



INTER-BLOCK DISPARITY IN AGRICULTURAL DEVELOPMENT OF GADCHIROLI DISTRICT

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ABSTRACT

To measure the inter-block disparity in Gadchiroli District composite index has been calculated. The main objective of this study is to estimate level of development at blocks level. The individual indicator can not give perfect picture of development so that all inter-linked indicators have been combined to measure the level of development. The Chamorshi block is highly developed in Gadchiroli district and Bhamragad is the lowest developed block in Gadchiroli District. Relative share of area and population has been explained as per development level in the agriculture sector.

Key words:

Composite index, Development indicator, relative share of area and population.

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INTRODUCTION

Development is a multi-dimensional continues process that improves the life of people. Development can not be measured using an individual indicator of blocks. Government is taking various measures to improve the productivity of agriculture production and standard of life since 1st five year plan.

Gadchiroli is the one of the backward district in Maharashtra state. As per the census 2011 total population of the district is 1072942. Population of sheduled caste and sheduled caste in the district is 120754 and 415306 respectively. The tribal population that resides in the district is 38.17 per cent of the total population. District rank is the highest in terms of sex ratio which is 982 in the state. The district is known for low population dencity which is 74 per square kilometers. Total forest area is 78 per cent of total area of the district. Whole economy is depend on agriculture and forest based produce. Major sources of livelihood are hunting, fishing, farming and collection of minor forest produce. The people of this district mainly produce cereals, pulses and oilseeds crop.

Disparity in agriculture sector is estimated by analysing data using crops yield, fish production and irrigation facilities at block level in gadchiroli. The present study deals with the evaluation of the level of development of the entire 12 blocks in the district by constructing composite index. Nrain *et al.* (2007) gave method to calculate weighted composite index. The present study attempts to evaluate the inter-blocks disparity in agriculture sector of Gadchiroli District.

Development indicators

To analyze the level of development indicators have been given below:

- Production of Cereals
- Production of pulses

- Production of oilseeds
- Production of fish
- Area under fishery
- No of wells for irrigation
- Total No. of Agriculture pumps
- Consumption of electricity in agriculture

Total 9 indicators included in this study. Different Indicators have been taken for all blocks. All indicators are related to agriculture sector.

METHOD OF ANALYSIS

Many indicators have been combined in one composite index to understand the level of agriculture development of the blocks. The blocks have been taken as a unit of analysis. In this study Narain *et al.* (2007) method used to calculate composite indices of blocks. Total 12 blocks are included to analyze the level of development. The data has been taken from Directotote of Economics and Statistics, Maharashtra State, India of the year 2014-15 and census of india(2011).

Let $[X_{ij}]$, $i = 1, 2, \dots, n$ (number of area unit); $j = 1, 2, \dots, k$ (number of indicators), is a data matrix that comes from different units of measurement and the objective is to arrive at a single composite index. There is a need for standardization of the indicators.

$$Z_{ij} = \frac{X_{ij} - \bar{X}_j}{S_j}$$

Where \bar{X}_j = mean of jth indicator

S_j = Standard deviation of jth indicator

$[Z_{ij}]$ denotes the matrix of standardized indicators, where $i = 1, 2, \dots, n$ and $j = 1, 2, \dots, k$. From $[Z_{ij}]$ identify the best block for each indicator. Let it be denoted by as $[Z_{oj}]$ and from this the deviations of the value for each block is taken. This procedure is to be adopted for all the indicators. Where Z_{oj} is

the standardized value of the jth indicator of the best block. To calculate the pattern of development C_i of ith blocks, first calculate P_{ij} . They are defined as follows:

$$P_{ij} = (Z_{ij} - Z_{uj})^2$$

Pattern of development is given by

$$C_i = \frac{\sum_{j=1}^n P_{ij}^{1/2}}{CV_j}$$

CV_j = Coefficient of variation in X_{ij} for the jth indicator. While computing composite indices coefficient of variation is taken as weight. The composite index of development is now computed for each block using the following formula:

$$D_i = \frac{C_i}{C}$$

$$C = \bar{C} + 3S$$

$$\bar{C} = \frac{\sum_{i=1}^n C_i}{n}$$

$$S = \left[\frac{\sum_{i=1}^n (C_i - \bar{C})^2}{n} \right]^{1/2}$$

C = mean of C_i

S = Standard deviation of C_i

D_i gives the composite index of development. Smaller Value of D_i will indicate high level of development and higher value of D_i will indicate low level of development.

Relative share of area and population under different level of development is given by Sangeeta Baruah & M. Borah (2016). Classification of blocks is formed on the basis of mean and standard deviation of the composite indices. It will reveal relative share of area and population under different levels of development. Classification of development blocks on the basis of mean and standard deviation is given below:

1. The blocks having composite index less than or equal to (Mean - SD) - high developed blocks.
2. The blocks having composite index greater than or equal to (Mean + SD) - low developed blocks.
3. The blocks with composite index lying between (Mean and Mean - SD) - middle level developed blocks.
4. The blocks with composite index lying between (Mean and Mean + SD) - developing blocks.

RESULTS AND DISCUSSION

Table 1 presents the composite indices and ranks of various blocks in Gadchiroli District. In this table blocks are ranked on the basis of composite indices which are calculated by Narain *et al.* method. Composite indices values vary from 0.14 to 0.73. It is found out from composite indices that the Chamorshi block is highly developed in agriculture sector and Bhamragad, Korchi and Ettapalli are the low developed blocks.

Table-1 Composite indices and Ranks of all the blocks of Gadchiroli District

S. No.	Blocks	Composite indices as per Narain et al method	Ranks
1	Desaiganj	0.50	5
2	Armori	0.43	3
3	Kurkheda	0.42	2
4	Korchi	0.69	11
5	Dhanora	0.53	6
6	Gadchiroli	0.45	4
7	Chamorshi	0.14	1
8	Mulchera	0.60	9
9	Ettapalli	0.67	10
10	Bhamragad	0.73	12
11	Aheri	0.59	8
12	Sironcha	0.54	7

Table -2 Different level of development of agriculture sector

Sector	Level of Development	No of Blocks	Population %	Area %
Agriculture	High (0.36)	1	17	9
	Middle (0.37-0.52)	4	38	19
	Developing (0.53-0.67)	5	37	57
	Low (0.68)	2	7	15

From table No 2, it is found that 17 % population and 9 % area is under high development. The Chamorshi block is highly developed in agriculture. About 38 % population and 19 % area come under middle level of development. In agriculture sector population and area which is developing is about 37% and 57 % respectively. About 7% population and 15% area come under low development in agriculture. Bhamragad and Korchi is low development block found out in this study.

Table-3 Comparative categorization of blocks

Sector	High developed block	Middle developed blocks	Developing blocks	Low developed blocks
Agriculture	Chamorshi	Kurkheda, Armori, Gadchiroli,Desaiganj	Dhanora, Sironcha, Aheri, Mulchera, Ettapalli	Korchi, Bhamragad

Table 3 gave a clear idea about the level of development in agriculture sector. The results of the present study show that Chamorshi block is highly developed. Kurkheda, Armori, Gadchiroli and Desaiganj are middle developed blocks. Dhanora, Sironcha, Aheri, Mulchera and Ettapalli are developing blocks. Korchi and Bhamragad are low developed blocks in Gadchiroli district.

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