Regional Imbalances in the Levels of Socio-Economic Development: A Case Study of Malda District, West Bengal

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Abstract

The present study compares and assesses the pattern of disparities in socio-economic development at block level in Malda district applying Kendall's ranking co-efficient method (1955). The socio-economic development index shows that eastern and north-eastern part is more developed in comparison with the southern and western part of the region. The study reveals that wide disparities in the level of socio-economic development exist among different blocks.

Keywords: Regional Imbalances, Socio-economic Development, Kendall's Ranking Co-efficient Method

Introduction

Development is a multi-dimensional process that involves reorganization and reorientation of the entire economic and social system. It requires a balanced human resource development in the country. Developmental programmes have been taken up in the country in a planned way with the main objective of enhancing the quality of life of people by providing the basic necessities as well as improving their social and economic well-being. Although resource transfers are being executed in the backward regions through a number of instruments like subsidies and Central assistance, it has been observed that the regional disparity in terms of

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economic development is not declining over time. Socio-economic development is a process of betterment for a large human group and includes both economic development and social transformation. The socio-economic facilities play an important role in the process of development of a region. This improves the social condition of the people of the region. This study is of prime importance for developing countries as every section of the society and economy is influenced by it. It helps in the development of agriculture as it enhances the use of new technology. It helps in the expansion of facilities like education, health, means of communication, electricity and also in capital generation. Knowledge of the level of development at block level will help in identifying where a given block stands in relation to others. The study throws light on the relationships of socio-economic development with the developments in agriculture, industry, infrastructural facilities and the literacy status of various blocks of the district. The Green Revolution in the agriculture sector and commendable progress in the industrial front have certainly increased the overall total production, but there is no indication that these achievements have been able to reduce substantially the regional inequalities in the level of development. Although resource transfers are being executed in backward regions of the country, it has been observed that the regional disparities in terms of socio-economic development are not declining over time.

Present research work is an attempt to evaluate the socio-economic development of Malda district at block level. The study also helps in making choice of operational areas for different development programmes likely to be launched in order to overcome the problem of backwardness.

Study Area

For the present study, Malda district of the state of West Bengal has been taken which lies between latitudinal and longitudinal figures of 24^0 $40'20''$ N to 25^0 $32'08''$ N and $87^045'50''$ E to $88^028'10''$E respectively and surrounded by Bangladesh and Dakhsin Dinajpur in the East, Santhal Parganas of State of Jharkhand in West, Uttar

Dinajpur in North and Murshidabad in South. The district of Malda has a total area of 3733 sq.km (census 2011) and the total population of Malda district is 39, 88,845 (census 2011). For administrative purpose the district has been divided into fifteen Blocks. The region of mature alluvium that had given North Bengal its old historical name of *Varendri* or *Barendri* is known today as the Barind. This region is made up of the ancient alluvial humps that are remnants of old riverine floodplains that remained unaffected subsequently by inundation and renewed silting. Besides the eastern and northeastern fringes of the district, the Barind tract also extends into parts of

Figure 1
Administrative Districts of Malda District

Source: Survey of India, New Delhi
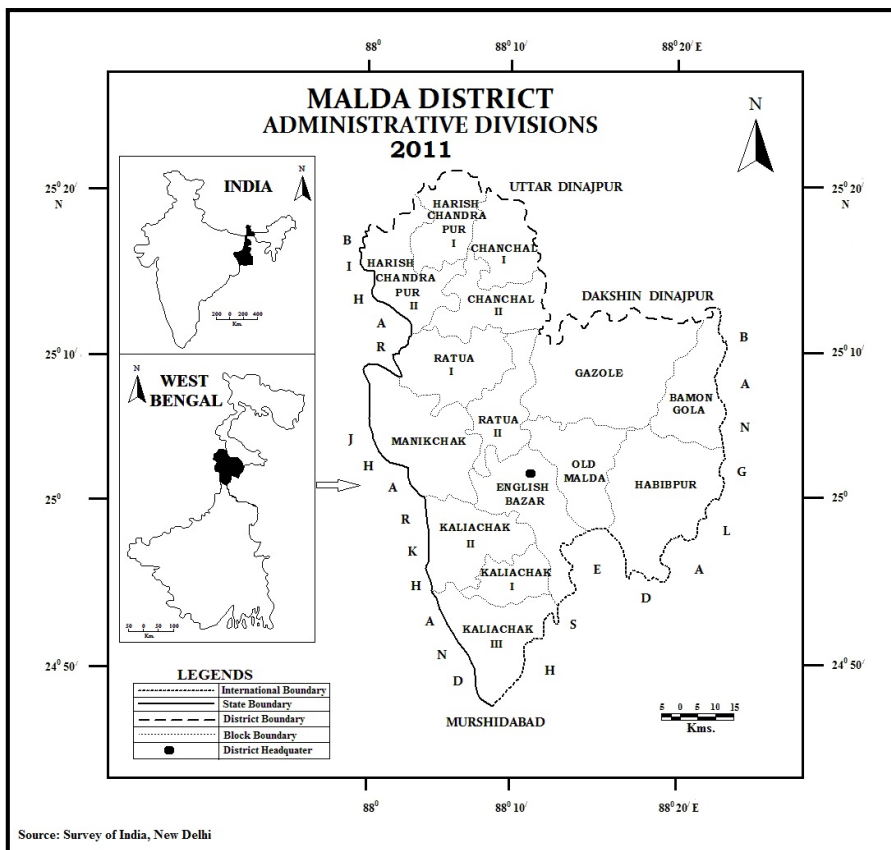
Uttar and Dakshin Dinajpur and adjoining areas within Bangladesh, forming an upland rising to elevations of over 37 msl in its highest portion. The cumulative area of the Barind spanning Uttar & Dakshin Dinajpur and Malda districts in North Bengal is 1621sq. km.

Objectives:

The present study aims at investing the following objectives:

1. To study the spatial inequality in the level of socio-economic development and identify the backward blocks of the district.

2. To study the underlying causes responsible for the inequality and areal variations in the development.

Database and Methodology

The study is based on secondary data collected from various sources and particularly from District Statistical Handbook for the year 2011. Kendall's ranking co-efficient method has been used to analyze the spatial variation in socio-economic development. The regional disparities are due to the variations in the nature of social, economic and demographic factors. To minimize disparities in development their identification is very essential. Keeping in view the existing socio-economic matrix of the region, 28 indicators are selected and grouped into three categories i.e. social, economic and demographic. These indicators are:

Social Indicators

Number of Primary school (X_1), Number of Senior Secondary School (X_2), Number of High Secondary school (X_3), Number of Primary Health Centers (X_4), Number of Beds in Primary Health Centers (X_5), Number of Sub Health Centers (X_6), Number of Beds in Sub Health Centers (X_7), Number of Mouzas having Electricity (X_8), Number of Mouzas having drinking water facilities(X_9), Number of Post Office (X_{10}), Number of Ferry Services (X_{11}).

Economic Indicators

Percentage of Net sown area to gross cropped area (X_{12}), Number of river lift irrigation (X_{13}), Number of shallow tube-wells (X_{14}), Number of deep tube-wells $(X_{15}$ Number of commercial banks (X_{16}), Number of gramin banks (X_{17}), Number of cooperative societies (X_{18}), Number of Fertilizer Depot (X_{19}), Percentage of Agricultural labour to total workers (X_{20}), Percentage of Cultivators to total workers (X_{21}), Total Road Length (X_{22}).

Demographic Indicators

Density of population (X_{23}), Sex Ratio (X_{24}), Literacy rate as percentage of total population (X_{25}), Percentage of Male Literacy (X_{26}), Percentage of Female Literacy (X_{27}), Gap in Male-Female literacy (X_{28}).

Kendall's Rank Order Score Method

By utilizing these data and indicators, an attempt has been made to examine the development of Malda district at block level. Kendall's ranking co-efficient method has been used to analyze the spatial variation in socio-economic development. For analyzing the development of socio-economic amenities in Malda district, block-wise differentiation has been carried out. For this, different type of indicators has been used. These indicators have been ranked according to their total number. Blocks with maximum number of socio-economic amenities have been assigned rank 1 and accordingly the other blocks have been ranked 2, 3, 4 and so on. Accordingly, average of every sectors indicator has been calculated and the block securing maximum average score will fall under low developed category blocks and lowest average score fall under high developed category block.

The acquired data have been tabulated, analyzed, interpreted in the form of tables and diagrams. Numerical and non-numerical information collected has been analyzed using suitable statistical

techniques. The complete indices of all the selected indicators of social, economic and demographic dimension present overall scenario of inter block disparity in the level of development. The district is divided into high, moderate and less developed categories based on combined rank score of 28 indicators. The broad category of developmental disparities has been shown in Table 1.

Analysis and Discussion

In order to eliminate or minimize the disparities and formulation of developmental plans, the identification of backward or depressed regions holds the key. The regions that are highly developed in terms of social, economic and demographic factors can also show significant growth and development in terms of optimum land use and agricultural efficiency (Joshi and Dube, 1979).

Disparities in the Level of Social Development

Social disparities have many causes ranging from historical to present status in health, education and other such amenities. Based on the combined rank score of 11 indicators, the level of social development has been calculated. The pattern of spatial distribution accentuates inter-block disparities in social development in the region. (Fig. 2)

The composite index of all selected indicators of social sector has presented an overall scenario of inter-block disparity and social development in the district. In order to explain the prevalent inter-block disparities in social development, the study area has been divided into the following levels:

Highly developed region

The highly developed region consists of five blocks namely Gazole (4.09) and Chanchal-I (4.36). Numbers of primary school, senior secondary school, post offices, etc. are highly available in

both the blocks. Most of the villages under these blocks have been covered under drinking water and electricity facility.

Moderately developed region

This category having the range score of 4.50 – 5.85 includes the Chanchal-II, Bamongola, Habibpur, Old Malda, English Bazar, Manikchak and Kaliachak-III blocks. These blocks with moderate available of amenities such as post offices, higher secondary school, ferry services etc. have resulted in other medium state of development in the region. The score of many indicators is of less order.

Less developed region

In this category six blocks namely Harishchandrapur-I, Harishchandrapur-II, Ratua-I, Ratua-II, Kaliachak-I and Kaliachak-II fall, have Kendall rank above 5.85. The rank score is least for many indicators. The development is less due to small number of higher secondary and senior secondary school. The health facilities are also less in numbers. Fig. 2 shows the disparities in the level of social development.

Disparities in the Level of Economic Development

The issue of economic inequality is related to the ideas of equality, equality of outcome and equality of opportunities. The district is divided into three categories, highly developed, moderate and less developed blocks based on the combined rank score of 11 indicators. The patterns of spatial distribution of such development range also bring out the overall inter-blocks disparities in the level of economic development. (Fig. 3)

Fig. 2   Fig. 3   Fig. 4
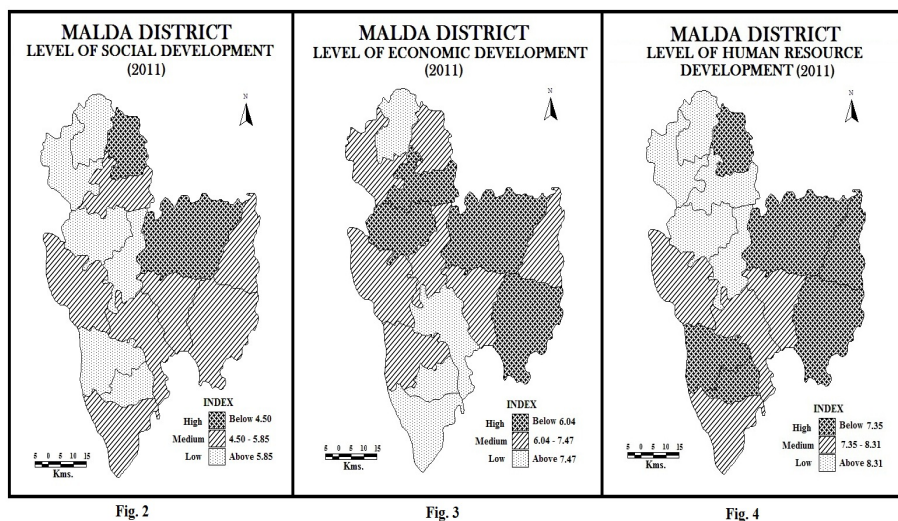
The economic development also varies among the different blocks of district Malda. A composite index of all indicators of economic sectors shows the developmental disparity at the block level. The composite index of all indicators of economic sectors shows the developmental disparity at the block level. The composite index of all the selected indicators of economic development presents overall scenario of inter-block disparity in economic development. In order to explain the existing inter-block economic disparities, the district has been divided into the following levels of disparities (Table 1, 2 and 3)

Highly developed region

Highly developed region consists of four blocks namely Chanchal-II (5.82), Ratua-I (5.64), Gazole (2.45) and Habibpur (5.36). Interestingly Gazole blocks had same position in terms of social development. These blocks have urban areas and have favourable presence of indicators like percentage of net sown area to gross cropped area, sources of irrigation, total road length etc.

Table 1

Regional Disparities in the Level of Socio-Economic Development: Social Indicators

Blocks	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	Total Rank	Average Rank
Harishchandrapur-I	105 (9)	5 (11)	1 (6)	1 (2)	65 (2)	3 (5)	6 (2)	104 (5)	104 (6)	13 (10)	0 (9)	67	6.09
Harishchandrapur-II	107 (7)	12 (4)	2 (5)	1 (2)	30 (3)	2 (6)	0 (4)	10 (15)	72 (11)	10 (12)	4 (6)	75	6.82
Chanchal-I	100 (1)	10 (6)	1 (6)	1 (2)	68 (1)	3 (5)	10 (1)	97 (6)	99 (7)	16 (8)	5 (5)	48	4.36
Chanchal-II	85 (4)	23 (1)	8 (2)	2 (1)	30 (3)	25 (4)	0 (4)	79 (7)	88 (9)	8 (13)	4 (6)	53	4.82
Ratua-I	117 (9)	8 (8)	1 (6)	1 (2)	15 (6)	3 (5)	10 (1)	30 (13)	91 (8)	16 (8)	6 (4)	70	6.36
Ratua-II	83 (11)	12 (4)	3 (4)	1 (2)	25 (4)	2 (6)	0 (4)	49 (11)	48 (15)	18 (7)	7 (3)	71	6.45
Gazole	194 (10)	15 (3)	2 (5)	1 (2)	12 (7)	4 (4)	0 (4)	200 (1)	288 (1)	32 (1)	3 (7)	45	4.09
Bamongola	105 (6)	7 (10)	1 (6)	1 (2)	25 (4)	2 (6)	10 (1)	113 (4)	141 (3)	12 (11)	14 (1)	54	4.91
Habibpur	147 (7)	9 (7)	2 (5)	1 (2)	25 (4)	2 (6)	0 (4)	195 (2)	233 (2)	19 (6)	5 (5)	50	4.55
Old Malda	106 (3)	6 (8)	1 (6)	1 (2)	20 (5)	2 (6)	0 (4)	65 (8)	115 (4)	15 (9)	6 (4)	61	5.55
English Bazar	139 (12)	21 (2)	4 (3)	2 (1)	15 (6)	3 (5)	0 (4)	120 (3)	109 (5)	22 (5)	1 (8)	54	4.91
Manikchak	150 (6)	8 (8)	13 (1)	1 (2)	25 (4)	35 (1)	0 (4)	50 (10)	75 (10)	23 (4)	10 (2)	52	4.73
Kaliachak-I	107 (5)	6 (10)	3 (4)	1 (2)	15 (6)	3 (5)	5 (3)	60 (9)	61 (13)	25 (3)	4 (6)	66	6.00
Kaliachak-II	127 (8)	11 (5)	13 (1)	2 (1)	30 (3)	34 (2)	0 (4)	20 (14)	57 (14)	16 (8)	3 (7)	67	6.09
Kaliachak-III	117 (2)	8 (8)	2 (5)	1 (2)	15 (6)	2 (6)	10 (1)	40 (12)	66 (12)	26 (2)	4 (6)	62	5.64

Source: Calculated by authors using Kendall's rank order score method (1955).

Note: Figures within brackets shows the rank scores of indicators

Table 2
Regional Disparities in the Level of Socio-Economic Development: Economic Indicators: Demographic Indicators

Blocks	X_{23}	X_{24}	X_{25}	X_{26}	X_{27}	X_{28}	Total Rank	Average Rank	Grand Total Rank	Average Rank
Harishchandrapur-I	1155 (6)	933 (11)	52.47 (15)	56.66 (5)	43.34 (11)	13.32 (5)	53	8.83	205	7.32
Harishchandrapur-II	1156 (5)	928 (12)	54.34 (13)	54.78 (10)	45.22 (6)	9.55 (10)	56	9.33	200	7.14
Chanchal-I	1711 (2)	950 (7)	65.09 (3)	54.16 (12)	45.84 (4)	8.33 (12)	40	6.67	169	6.04
Chanchal-II	996 (8)	949 (8)	57.38 (11)	53.65 (13)	46.35 (3)	7.30 (13)	56	9.33	173	6.18
Ratua-I	780 (11)	937 (10)	60.13 (7)	55.22 (8)	44.78 (8)	10.44 (8)	52	8.67	184	6.57
Ratua-II	1193 (4)	963 (3)	56.18 (12)	52.90 (15)	47.10 (1)	5.80 (15)	50	8.33	203	7.25
Gazole	670 (14)	970 (2)	63.07 (5)	56.20 (6)	43.80 (10)	12.39 (6)	43	7.17	115	4.11
Bamongola	698 (13)	943 (9)	68.09 (1)	57.13 (3)	42.87 (13)	14.26 (3)	42	7.00	170	6.07
Habibpur	537 (15)	974 (1)	58.81 (9)	57.37 (2)	42.63 (14)	14.73 (2)	43	7.17	152	5.43
Old Malda	699 (12)	952 (6)	59.61 (8)	56.17 (7)	43.83 (9)	12.33 (7)	49	8.16	187	6.68
English Bazar	1090 (7)	949 (8)	63.03 (6)	54.60 (11)	45.40 (5)	9.21 (11)	48	8.00	194	6.93
Manikchak	852 (10)	933 (11)	57.77 (10)	57.57 (1)	42.43 (15)	15.13 (1)	48	8.00	179	6.39
Kaliachak-I	3792 (1)	958 (4)	65.25 (2)	53.31 (14)	46.69 (2)	6.62 (14)	37	6.16	195	6.96
Kaliachak-II	983 (9)	954 (5)	64.89 (4)	54.99 (9)	45.01 (7)	9.97 (9)	43	7.17	189	6.75
Kaliachak-III	1520 (3)	949 (8)	54.16 (14)	56.86 (4)	43.14 (12)	13.72 (4)	45	7.50	193	6.89

Source: Calculated by authors using Kendall's rank order score method (1955).
Note: Figures within brackets shows the rank scores of indicators

Table 2
Regional Disparities in the Level of Socio-Economic Development: Economic Indicators

Blocks	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}	Total Rank	Average Rank
Harishchandrapur-I	38.91 (14)	14 (11)	30 (8)	3121 (3)	2 (8)	4 (3)	25 (8)	57 (12)	37.08 (1)	18.77 (7)	249 (10)	85	7.73
Harishchandrapur-II	41.67 (11)	42 (4)	10 (14)	4514 (1)	3 (7)	5 (2)	21 (9)	58 (11)	29.08 (5)	22.57 (3)	400 (3)	69	6.27
Chanchal-I	35.46 (15)	26 (9)	21 (11)	2165 (8)	4 (6)	3 (4)	26 (7)	67 (9)	35.95 (2)	18.34 (8)	155 (14)	81	7.36
Chanchal-II	41.32 (12)	33 (7)	32 (7)	2244 (7)	4 (6)	4 (3)	26 (7)	71 (7)	34.38 (3)	21.06 (4)	401 (2)	64	5.82
Ratua-I	49.11 (9)	37 (5)	39 (5)	2672 (5)	6 (4)	3 (4)	30 (6)	72 (6)	24.02 (6)	19.49 (5)	305 (7)	62	5.64
Ratua-II	41.15 (13)	67 (1)	77 (2)	1449 (11)	3 (7)	5 (2)	21 (9)	61 (10)	31.39 (4)	15.74 (10)	165 (13)	82	7.45
Gazole	67.77 (2)	51 (3)	80 (1)	4054 (4)	7 (3)	7 (1)	47 (1)	212 (1)	21.86 (11)	28.78 (1)	958 (1)	27	2.45
Bamongola	65.36 (5)	36 (6)	0 (15)	1882 (9)	4 (6)	2 (5)	31 (5)	112 (2)	23.42 (8)	26.85 (2)	235 (11)	74	6.73
Habibpur	81.09 (1)	56 (2)	23 (10)	1845 (10)	5 (5)	5 (2)	30 (6)	107 (3)	21.90 (10)	19.37 (6)	311 (6)	59	5.36
Old Malda	65.36 (4)	51 (3)	58 (3)	1194 (13)	1 (9)	3 (4)	16 (10)	75 (5)	21.97 (9)	16.46 (9)	294 (8)	77	7.00
English Bazar	61.11 (7)	25 (10)	48 (4)	1084 (14)	8 (2)	5 (2)	7 (11)	75 (5)	16.26 (14)	6.77 (14)	288 (9)	92	8.36
Manikchak	67.57 (3)	27 (8)	17 (12)	2437 (6)	6 (4)	4 (3)	34 (3)	67 (9)	23.47 (7)	7.77 (12)	180 (12)	79	7.18
Kaliachak-I	62.20 (6)	4 (13)	13 (13)	1335 (12)	10 (1)	3 (4)	44 (2)	72 (6)	9.07 (15)	3.79 (15)	317 (5)	92	8.36
Kaliachak-II	58.23 (8)	11 (12)	24 (9)	805 (15)	4 (6)	3 (4)	26 (7)	69 (8)	17.82 (12)	6.96 (13)	364 (4)	79	7.18
Kaliachak-III	45.28 (10)	3 (14)	38 (6)	2714 (4)	6 (4)	2 (5)	33 (4)	104 (13)	17.44 (13)	10.56 (11)	152 (15)	86	7.82

Source: Calculated by authors using Kendall's rank order score method (1955).

Note: Figures within brackets shows the rank scores of indicators

All these indicators helped the above mention blocks to figure in highly developed blocks in the district.

Moderately developed region

The developmental blocks ranges between 6.04 to 7.47 have been designated as moderately developed region. This includes Harishchandrapur-II, Chanchal-I, Ratua-II, Bamongola, Old Malda, Manikchak and Kaliachak-II blocks. These blocks have adequate level in terms of percentage of agricultural labourer to total worker, percentage of cultivators to total worker, fertilizer depots etc. All these indicators along with their numbers and availability in these blocks place them in the region of moderate level of development.

Less developed region

In this category only four blocks of Harishchandrapur-I, English Bazar, Kaliachak-I and Kaliachak-III fall. The rank score is least of many indicators. The low development is due to the lack of the number of commercial and gramin bank; number of co-operative societies etc. in terms of social development English Bazar and Kaliachak-III figured in moderately developed region but got relegated to the lowest level in economic development. Fig.3 shows the disparities in the level of economic development in the district.

Disparities in the Level of Human Resource Development

The human resource development is also an important criterion in order to gauge the level of development. The demographic composition of any region has a close bearing to the level of development. The study area exhibit inter-block disparities in the level of human resource development. The district has been divided into three categories, highly developed, moderate and less developed blocks, based on combined rank score of 6 indicators. The pattern of spatial distribution shows overall inter-block disparities in human resource development. (Fig.4)

Highly developed region

Highly developed region consists of six blocks namely, Chanchal-I, Gazole, Bamongola, Habibpur, Old Malda, Kaliachak-I and Kaliachak-III. The developed regions are often characterized by favourable level of population, density, sex ratio, high degree of urbanization and literacy rate.

Moderately developed region

Four blocks of Old Malda, English Bazar, Manikchak and Kaliachak-III come under this category. These blocks have moderate density of population, sex ratio and percentage of female literacy resulted to moderate state of development in the region.

Less developed region

Less developed category consists of score above 8.31 with only five blocks namely, Harischandrapur-I, Harischandrapur-II, Chanchal-II, Ratua-I and Ratua-II. The rank score in this category is least due to many indicators including density and sex ratio of population etc. The literacy rate of male and female is also very low and the gap between male-female literacy rates is highest. The low female literacy rate and wide gap in male-female literates represents poor social status of women in the block. It can be concluded on the basis of foregoing discussion that there is high disparity in human resource development in the district. Fig.4 also shows the disparity in the level of human resource development among the blocks.

Composite Level of Disparities in Socio-Economic Development

Inter-block variation in the socio-economic development has been analyzed on the basis of overall development with the help of Kendall's rank score method. The indices of overall socio-economic development of the block can be derived from various dimensions of their development in different socio-economic sectors.
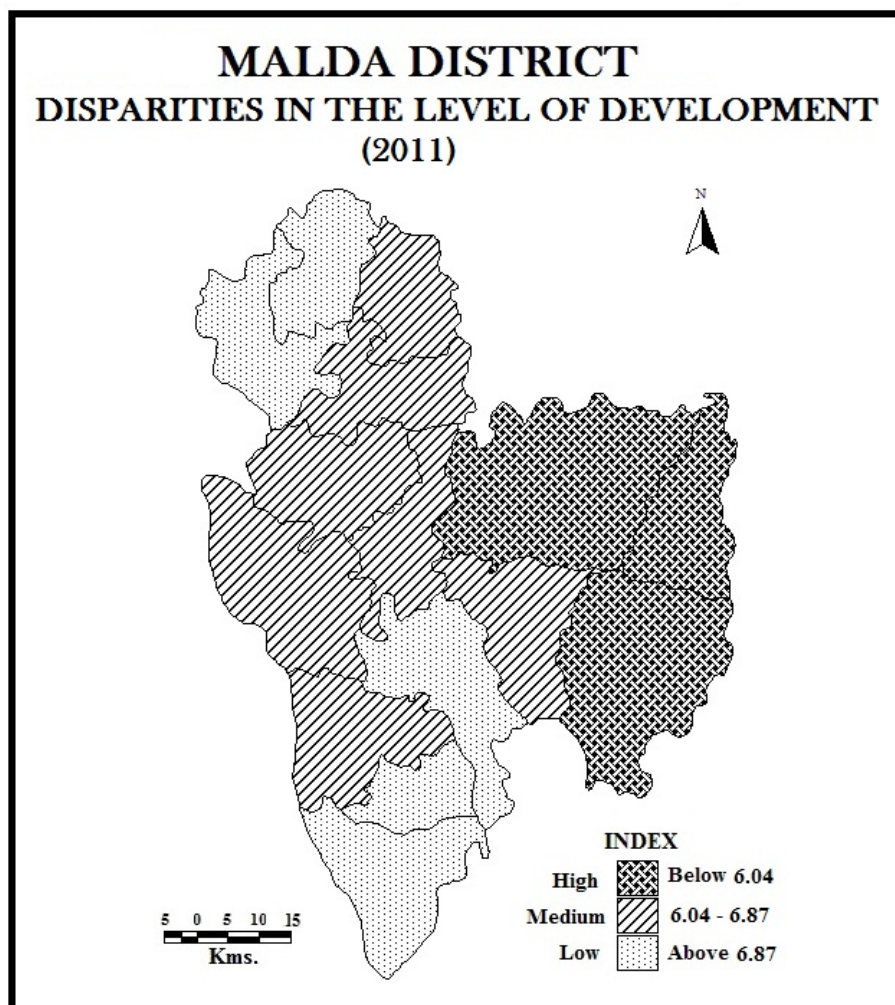
The analysis of sectoral development in the proceeding sections brought out the fact that by itself each sector may not have only one dimension or typology of development across different blocks. Some blocks may have high level of social development whereas the other may be well placed in economic terms, while human resource development may altogether show different results. The proceeding analysis of three sectors consists of 28 indicators of development. These indicators need to be further analyzed, to find out whether there are any inter linkages among them and reflecting a definite pattern of overall development.

The district is divided into three categories, highly developed, moderate and less developed blocks, based on the combined rank score of 28 indicators. The patterns of spatial distribution of such range shows inter block disparities in the level of overall development. The composite index of all the selected indicators of social, economic and human resource dimension present overall scenario of inter block disparity in the level of development. The broad category of developmental disparities has been shown in Table 1 and Fig. 5.

Highly developed region

On the basis of aggregate score, the highly developed region consists of three blocks namely, Gazole, Bamongola and Habibpur having a range of 4.11, 6.07 and 5.43 respectively. These blocks are having prominent urban areas and are bestowed with the amenities like good number of schools, post offices, drinking water facilities, electricity facility, high density of population, length of roads, health facilities etc. All these indicators helped the above mention blocks to occupy the position of highly developed blocks in the district. The blocks that are highly developed in terms of social, economic and demographical factors also shows significant growth and development in terms of land use and agricultural efficiency (Joshi and Dube, 1979)

Figure 5
Disparities in Levels of Development in Malda District

Figure 5 content:

MALDA DISTRICT
DISPARITIES IN THE LEVEL OF DEVELOPMENT
(2011)

N

INDEX
High · Below 6.04
Medium · 6.04 – 6.87
Low · Above 6.87

5 0 5 10 15
Kms.

Moderately developed region

In this category seven blocks namely, Chanchal-I, Chanchal-II, Ratua-I, Ratua-II, Old Malda, Manikchak and Kaliachak-II with the score range of 6.04 – 6.87. The moderate presence of various socio-economic indicators such as number of primary health center,

higher secondary school, source of irrigation, total road length etc. which shows that half of the total blocks are in the middle stage of socio-economic development in the district.

Less developed region

The blocks scoring above 6.87 have been placed in less developed region (Fig.5). There has been only five blocks namely, Harishchandrapur-I, Harishchandrapur-II, English Bazar, Kaliachak-I and Kaliachak-III falls in this category. The rank score calculated through various indicators place the block in the low development categories mainly due to the lack of adequate hospital facilities, few number of educational institute, limited number of banks, low level of literacy etc. Harishchandrapur-I and Harishchandrapur-II is least developed both in social and human resource development indicators.

The analysis of development level and spatial variations exhibits that the significant reasons for this have been varied human development indices and level of health facilities etc. Developmental strategies in the blocks can be best served through rural transformation and their efficient implementation at village level. The micro level plans instead of macro plans can be a game changer, so that fruit of development shall reach to the grassroots level.

Conclusion

The socio-economic development in Malda district is co-related with regional disparities. Therefore, it is necessary to reduce gap of disparity of development from one block to another. So that, this may be lead to reduce the disparities in the levels of socio-economic development. It is hoped that, this type of study will certainly give enough clues about problems and prosperities of socio-economic development of micro level areas. Therefore, it is anticipated that the present research endeavours will certainly add to the knowledge of regional dimensions of socio-economic development of India in general and Malda district in particular.

References

Angadi, D.P. 2012. 'Regional Disparities in Agricultural Development- A Case Study of Belgium District of Karnataka State, India', Regional Symbiosis, 20: 68-86

Joshi, Samir. 1997. 'Regional Disparities in Industrial Development', Indian Journal of Regional Science, 29(1): 92-103.

Joshi, Y.G., Juliet, Dube. 1979. 'Measurement of Regional Disparity of Agricultural Development in Madhya Pradesh', *The Deccan Geographer,* 17 (3): 587-593.

Kendall, M. G. 1955. Rank Correlation Methods. Hafner Publishing Co, New York.

Krishna, G. 1989. Trends in Regional Disparities in India, Asian Profile, 17(3):.243-261.

Kumar, S. 2005. Economic backwardness of Eastern Region of Uttar Pradesh,UPUEA Economic Journal, 1 (1).

Mohammad, I.H., Das, Patanayak P. and Mishra, B.K. 2007. Regional Inequality in Orissa, Some Emerging, Indian Journal of Rregional Science, 39(1).

Nagaraj, H. and Krishna Murthy. 2007. Geographical analysis of Regional Disparities- A case Study of Chitradurga district, Karnataka, *Trans Institute of Indian Geographers*, =29(1).

Nayak, L.T., Narayankar, D.S. 2009. Identification of Regional Disparities in levels of development in Bellary District-Karnataka, Indian Journal of Regional Science, 41(1): 37-47.

Pal, M.N. 1975. Regional disparities in the level of Development of India, Indian Journal of Regional Science, 8(1).

Sharma, D. D. & Aashis, P. 2014. Disparities in the Levels of Socio-Economic Development in the District Sirmour of Himachal Pradesh: A Geographical Analysis, Indian Journal of Regional Science, 46(2): 91-100

Singh, A.K. 1981. *Pattern of Regional Development – A Comparative Study.* Sterling Publisher, New Delhi.

Singh, R. 2006. Regional Disparities in Levels of Socio-economic Development in Post Reform Period: A District Level Analysis, Annals of NAGI, 26(2): 87-94

Rai, S.C.,Bhatia, V.K. 2004. Dimensions of Regional Disparities in Socio-Economic Development of Assam, Indian Society of Agricultural Statistics, 57: 178-190.