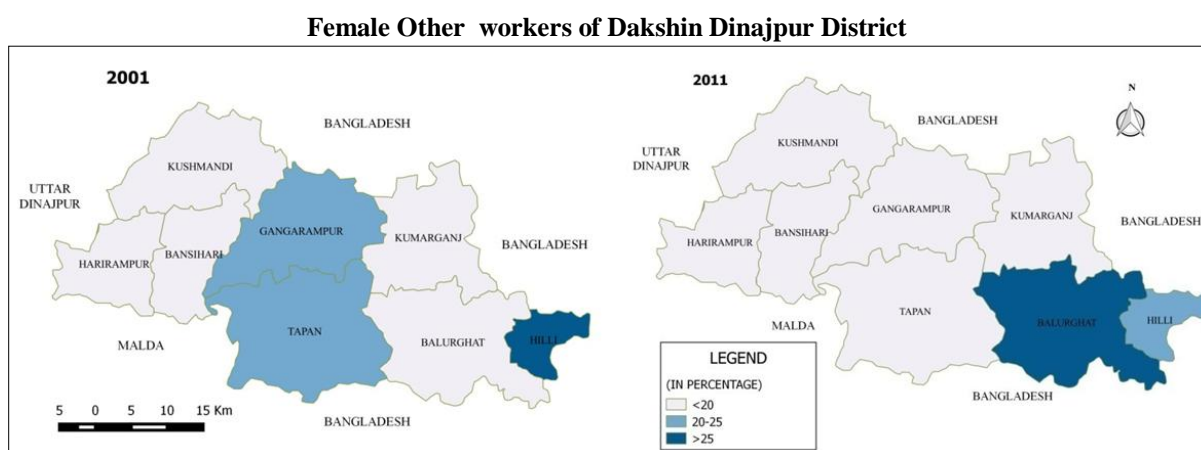


Figure 8

In 2001 the average female Other Workers in Dakshin Dinajpur was 23.9 % (Table 2), high concentration of female Other Workers are found (Figure 8) in Hilli block. Gangarampur, Tapan block have a moderate share of female other workers. All other block has a low rate in the female other workers.

In 2011 average share of female other workers in Dakshin Dinajpur increased to 24.47% (Table 2). Balurghat block has (Figure 8) higher rate of female other workers, only Hilli block comes under medium category of female other workers and remaining all blocks are in low category of female other workers. Between 2001 to 2011 Hilli block moves from high to moderate category, Gangarampur and Tapan experienced shifting from medium to low category and Balurghat Block shifted from low to higher share of female Other Workers.

## VI. CONCLUSION

It is clear from the above discussion that Sex ratio, literacy rate, and female workforce participation rate are considered as an indicator for women empowerment and their level of autonomy. For balanced regional growth, it is very essential to ensure maximum female participation in the main workforce to minimize gender inequality and also helps to reduce the dependency ratio of that region. Government programmes and policies alone cannot perform a miracle to change the situation overnight until we change ourselves. We must give up our gendered and orthodox mentality to ensure a healthy environment and workplace for women. Therefore, women's workforce participation is an essential element of inclusive and sustainable development. By enhancing the participation of women in the mainstream of society, either through sex balancing or by providing the opportunity to women to have higher involvement in workforce participation, we can rapidly change the picture of male dominance Society.

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