Level and Pattern of Human Development in Paschim Medinipur District, West Bengal, India

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ABSTRACT The composite index is formed in this study for evaluating the variation in the human development transversely the blocks of the district. The Human Development Index (HDI) of Paschim Medinipur has been calculated and premeditated on the basis of three basic indices, viz., education index, health index and economic livelihood index by using the methodology developed by the United Nation Development Program (UNDP) - the construction of the individual indices are elaborated in this study. These three indices have been combined together to formulate the Human Development Index (HDI) of different blocks in the district. Human development index has been prepared by giving equal weightage to education index, health index and economic livelihood index. Daspur II is ranked first in terms of human development index (0.772) followed by Daspur I and (0.728) and Ghatal (0.649). Nayagram has the lowest value of Human Development Index (0.423) precede by Jamboni (0.454) and Binpur II (0.479). In this regard the thematic mapping, geographical delineation and spatial pattern of the blocks as per Human Development Index (HDI) value give a complete perception about human development of different blocks in the district.

INTRODUCTION

Human development is an interesting perception within a turf of international development. It engages studies of the human provision with its nucleus being the potential approach. The discrimination accustomed Human Development Index is used as an approach of measuring concrete improvement in human development by the United Nations. It is a substitute approach to a particular focus on economic growth and focused more on social justice, as a mode of understanding advancement.

United Nations Development Program has been defining human development as "the progression of enlarging people's choices", said choices are permitting them to "lead a long and healthy life, to be educated, to enjoy a decent standard of living", as well as "political freedom, other guaranteed human rights and various ingredients of self-respect (Human Development Reports 1997(UNDP)).

Development apprehends expanding the choices people have, to lead lives that they as-

sessment and improving the human condition so that people have the opportunity to lead complete lives (Paul 1994). Thus, human development is concerning much more than economic growth, which is only a means of broadening people's choices (Human Development Reports 2009 (UNDP)). Elementary to increasing these choices is structuring human capabilities —the assortment of belongings that people can do or be in life. Capabilities are "the substantive freedoms [a person] enjoys to lead the kind of life [they have] reason to value" (Human Development and Capability Association Briefing Note 1-5). Human development scatters the attentiveness of the allocations of commodities and services that disadvantaged people need and center its ideas on human decisions (Srinivasan1994). By investing in people, we facilitate intensification and empower people to practice many diverse life conduits, thus, budding human aptitudes (The Human Development Foundation - The Human Development Concept 2009). The most fundamental competences for human development are: to lead extended and healthy lives, to be well-informed (for example, to be educated), to have admittance to the resources and social services needed for a decent standard of

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living and to be competent to take part in the life of the community. Without these, a lot of choices are basically not available and many prospects in life staying behind the inaccessible (Human Development Reports 2009 (UNDP)).

One of the determining methods of human development is the Human Development Index (HDI), originated by the United Nations Development Program (Human Development Reports 2009 (UNDP)). The index includes statistics such as life anticipation at birth, an education index (calculated using mean years of schooling and expected years of schooling), and gross national income per capita. Though this index does not detain every phase that adds to human capability, it is a standardized technique of enumerating human capability across the nations and communities. Characteristics that could be missing out of the calculations comprise incomes that are not capable to be computed, such as staying home to hoist children or exchanging goods/services, as well as individuals' discernments of their individual well being.

Education Index

Education index has been prepared by giving one third weightage to children's enrolment ratio and two-third weightage to adult literacy rate and by adopting normative approach where both these indicators have minimum value of 0 and maximum value of 1.

Health Index

Health index has been prepared by giving equal weightage to child health indicator and adult health indicator (Thomas and Strauss 1997).

Economic Livelihood Index

Economic livelihood index is prepared based on equal weightage to food grains productivity, index percentage of non-marginal workers index, and APL index by adopting normative approach.

The indicators presented above showed human development scenario of Paschim Medinipur district vis-à-vis the whole of West Bengal. However, appropriate indicators need to be combined to form the composite index so that variation across the district can be explained.

This is done by forming education index, health index and economic livelihood index. The indices have been combined together to analyse the Human development.

The Study Area

Paschim Medinipur, situated in the southern part of West Bengal, has been engraved from the erstwhile Medinipur district, the then the largest district of India, and came into existence in the present form since 1st January 2002. It is situated between 22Ú57'10" and 21Ú36'35" North latitude and between 88Ú12'40" and 86Ú33'50" East longitudes in Figure 1.

Paschim Medinipur is bound by Bankura district in the north and Purba Medinipur district in the south-eastern. To the south the district is bounded by Balasore and Mayurbhanj districts of Orissa and to the west by Singbhum and East District of Jharkhand. Located in the south-western part of West Bengal, Paschim Medinipur is considered as one of the backward districts of the state dominated by indigenous people. This second largest district of the State of W.B has always been in the focus due to its underdevelopment along with other districts of the western part of W.B. In the last two or three years, Maoist violence has rapidly spread over eleven western blocks of the district and this has brought the issues of underdevelopment in the forefront. The district has two distinct divisions- the western part characterized by dry arid lateritic terrain with dominance of tribal population sand the eastern part with alluvial soil cover where agriculture is the main economic activity and inhabited mostly by non-tribals. All the twenty-nine blocks of the district, do present a unique opportunity to understand the issues associated with the different aspects of human development, viz., livelihood, income, health, education etc. (District Human Development Report: Paschim Medinipur 2011).

DATA BASE AND METHODOLOGY

The study is based on block wise secondary data drawn from District Human Development Report: Paschim Medinipur (2011). It has been tried in this study to calculate the Composite index for evaluating the variations in the Human development across the blocks of the district using selected sub index. The expansion form composite index is given in Table 1.
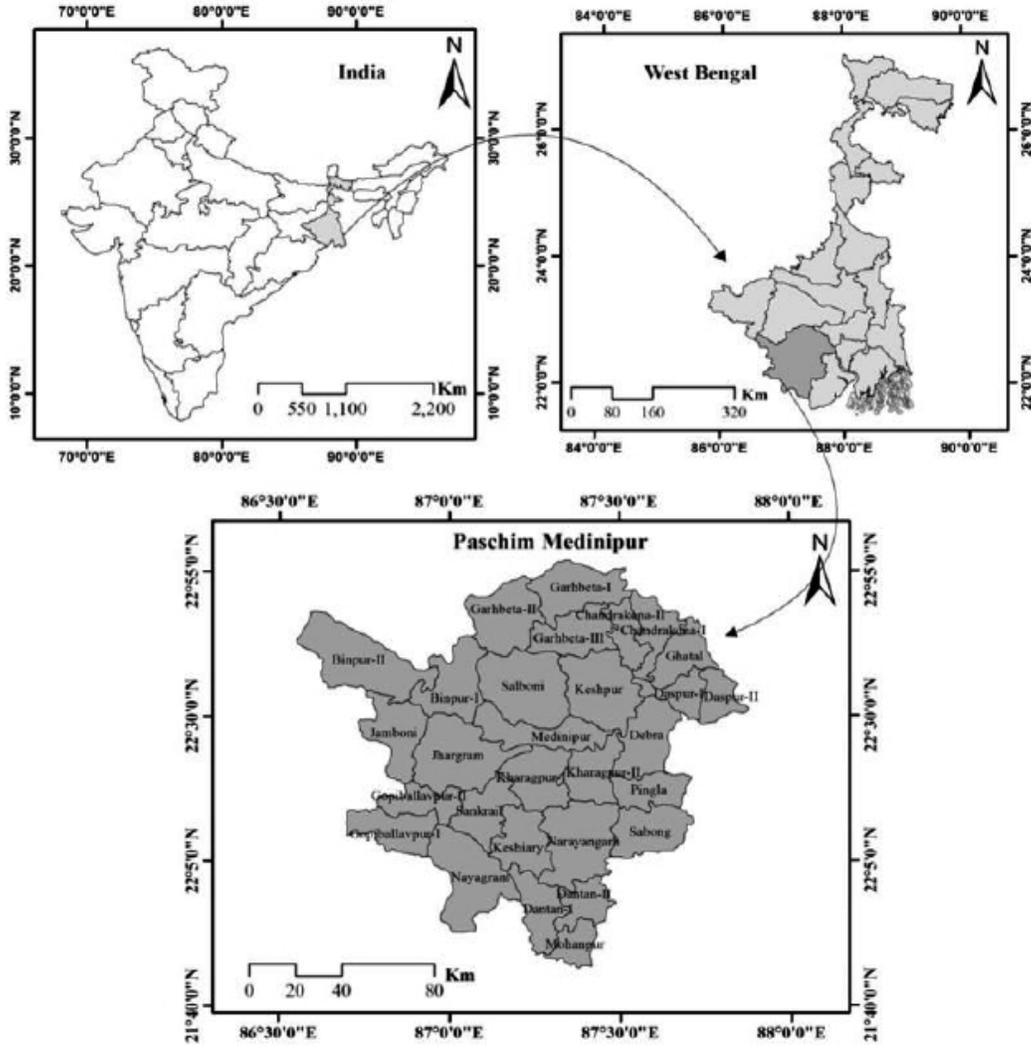
Fig. 1. Paschim Medinipur District and its twenty nine blocks

In calculating each index, the researchers have adopted the methodology used in UNDP's Human Development Index (HDI) (UNDP 2006) to normalize the selected parameters. Raw data has been converted into values which are free from the units and standardized with reference to limiting values, so that all values lie between zero and unity. The general formula for calculating each dimension index is:

Let X_{id} represent the size or value of the i^{TH} indicator in the d^{TH} block of the district (i -

$1,2,...m: d= 1,2,...,n$, say,). The standardization/normalization is achieved by employing the following formula:

$$y_{id} = \frac{X_{id} - \underset{d}{Min}\, X_{id}}{\underset{d}{Max}\, X_{id} - \underset{d}{Min}\, X_{id}} [\uparrow] \qquad (1)$$

Where, $\underset{d}{Min}\, X_{id}$ and $\underset{d}{Max}\, X_{id}$ are respectively, the minimum and maximum of ($x_{i1}, x_{i2,...} x_{in}$).

If, however, x_i is negatively associated with human development, as, for instance, the dropout rate which should decline as the district with

Table 1: Composite index is formed in this study for evaluating the variations in the Human development across the blocks of the district

Education Index (EI)		Health Index (HI)			Economic Livelihood Index (ELI)		
Adult literacy index	Enrolment index	Child health index	Adult health index	Combined Health index	Food grains Productivity index	Percentage of non-marginal workers index	Above poverty level index

human development develops, then (eq. 1) can be written as

$$y_{id} \frac{\underset{d}{Min}\, X_{id} - X_{id}}{\underset{d}{Max}\, X_{id} - \underset{d}{Min}\, X_{id}} \left[\downarrow \right] \qquad (2)$$

Thus, the normalized scores for each parameter can be easily obtained using statistical and functions in any spread sheet application. After computing the normalized scores, the index is constructed by giving equal weight to all indicators and it is presented in Table 2.

RESULTS AND DISCUSSION

Paschim Medinipur is a vast district with a variety of challenges and issues. The district has two distinct divisions, rolling arid zone and squat relief alluvial zone. Around 33 percent of population belonged to vulnerable SC-ST categories. With 90 percent of population living in rural areas, economy continues to be dependent on agriculture. In the western part, more than 54 percent population belonged to SC-ST catego-

Table 2: Selected Human Development Indices derived from UNDP Technique for assessing the physical structure of human development in the Blocks of Paschim Medinipur District

Sub-division	Block	Education Index (EI)	Rank	Health Index (HI)	Rank	Economic Livelihood Index (ELI)	Rank	Human Development Index (HDI)	HDI Rank
Ghatal	Chandrakona-1	0.740		0.646		0.501		0.629	5
	Chandrakona-2	0.683		0.676		0.525		0.628	6
	Daspur-I	0.770		0.738		0.677		0.728	2
	Daspur-II	0.823		0.803		0.690		0.772	1
	Ghatal	0.763		0.669		0.515		0.649	3
	Binpur-I	0.678		0.471		0.367		0.505	26
Jhargram	Binpur-II	0.665		0.564		0.208		0.479	27
	Gopiballavpur-I	0.623		0.553		0.395		0.524	23
	Gopiballavpur-II	0.655		0.553		0.397		0.535	19
	Jamboni	0.669		0.465		0.227		0.454	28
	Jhargram	0.692		0.547		0.309		0.516	25
	Nayagram	0.622		0.387		0.260		0.423	29
	Sankrail	0.705		0.545		0.332		0.527	22
Kharagpur	Dantan-I	0.687		0.553		0.391		0.544	17
	Dantan-II	0.756		0.574		0.425		0.585	14
	Debra	0.727		0.693		0.503		0.641	4
	Keshiary	0.734		0.506		0.356		0.532	21
	Kharagpur-I	0.693		0.552		0.379		0.541	18
	Kharagpur-II	0.695		0.559		0.351		0.535	20
	Mohanpur	0.761		0.564		0.473		0.599	9
	Narayangarh	0.729		0.611		0.368		0.569	15
	Pingla	0.829		0.591		0.430		0.617	8
	Sabang	0.837		0.559		0.460		0.619	7
Midnapore	Garhbeta-I	0.708		0.622		0.431		0.587	13
	Garhbeta-II	0.675		0.621		0.349		0.548	16
	Garhbeta-III	0.701		0.649		0.434		0.595	11
	Keshpur	0.733		0.599		0.443		0.592	12
	Medinipur	0.676		0.515		0.371		0.521	24
	Salboni	0.721		0.644		0.422		0.596	0.64

ries of which 29 percent population belonged to tribal community. Around 18 percent of the district is covered with forests with some blocks having 30 to 40 percent of area under forest. Further, many areas of the district are remote and not well connected. The overall position of literacy is relatively better but there is huge gender gap in literacy. The literacy among the STs is, especially, low with it being very low in ST females. Human Development Index is one of the key indicators for pointing out the difference between developed and underdeveloped zone in the concerned area. A composite index is formed in this study for evaluating the variation in the Human development across the blocks of the district. The HDI of Paschim Medinipur has been calculated on the basis of three basic indices, viz., education index, health index and economic livelihood index by using the methodology developed by the UNDP - the construction

of the individual indices are elaborated in this study.

1. Educational Index (EI)

The calculation of the educational index has been done on the basis of two very reliable sources of data available on education across the blocks of any district in India - the Census data for literacy and the DISE data for enrolment and infrastructure. These indicators have been used to evaluate adult literacy index and enrolment index and have been combined to formulate the education index by using the UNDP methodology. However, some other indicators are also given and explained in this study. The main problem in accommodating all these indicators in the index is to attaching proper weights to them. Indices based on normative goalposts for the above two indicators and the combined
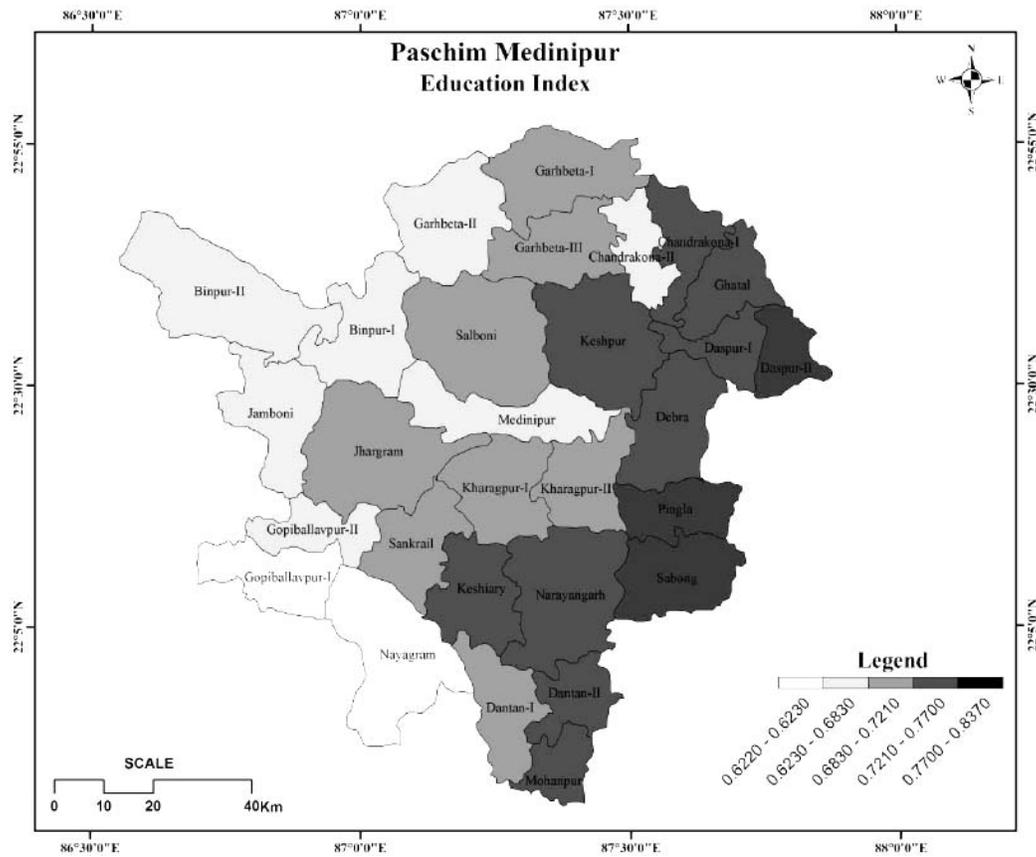

Fig. 2. Education index (EI) is prepared based on equal weightage of adult literacy and gross enrolment

education indices are presented in Table 2 and Figure 2.

It showed that the education index is highest in Sabang (0.837) followed by Pingla (0.829) and lowest in Nayagram (0.622) preceded by Gopiballavpur-I (0.623). It implied that Sabang has succeeded to attain 83.70 percent development in education and the remaining 16.30 percent is yet to be achieved and the success is due to its achievement to the tune of 95.10 percent in enrolment and 78.00 percent in adult literacy. Besides, in the block Nayagram, the attainment in education is only 62.20 percent and though the enrolment ratio in this block is not very low (88.30%) the ultimate attainment remained low for its low adult literacy rate at 48.20 percent only. If attention is given at the subdivisions, it is found that the attainment in education is highest in Ghatal sub-division (76.50%) and lowest in Jhargram sub-division (66.50%).

The said index for all blocks of Paschim Medinipur district taken together is 0.724. This implied that the rural areas of Paschim Medinipur district have attained 72.40 percent success in education (more than 2/3rd success) and the remaining 27.60 percent is yet to be achieved.

2. Health Index (HI)

Basic data for the construction of the Health Index are presented in Table 2. The methodology of calculating health index has been elaborated in this study. Three basic indicators have been used in this respect, viz., child malnutrition, immunisation and adult malnutrition. Indices based on normative goalposts for these three indicators along with child health index, adult health index and combined health index are presented in Table 2 and Figure 3.

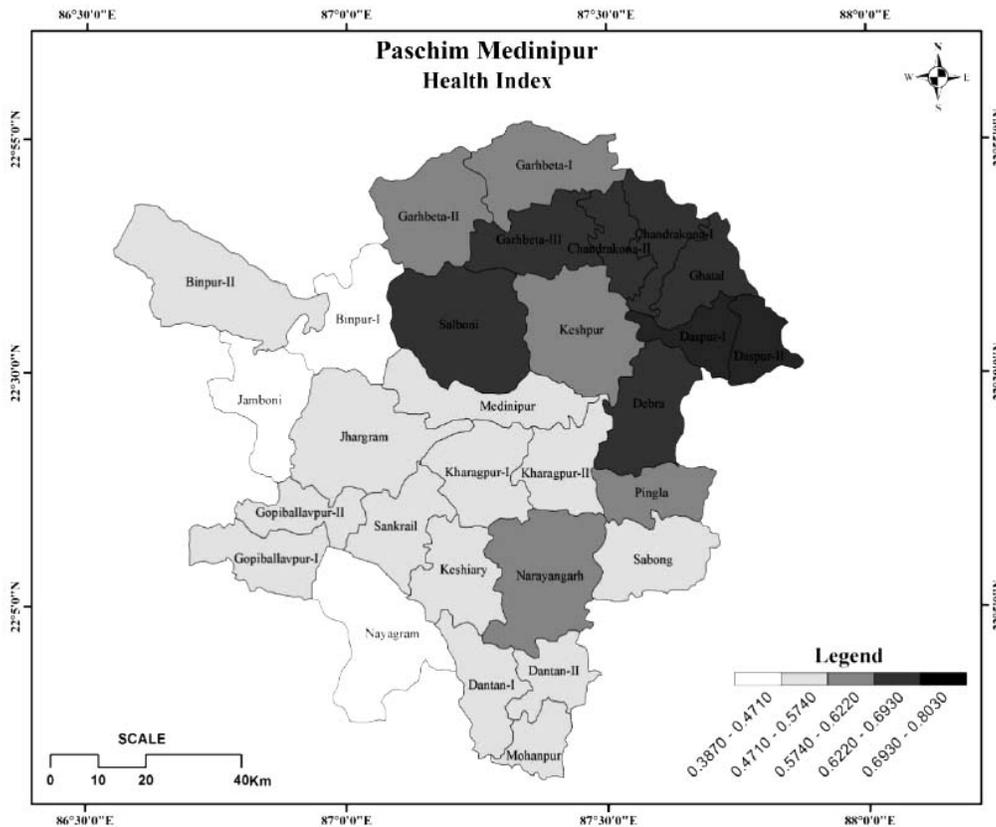It showed that the health index is highest in Daspur-II (0.803) followed by Daspur-I (0.738)

Fig. 3. Health index (HI) is prepared based on equal weightage of child malnutrition, immunisation and adult malnutrition

and Debra (0.693), and is lowest in Nayagram (0.387) preceded by Jamboni (0.465) and Binpur-II (0.471). The implications of the results are straight forward and reveal that Daspur-II block has been succeeded to attain about 80.30 percent development in health and the remaining 19.70 percent is yet to be achieved. The success is due to its achievement to the tune of 79.66 percent in child non-malnutrition, 83.44 percent in immunisation and 78.96 percent in adult non-malnutrition respectively. Further, Nayagram block scored only 38.70 percent, though the immunization rate and the percentage of non-malnourished children in this block are not very low (67.33% and 48.08% respectively) as compared to percentage of adult non-malnourishment (19.70%) which is very low. In respect of subdivisions, Ghatal scored the highest, that is, 71.40 percent and Jhargram scored the lowest, that is, 50.90 percent. The said index for all the blocks of Paschim Medinipur district taken together is 0.594. It implied that the rural areas of Paschim Medinipur district have attained 59.40 percent success in health (a less than 2/3rd success) and the remaining 40.60 percent is yet to be achieved.

3. Economic Livelihood Index (ELI)

Economic livelihood is one of the major aspects which vividly indicated the progress of development of the concerned area. Economic livelihood index (ELI) is calculated based on equal weightage of food grains productivity index, the percentage of non-marginal workers index and APL index presented in Table 2 and Figure 4.

Daspur II is ranked first in terms of economic livelihood index followed by Daspur I, Chandrakona II, Ghatal and Debra. Binpur-II registered the lowest 29th rank led by Jamboni, Nayagram and Binpur-I which belonged to the agriculturally lagging and ecologically adverse region of
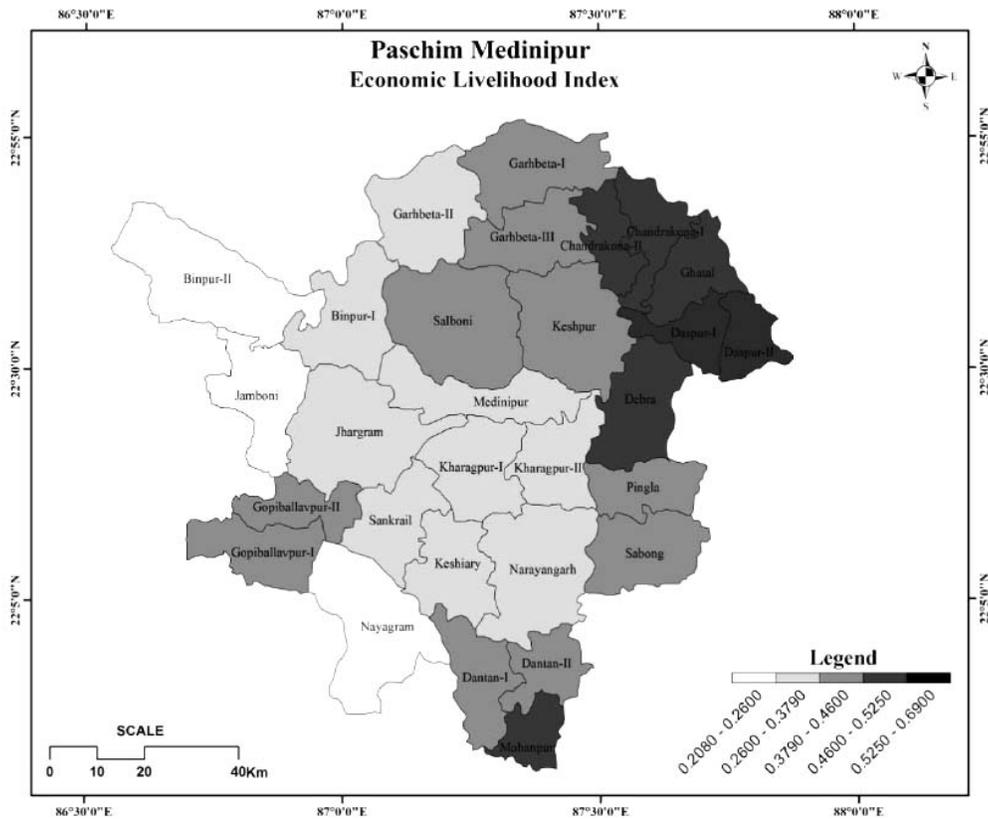

Fig. 4. Economic livelihood index (ELI) is prepared based on equal weightage of food grains productivity, non-marginal workers and above poverty level (APL)

the district. The substantial variation of ELI across different blocks in the district is intimately related to the development of agriculture, literacy and physical infrastructure. The agricultural scenario is one of the important aspects, which indicated livelihood pattern of the area. This is quite obvious for agriculture based district like Paschim Medinipur.

Human Development and Ranking of the Block

These three indices have been combined together to formulate the Human Development Index (HDI) of different blocks in the district. Human development index has been prepared by giving equal weightage to education index, health index and economic livelihood index. Daspur II ranks first in terms of human development index (0.772) followed by Daspur I and (0.728) and Ghatal (0.649). Nayagram has the lowest value of Human Development Index (0.423) precede by Jamboni (0.454) and Binpur II (0.479) in Table 2. The geographical delineation and spatial pattern of the blocks as per HDI value gives a complete perception about human development of different blocks in the district in Figure 5. It was noted that the dimension indices along with the human development index given in Table1, the researchers found that the dimension indices were closely and directly related with each other, and also to the final human development index. The ranks of different blocks in dimension indices and also in human development index are shown in Table 2. It is observed that in blocks like Daspur-II, Daspur-I, Ghatal, Debra and Chandrakona-I, the indices for all three dimensions are more.

Further, in the blocks like Nayagram, Jamboni, Binpur-II, and Binpur-I, Jhargram, Medinipur, Gopiballavpur-I, Sankarail, Kharagpur-
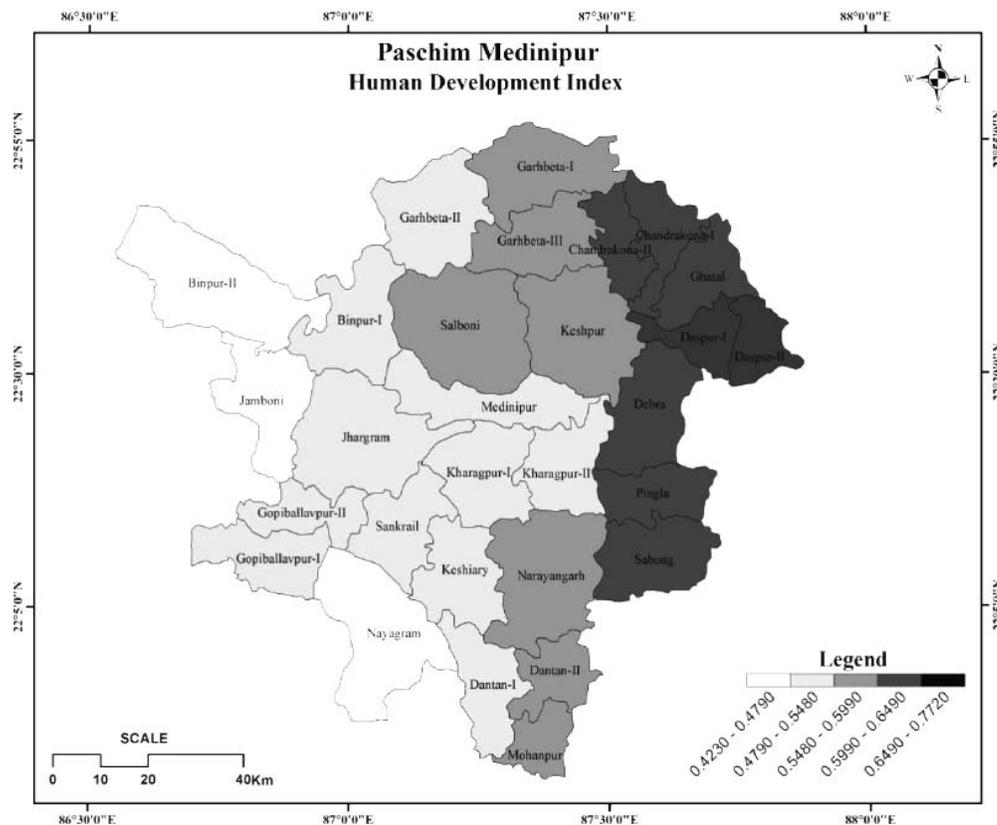

Fig. 5. Human development index has been prepared by giving equal weightage to education index, health index and economic livelihood index

II, Gopiballavpur-II, Kharagpur-I and Dantan-I, the indices for all three dimensions are less than district average and these blocks fall mainly in the Jhargram sub-division. Here, it can be noted that all eight blocks in Jhargram subdivision fall in this category. Relatively worse position of Medinipur Sadar block and Kharagpur-I block is partly due to the fact that the indices does not include the municipal areas and partly due to the fact that the *panchayats* of these two blocks are populated mainly with SCs, STs and Minorities in the slum outskirts of the municipalities. Position of different municipalities with respect to human development is discussed in the framework of urbanisation. The majority of the blocks in Kharagpur and Medinipur Sadar subdivisions exhibited unbalanced situation with respect to different indicators of human development. For instance, the Keshiary block, though has succeeded to attain a respectable position with respect to education, has failed to attain any significant level of development in health and economic livelihood and the rank of the block in HDI is 21 in 29 blocks. Thus, more acute is the situation for blocks like Sabang and Pingla. These two blocks secure rank 1 and 2 respectively in education but has failed to translate this into the development in health and economic livelihood. On the opposite side, Chandrakona-II block is well developed with respect to economic livelihood and health but due to its extreme worse position in education fails to attain a commendable position in HDI. In the blocks of these two subdivisions policies should be mainly on translations, whereas in the blocks of Jhargram sub-division policies should be formed for an overall development.

CONCLUSION

Paschim Medinipur provided an endless canvass of opportunities. Featuring in the lower range of all-round development, it was brought under the *Rashtriya Sam Vikas Yojana* of the Planning Commission in 2003-2004 during the Tenth Plan and later included under the Backward Regions Grant Fund in 2006-07 to usher in a series of multi-faceted programs aimed at economic well being of a large section of the district population which was either living below the poverty line or on the edge of subsistence. The surge of LWE (Left-Wing Extremism) activities in some areas of the district bordering Orissa and Jharkhand has posed a great threat not only to the lives and livelihood of the people of this area but also to the spread of developmental activities. It has challenged the basic authority of governance and has compelled the State Government to resort to a control mechanism that may not be populist but effective to check the growth of militancy that erodes the very platform of progress which the State Government is bent to build for betterment of the district and its people.

This district is known to be an advanced district of West Bengal in the context of physical, social and economic development, but it contained within its territory a few backward regions especially, western part which reflected the problems of acute regional disparities among the blocks. One such region situated along the western fringe of south-west West Bengal has been termed as Paschimanchal Unnayan Parshad Area (PUPA). This region has been identified by a high level Committee constituted by the Govt. of West Bengal at the instance of Development and Planning Department of the State in 2000-2001. In this regards, livelihood opportunities are less in the western blocks because of poor irrigation facilities and low productivity of different crops. 11 blocks out of 29 blocks are badly affected with LWE violence and thereby, posing serious challenges for protection of individual life and property, as well as carrying out the development agenda.

RECOMMENDATIONS

Taking into consideration the above multifarious challenges, it is imperative to adopt a time bound strategy to carry out development agenda with special emphasis of development in the western parts of the district.

- As agriculture continues to be major economic activity in the rural areas, special efforts must be made to increase the irrigation potential with emphasis on rain water harvesting and watershed development. The special efforts should be made in promotion of horticulture and other cash crops such as oil seeds, pulses etc. The district produces surplus paddy, potato and vegetables but there are very few facilities for subsequent processing. The special efforts should be made for development of these facilities.

- There is ample scope for promotion of Animal Husbandry activities. The special efforts must be given for promoting goatery and poultry through involvement of SHGs. There is also ample scope for increasing the milk production with induction of new cattle and promoting artificial insemination.
- Availability of credit in the rural areas continues to be a major issue. Hence, it is needed to have more and more SHGs in the rural areas. The special efforts should also be made for promotion of agricultural credit with achieving universal Kisan Credit Cards. This will help in the promotion and adoption of better agriculture inputs.
- Bottlenecks in the rural infrastructure continue to be the major impediment. Hence, it is essential that road network and Rural Electrification should be improved immediately.
- Promoting skill development especially in the tribal areas. In this regard, government efforts should be supplemented with participation of NGOs. Self Help Groups (SHGs) can be the agent of change because they empower the female folk.
- Promoting SHGs, their skill development and credit linkage. Malnutrition continues to be a major challenge. Hence, it is essential to ensure proper running of ICDS centres and creating awareness for proper feeding.
- Promotion of literacy and development of school education, especially, in the remote tribal blocks continue to be a major challenge. The district is already included in the Sakshar Bharat Programme for promotion of adult literacy. Sarva Siksha Mission and Rashtriya Madhyamik Mission are also running in the district for promoting school education but there is need to have more residential schools in the tribal areas and arrangement of supplementary coaching in the higher classes. The absenteeism continues to be a major problem hence; option of engagement of the teachers from the local areas should also be looked into.
- The efforts should also be made for the promotion of safe drinking water availability and proper sanitation facility. This will help in reducing the incidences of water borne diseases. There is a reduced availability of health sector man-power in the western tribal dominated blocks of the district. Simulta-

neously, more number of people is dependent on Government sectors for the proper treatment. Hence, special efforts should be given to the engagement of doctors and other health staff for these blocks. If required, special incentives should be paid for working in the remote areas. Involvement of NGOs should be encouraged.

Ensuring human development in the difficult circumstances is always a challenge. However, challenges will have to be taken, if it is needed to have promote growth with equity and, thereby, ensuring over all well being for all. However, it must be realised that this deprivation has taken place over centuries and hence, it is difficult to have an overnight solution. However, the process must start and proficient personalities must be patient and persistent in these efforts.

LIMITATIONS OF THE STUDY

Human Development is not only related to the environmental resources, its utilization through overall economic activities but also to the quality and vision of governance. The macro variables including policy changes also affect the level and pattern of human development. On the basis of three indices like education index, health index and economic livelihood index this paper is to examine the level and pattern of human development across the district of Paschim Medinipur, to discuss diverse issues including the measurement of attributes and parameters to human development and to analyse the variations and finally to suggest the measures for narrowing down the variation in human development. Except these three indices there are also some important indices like equity, sustainability, productivity, empowerment, cooperation and security have not taken into consideration in the present research. Except that the present research carries lack of information regarding ecological contemplations, lack of contemplations of technological development or contributions to the human civilization, focusing absolutely on national performance and level, lack of concentration to improvement from a global viewpoint.

FURTHER STUDY

There are six basic pillars of human development: equity, sustainability, productivity, empowerment, cooperation and security. The re-

searchers suggested that to calculate the complete and holistic Human Development Index (HDI) in a particular region the below mentioned point should be incorporated with the calculation procedure.

- How equity is the idea of fairness for every person, between men and women?
- How do we all have the sustainability right to earn a living that can sustain our lives and have access to a more even distribution of goods?
- How does productivity state the full participation of people in the process of income generation?
- How and when empowerment is the freedom of the people to influence development and decisions that affect their lives?
- How does cooperation stipulate participation and belonging to communities and groups as a means of mutual enrichment and a source of social meaning?

- How does security offer people development opportunities freely and safely with confidence?

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