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Dimensions of Regional Disparities in Socio-Economic Development of Madhya Pradesh[1]

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SUMMARY

The level of development of various districts of Madhya Pradesh was estimated with the help of composite index based on optimum combination of socio-economic indicators. All the forty five districts of the State have been included in the study. The data for the year 1994-95 on forty seven socio-economic indicators have been used. The level of development was separately estimated for agricultural, industrial, infrastructural and socio-economic fields. Out of forty seven indicators included in the study, twenty three indicators are directly connected with agricultural development, six indicators depict the progress of development in industrial sector and the rest eighteen indicators present the level of development in infrastructural service sector.

The district of Raisen was found to rank first and that of Sidhi was the last in the level of socio-economic development. Wide disparities in the level of development were observed in different districts. Positive significant association was found between the levels of agricultural, industrial and socio-economic developments. Infrastructural facilities are influencing the growth and progress of agricultural, industrial and socio-economic development in the positive direction.

For bringing about uniform regional development, model districts have been identified and potential targets for various indicators have been estimated for low developed districts. These districts require improvement of various dimensions in most of the indicators for enhancing the level of over all socio-economic development.

Key-words : Composite index, Development indicators, Model districts, Potential targets, Regional disparities.

[1] This research work was carried out in Indian Society of Agricultural Statistics during 2001 and its methodology and findings were presented during the 55th Annual Conference of the Society held at CIAE and IISS, Bhopal on 16 January, 2002.

1. Introduction

Development is a process which improves the quality of life. It requires a balanced human resource development in the country. Development of social sector along with technology absorption in agriculture and industry which are the principal sectors of our economy, could be considered as the primary objective of any economic development efforts. The developmental programmes have been taken up in the country in a planned way through various Five Year Plans with the main objective of enhancing the quality of life of people by providing the basic necessities as well as effecting improvement of 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 disparities in terms of economic development is not declining over time.

For focussing the attention of scientists, planners, policy makers and administrators on the regional disparities of socio-economic development in the country, a seminar was organized jointly by the Planning Commission, Government of India and State Planning Institute, Government of Uttar Pradesh from April 22 to 24, 1982. Realizing the seriousness and importance of the problems of estimation of level of development, the Indian Society of Agricultural Statistics conducted a series of research studies in this direction. The data regarding the socio-economic variables in respect of major 17 states of the country had been critically analyzed for the years 1971-72 and 1981-82 [1991, 1992] and wide disparities in the level of development were observed between different states. It was, therefore, felt necessary to make a deeper analysis using the district level data for socio-economic indicators for evaluating the imbalances of development in the states. The district level data had so far been analyzed for the states of Orissa [1992, 1993], Andhra Pradesh [1994], Kerala [1994], Uttar Pradesh [1995], Maharashtra [1996], Karnataka [1997] and Tamil Nadu [2000]. A study on the evaluation of inter-district variation of development in southern region was conducted in [1999]. Disparities in crop productivity in Uttar Pradesh were estimated by analyzing the tehsil-wise yield data [2001]. On detailed examination of the level of development of low developed districts, it was found that the entire areas of some of the districts are not backward but some parts are also well or middle level developed. This year, an attempt has been made to quantify the levels of socio-economic development of different districts of Madhya Pradesh and classify the districts on the basis of their developmental indices.

Madhya Pradesh came into existence on November 1, 1956. The State is surrounded by seven states. It is bounded by Rajasthan on the north-west, by Uttar Pradesh on the north, by Bihar on the north-east, by Orissa on the east, by Andhra Pradesh and Maharashtra on the south and Gujarat on the west. About 24 per cent population of the State belongs to the categories of scheduled tribes

and 14 per cent belongs to scheduled caste. One-fifth part of the total population of scheduled tribes of the country live in Madhya Pradesh. The State is predominantly rural and agrarian. The growth of population from 1981 to 1991 is of the order of 27 per cent. The estimated annual birth rate at the State level is 30.7 and the crude death rate is 10.6. The literacy rate at the State level is about 44 per cent which is much below than the all India level of 52 per cent. About 80 per cent of its population live in rural areas. In all, 43.7 per cent of the land area is cultivable of which only 16.6 per cent is irrigated. The Malva region abounds in rich black cotton soil, lowlying areas of Gwalior, Bundelkhand and Baghelkhand and the Chhattisgarh plains have a higher sandy soil while the Narmada valley is formed of rich alluvial deposits. About 18 per cent cultivated area is sown more than once. The culturable land per agricultural worker in the State is about 1.38 hectares which is higher than the all India average of 1.12 hectares. The principal crops are rice, wheat, and pulses. The productivities of both rice and wheat are less than the all India average.

Economic regeneration attempted in successive Five Year Plans in the State has made agriculture a pride of the State economy. This sector today provides livelihood to about 70 per cent of the labour force. The programmes for rural development have to be specific in its objectives to bring about a directional change and uniform agricultural development. The present study deals with evaluation of the levels of development in agriculture, industry, infrastructural facilities and overall socio-economic fields by constructing the composite index of development at district level in the State of Madhya Pradesh. It would be of interest to measure the level of development at district level since there has been a growing consensus about the need of district level planning. A knowledge of the level of development at district level will help in identifying where a given district stands in relation to others. The study also throws light on the relationships of socio-economic development with the developments in agriculture, industry, infrastructural facilities and the literacy status of various districts of the State. On the basis of distances and composite indices of development, model districts have been identified for fixing up the potential targets of different indicators for low developed districts.

2. Method of Analysis

The impact of development cannot be evaluated fully by any single indicator because it is a multi-dimensional process. Moreover, a number of indicators when analyzed individually, do not provide an integrated and easily comprehensible picture of reality. Hence, there is a need for building up of a composite index of development based on various indicators combined in an optimum manner. For this study, districts have been taken up as the unit of analysis. All the 45 districts of Madhya Pradesh (including Chhattisgarh) have been included in the analysis. The study utilizes data for the year 1994-95 on forty seven indicators out of which twenty three indicators are directly

concerned with agricultural development, six indicators depict the progress of development in industrial sector and the rest eighteen indicators present the level of development in infrastructural and service sector.

2.1 Developmental Indicators

Each district faces situational factors of development unique to it as well as common administrative and financial factors. Indicators common to all the districts have been included in the analysis for evaluating the level of development. The composite indices have been obtained for different districts by using the data on the following developmental indicators.

1. Percentage forest area
2. Per person area sown (ha)
3. Percentage net area sown
4. Percentage of double cropped area to net area sown
5. Percentage of net area irrigated to net area sown
6. Production of foodgrains (per person in kg)
7. Fertilizer applied (per hectare area sown in kg)
8. Value of per hectare agricultural production ('00 Rs)
9. Productivity of rice (kg/ha)
10. Productivity of total cereals (kg/ha)
11. Productivity of wheat (kg/ha)
12. Number of electric pumpsets (per 1000 ha. of area sown)
13. Number of cooperative societies (per lakh cultivators)
14. Loan given by cooperative societies (per cultivator)
15. Number of cooperative banks
16. Number of tractors (per 10,000 ha. net area sown)
17. Number of beneficiaries under IRDP
18. Percentage of uneconomical land
19. Number of cows (per '000 persons)
20. Number of buffaloes (per '000 persons)
21. Number of sheep (per '000 persons)
22. Number of goats (per '000 persons)
23. Number of poultry (per '000 persons)
24. Number of registered factories (per lakh population)
25. Number of employees in working factories (per lakh population)

26. Percentage of villages electrified
27. Electricity consumption (per person in kw/hour)
28. Number of commercial banks (per lakh population)
29. Per person loan given by commercial banks (Rs.)
30. Number of allopathic hospitals (per lakh population)
31. Number of beds in hospitals (per lakh population)
32. Number of primary health centres (per lakh population)
33. Length of roads (in km. per 100 sq. km. area)
34. Number of registered vehicles (per '000 population)
35. Number of telephone connections (per lakh population)
36. Number of post offices
37. Literacy percentage
38. Number of primary schools (per lakh population)
39. Number of students per primary school
40. Number of persons employed through employment exchange (per '000 registered persons)
41. Number of problem villages
42. Population density per square km.
43. Population growth rate (1981–1991)
44. Percentage urbanization
45. Percentage main workers
46. Percentage SC and ST population
47. Sex ratio

A total of 47 developmental indicators have been included in the analysis. These indicators may not form an all inclusive list but these are the major interacting components of development in the State.

2.2 Estimation of Composite Index of Development and Fixation of Potential Targets

Variables in respect of different indicators come from various population distributions and these are recorded in different levels of measurement. The values of the variables are not quite suitable for simple additions in combined analysis. Hence variables are transformed and standardized and their standardized values are used to build up the composite index of development. The best value of transformed variable for each indicator (with maximum/minimum value depending upon the direction of the impact of indicator on development) is identified and the squares of the deviations of the

transformed variables from the corresponding best values are obtained for each indicator. The inverse of its coefficient of variation is used as weight for obtaining the pattern of development. The statistical technique given by Narain *et al.* ([1], [6], [10]) are applied to construct the composite index of development of each district. The composite indices have been obtained separately for agricultural, industrial, infrastructural and socio-economic developments for different districts. The value of composite index is non-negative and lies between zero and one. A value close to zero indicates higher level of development whereas a value close to one indicates lower level of development.

The development distances based on all the indicators have been obtained for each pair of districts and model districts have been identified on the basis of composite index of development and development distances. Model districts are better developed districts and the best values of different indicators of model districts have been taken as potential targets for low developed districts.

3. Results and Discussion

3.1 The Level of Development

The composite indices of development have been worked out for different districts separately for agricultural sector, industrial sector, infrastructural service sector and overall socio-economic sector. The districts have been ranked on the basis of development indices. The composite indices of development along with the district ranks are given in Table 1.

Table 1. Composite index of development

S.No.	District	Agriculture		Industry		Infrastructure		Socio-Economic	
		C.I.	Rank	C.I.	Rank	C.I.	Rank	C.I.	Rank
01.	Bastar	0.82	35	0.82	45	0.81	11	0.88	32
02.	Betul	0.78	29	0.81	33	0.87	32	0.88	33
03.	Bhopal	0.83	37	0.71	03	0.74	04	0.80	05
04.	Raisen	0.73	21	0.34	01	0.87	31	0.67	01
05.	Rajgarh	0.78	25	0.79	16	0.86	25	0.87	22
06.	Sehore	0.64	04	0.80	22	0.84	16	0.84	13
07.	Vidisha	0.74	22	0.80	27	0.86	24	0.87	23
08.	Bilaspur	0.79	31	0.80	28	0.84	17	0.87	27
09.	Raigarh	0.78	24	0.80	29	0.84	18	0.87	25
10.	Sarguja	0.86	41	0.81	38	0.86	23	0.90	38
11.	Bhind	0.72	19	0.81	30	0.89	37	0.87	29
12.	Morena	0.69	14	0.81	40	0.89	38	0.87	28
13.	Datia	0.67	10	0.79	17	0.86	28	0.85	21

S.No.	District	Agriculture		Industry		Infrastructure		Socio-Economic	
		C.I.	Rank	C.I.	Rank	C.I.	Rank	C.I.	Rank
14.	Guna	0.80	33	0.81	34	0.86	27	0.88	34
15.	Gwalior	0.61	02	0.75	05	0.74	02	0.77	03
16.	Shivpuri	0.72	18	0.81	37	0.86	26	0.87	24
17.	Hoshangabad	0.59	01	0.78	14	0.84	15	0.82	09
18.	Dhar	0.66	09	0.78	11	0.83	14	0.82	10
19.	Indore	0.62	03	0.68	02	0.74	03	0.74	02
20.	Jhabua	0.86	40	0.82	43	0.89	39	0.91	43
21.	Khandwa	0.70	16	0.77	10	0.81	12	0.83	11
22.	Khargone	0.69	15	0.80	24	0.80	09	0.84	14
23.	Balaghat	0.78	26	0.81	35	0.88	35	0.89	35
24.	Chhindwara	0.72	20	0.79	18	0.81	10	0.84	16
25.	Jabalpur	0.86	42	0.75	06	0.79	08	0.85	19
26.	Mandala	0.91	45	0.82	44	0.88	36	0.92	44
27.	Narsinghpur	0.64	06	0.78	13	0.87	30	0.84	15
28.	Seoni	0.85	39	0.81	32	0.88	34	0.90	39
29.	Durg	0.78	27	0.77	09	0.82	13	0.85	20
30.	Raipur	0.71	17	0.78	12	0.84	19	0.84	17
31.	Rajanandgaon	0.79	30	0.80	26	0.89	40	0.89	37
32.	Rewa	0.83	36	0.80	23	0.91	44	0.90	40
33.	Satna	0.81	34	0.79	19	0.86	29	0.88	30
34.	Shahdole	0.91	44	0.81	31	0.87	33	0.91	42
35.	Sidhi	0.87	43	0.82	41	0.92	45	0.92	45
36.	Chhatarpur	0.75	23	0.81	39	0.85	21	0.87	26
37.	Damoh	0.78	28	0.80	25	0.90	41	0.89	36
38.	Panna	0.84	38	0.81	36	0.91	43	0.91	41
39.	Sagar	0.79	32	0.79	20	0.65	01	0.81	08
40.	Tikamgarh	0.69	12	0.82	42	0.90	42	0.88	31
41.	Dewas	0.69	13	0.76	07	0.85	20	0.83	12
42.	Mandsaur	0.64	05	0.78	15	0.78	06	0.81	07
43.	Ratlam	0.65	08	0.77	08	0.77	05	0.80	06
44.	Shajapur	0.65	07	0.79	21	0.85	22	0.84	18
45.	Ujjain	0.68	11	0.74	04	0.79	07	0.80	04

It may be seen from the table that out of 45 districts of the State, the district of Hoshangabad was ranked first and the district of Mandala was ranked last in agricultural development. The values of composite indices varied from 0.59 to 0.91. In the case of industrial development, the district of Raisen was ranked first and the district of Bastar was ranked last. The composite indices varied from 0.34 to 0.82. With regard to infrastructural facilities, the district of Sagar was found to have the first rank in the State whereas the district of Sidhi was ranked at the last position. The composite indices varied from 0.65 to 0.92. In case of overall socio-economic development, the district of Raisen occupied the first place in the State and the district of Sidhi was found to be at the last position. The composite indices varied from 0.67 to 0.92. Five most developed districts in the State are Raisen, Indore, Gwalior, Ujjain and Bhopal and five least developed districts are Sidhi, Mandala, Jhabua, Shahdole and Panna.

3.2 Relative Share of Area and Population Under Different Levels of Development

A simple ranking of districts on the basis of composite indices would be sufficient for classificatory purposes. A suitable fractile classification of the districts from the assumed distribution of the mean of the composite indices will provide a more meaningful characterization of different stages of development. The fractile groups can be used to classify the various stages of development. For relative comparison, it appears appropriate to assume that the districts having composite index less than or equal to (Mean – SD) are highly developed and these districts are classified in category-I of developed districts and the districts having composite index greater than (Mean + SD) are low developed and are classified in category-IV of low developed districts. Districts with composite index lying between (Mean) and (Mean – SD) are medium level developed and these districts are put in category-II and the districts with composite index lying between (Mean) and (Mean + SD) are classified in category-III as developing districts.

An important aspect of the study is to find out the relative share of area and population affected under different levels of development in the State. The details regarding area, population and population density are given in Table 2 under different levels of agricultural development, industrial development, infrastructural facilities and overall socio-economic development.

Table 2. Area, population and population density under different levels of development

Level of Development	No. of Districts	Area (%)	Population (%)	Population density (No. of persons/sq. km.)
		Agriculture		
High	09	13.5	16.7	185
Medium	13	28.9	29.8	154
Developing	15	36.6	35.4	144
Low	08	21.0	18.1	128
		Industry		
High	06	08.3	14.4	259
Medium	15	29.2	33.0	169
Developing	24	62.5	52.6	126
Low	–	–	–	–
		Infrastructural Facilities		
High	08	12.0	19.4	242
Medium	11	36.6	34.1	139
Developing	21	43.2	38.2	132
Low	05	08.2	08.3	151
		Socio-Economic		
High	10	15.7	20.7	196
Medium	11	23.2	27.3	176
Developing	16	41.0	35.6	130
Low	08	20.1	16.4	122

With regard to socio-economic development, ten districts namely Bhopal, Raisen, Gwalior, Indore, Ratlam, Ujjain, Hoshangabad, Dhar, Sagar and Mandsaur were found to be better developed in comparison to other districts of the State. These districts are put in the category I of high developed districts. The area and population covered by these districts are 15.7 per cent and 20.7 per cent respectively. Population density in the area is about 196 persons per sq.km. Similarly, eight districts namely Sarguja, Jhabua, Mandala, Seoni, Rewa, Shahdole, Sidhi and Panna are found to be low developed. The area and population covered by these districts are 20.1 per cent and 16.4 per cent respectively. The population density of these districts is about 122 persons per sq. km. which is quite low as compared to other districts of the State. Eleven districts namely, Sehore, Datia, Khandwa, Khargaon, Chhindwara, Jabalpur, Durg, Narsinghpur, Raipur, Dewas and Shajapur covering about 23.2 per cent

area and 27.3 per cent population of the State are classified as medium level developed districts. The population density of these districts is about 176 persons per sq. km. The remaining 16 districts covering about 41.0 per cent area and 35.6 per cent population are found to be in developing stage. The population density in the area is about 130 persons per sq.km. It may be seen that high developed districts of the State are more thickly populated as compared to medium or low developed districts.

As regards agricultural development, nine districts namely Sehore, Gwalior, Hoshangabad, Dhar, Indore, Narsinghpur, Mandsaur, Ratlam and Shajapur are found to be highly developed. The area and population covered by these districts are 13.5 per cent and 16.7 per cent respectively. Population density in the area is about 185 persons per sq.km. Similarly, eight districts namely Sarguja, Jhabua, Jabalpur, Mandala, Seoni, Shahdole, Siddhi and Panna are found to be low developed. The area and population covered by these districts are about 21.0 per cent and 18.1 per cent respectively. The population density in the area is about 128 persons per sq. km. Fifteen districts namely, Bastar, Betul, Bhopal, Rajgarh, Bilaspur, Raigarh, Guna, Balaghat, Durg, Rajanandgaon, Rewa, Satna, Chhattarpur, Damoh and Sagar are in the developing stage and the area and population covered by these districts are 36.6 per cent and 35.4 per cent respectively. The population density in the area is about 144 persons per sq.km. The remaining thirteen districts covering about 28.9 per cent area and 29.8 per cent population and having population density of 154 persons per sq. km. are medium level developed. The high and medium developed districts in agricultural sector are having greater proportion of population in comparison to their area. The population density of these districts is higher than the low developed and developing districts.

In case of industrial development, six districts namely Bhopal, Raisen, Gwalior, Indore, Jabalpur and Ujjain are found to have high development index. These districts cover about 8.3 per cent area and 14.4 per cent population. The population density in the area is about 259 persons per sq. km. Fifteen districts namely, Hoshangabad, Dhar, Khandwa, Narsinghpur, Durg, Raipur, Dewas, Mandsaur, Ratlam, Rajgarh, Datia, Chhindwara, Satna, Sagar and Shajapur covering about 29.2 per cent area and 33.0 per cent population are found to be medium level developed. The population density of these districts is about 169 persons per sq. km. which is very much less than the population density of highly developed districts. The remaining 24 districts covering about 62.5 per cent area and 52.6 per cent population are at the developing stage. The population density in the area is about 126 persons per sq. km.

Infrastructural facilities are extremely essential for improving the level of rural development which depends on agricultural growth, economic and social infrastructural facilities, provision for public health, education, functional literacy, transport and communication systems. With respect to infrastructural

facilities, eight districts namely Bhopal, Gwalior, Indore, Jabalpur, Sagar, Mandsaur, Ratlam and Ujjain are highly developed. The area and population covered by these districts are 12.0 per cent and 19.4 per cent respectively. The population density in the area is about 242 persons per sq. km. On the other hand, five districts namely Rewa, Siddhi, Damoh, Panna and Tikamgarh are low developed. The area and population covered by these districts are about 8.2 per cent and 8.3 per cent respectively. The population density in the area is about 151 persons per sq.km. Eleven districts namely, Bastar, Sehore, Bilaspur, Raigarh, Hoshangabad, Dhar, Khandwa, Khargaon, Chhindwara, Durg and Raipur are middle level developed. The area and population covered by these districts are 36.6 per cent and 34.1 per cent respectively. The population density in the area is about 139 persons per sq. km. The remaining 21 districts are at developing stage. The area and population covered by these districts are 43.2 per cent and 38.2 per cent respectively. The population density is about 132 persons per sq. km.

Enhancement in the level of agricultural and industrial development and also execution of comprehensive anti-poverty programmes should be undertaken in the State for improvement of socio-economic conditions of the people in the rural areas.

3.3 Inter-Relationship Among Different Sectors of Economy

For proper development and better level of living, it is essential that agriculture and industry must flourish together in the State because industries provide basic inputs for agricultural improvement and use agricultural produce as the principal raw material for producing finished goods. Similarly system of education envisages all round development of manpower and human resources required for various socio-economic activities. A large population below an acceptable economic level poses serious problems for a state like Madhya Pradesh. Massive poverty in the State particularly in rural areas, characterizes its economy. The correlation coefficients between agricultural, industrial, infrastructural facilities, socio-economic developments and literacy level are given in Table 3.

The correlation coefficients between the socio-economic development and infrastructural facilities such as health services, education system, communication, construction of road and road transport etc. as well as between agricultural and socio-economic development and industrial and socio-economic development are observed to be quite high and these are statistically highly significant. This is expected since the progress in agricultural and industrial developments as well as infrastructural facilities are very much influencing the socio-economic development in the State. Infrastructural facilities also have great influence in enhancing the agricultural and industrial developments and literacy level in the State. The correlation coefficient between the infrastructural

facilities and agricultural and industrial developments as well as between infrastructural facilities and literacy rate are very high and these are statistically highly significant. The correlation coefficient between agricultural development and literacy rate is moderately high and it is found to be statistically significant at 0.05 probability level. It may be concluded that agricultural, industrial and socio-economic developments in the State have played a positive role in increasing the literacy rate. Infrastructural facilities are influencing the growth and progress of developments of different sectors of economy in the positive direction.

Table 3. Correlation coefficients

Factors	Agricultural Development	Industrial Development	Infrastructural Development	Socio-Economic Development	Literacy
Agricultural Development	1	0.495**	0.409**	0.726**	–0.294*
Industrial Development		1	0.617**	0.835**	–0.634**
Infrastructural Development			1	0.799**	–0.417**
Socio-Economic Development				1	–0.504**
Literacy					1

* Significant at 0.05 probability level.

** Significant at 0.01 probability level.

3.4 Model Districts and Potential Targets for Low Developed Districts

It is quite interesting and useful to examine the extent and nature of improvement required in various indicators of the low developed districts because it will provide avenues to bring about uniform regional development in the State. Such information may help the planners and administrators to readjust the resources for reducing the disparities in the levels of development among different districts of the State. For evaluation of developmental activities and estimation of potential targets of different indicators, model districts have been identified for low developed districts. The identification of model districts has been made on the basis of composite index of development and developmental distances between different districts. Eight districts covering 20 per cent area and 16 per cent population of the State are observed to be low developed in respect of overall socio-economic development. List of model districts for low developed districts is given in Table 4.

Table 4. List of Model Districts for Low Developed Districts

Low Developed Districts	Model Districts
1. Sarguja	Bastar, Betul, Bilaspur, Raigarh, Balaghat, Chhindwara, Rajanandgaon
2. Jhabua	Dhar, Khargone
3. Mandala	Betul, Raigarh, Balaghat, Chhindwara, Rajanandgaon
4. Seoni	Betul, Rajgarh, Raigarh, Guna, Khandwa, Balaghat, Chhindwara, Rajanandgaon, Satna, Damoh
5. Rewa	Sehore, Hoshangabad, Dhar, Khandwa, Khargone, Chhindwara, Narsinghpur, Raipur, Sagar, Dewas, Mandsore, Shajapur, Ujjain
6. Shahdole	Bilaspur, Raigarh, Balaghat, Chhindwara, Rajanandgaon, Satna, Chhattarpur, Damoh
7. Sidhi	Betul, Guna, Shivpuri, Satna, Chhattarpur, Damoh
8 . Panna	Betul, Rajgarh, Balaghat, Chhindwara, Rajanandgaon, Satna, Chhattarpur, Damoh, Tikamgarh

Model districts are better developed in comparison to low developed districts. It is observed that the districts of Betul, Raigarh, Balaghat, Chhindwara, Rajanandgaon and Satna are model districts in socio-economic development for most of the low developed districts. The best values of developmental indicators of model districts will be taken as potential targets for low developed districts. Improvements needed in various developmental indicators for low developed districts are given in Table 5.

Table 5. Improvement required in low developed districts for different indicators

S.No.	Development Indicators	Sarguja	Jhabua	Mandala	Seoni	Rewa	Shahdole	Sidhi	Panna
01.	Net area sown (%)	27 (45)	53 (61)	33 (45)	43 (67)	59 (78)	34 (59)	36 (57)	34 (67)
02.	Net area irrigated (%)	05 (44)	16 (33)	03 (44)	19 (44)	23 (75)	07 (44)	13 (40)	19 (62)
03.	Food production (per person)	200 (318)	192 (249)	132 (318)	196 (318)	226 (389)	158 (318)	171 (285)	222 (318)
04.	Productivity of rice (kg/ha)	97 (141)	62 (73)	70 (141)	115 (141)	55 (121)	64 (141)	61 (117)	57 (141)

S.No.	Development Indicators	Sarguja	Jhabua	Mandala	Seoni	Rewa	Shahdole	Sidhi	Panna
05.	Productivity of wheat (kg/ha)	100 (170)	200 (210)	60 (170)	70 (180)	110 (270)	80 (170)	90 (200)	110 (210)
06.	Cooperative Societies (per lakh cultivator)	21 (49)	19 (41)	22 (49)	26 (87)	69 (107)	29 (87)	31 (87)	65 (87)
07.	No. of cows (per thousand persons)	135 (174)	106 (117)	124 (174)	72 (174)	123 (154)	144 (181)	175 (181)	191 (193)
08.	No. of buffaloes (per thousand persons)	29 (42)	44 (73)	23 (42)	22 (111)	45 (107)	34 (86)	51 (86)	74 (111)
09.	No. of factories (per lakh population)	02 (16)	06 (30)	05 (16)	08 (17)	06 (33)	07 (17)	02 (17)	02 (16)
10.	Employees in factories (per lakh population)	24 (647)	192 (577)	128 (647)	104 (1014)	201 (1260)	146 (647)	54 (553)	38 (647)
11.	Villages electrified (%)	87 (99)	97 (99)	92 (99)	95 (99)	88 (99)	91 (99)	98 (99)	97 (99)
12.	Primary health centres (per lakh population)	05 (06)	04 (05)	05 (06)	04 (06)	03 (06)	04 (06)	03 (05)	03 (06)
13.	Length of roads (km./'00 sq. km. area)	11 (23)	26 (29)	19 (23)	15 (30)	29 (32)	16 (30)	20 (30)	13 (30)
14.	Registered vehicles ('000 population)	16 (24)	06 (19)	05 (20)	13 (24)	21 (47)	11 (24)	09 (24)	06 (24)
15.	Literacy level (%)	30 (53)	19 (36)	37 (53)	44 (53)	45 (56)	35 (53)	29 (46)	34 (53)
16.	Primary schools (per lakh population)	138 (153)	111 (113)	163 (170)	133 (140)	90 (138)	100 (141)	86 (108)	109 (140)

S.No.	Development Indicators	Sarguja	Jhabua	Mandala	Seoni	Rewa	Shahdole	Sidhi	Panna
17.	Persons employed (per '000 registered persons)	09 (29)	42 (46)	03 (08)	04 (16)	01 (18)	08 (11)	03 (25)	09 (11)
18.	Problem villages	2394 (1284)	2326 (1415)	2053 (1284)	1450 (970)	1743 (879)	1953 (954)	1623 (954)	872 (766)
19.	Population growth rate (1981-1991)	27 (19)	42 (24)	24 (19)	24 (19)	29 (21)	30 (19)	39 (24)	27 (19)
20.	Main workers (%)	36 (49)	39 (41)	47 (49)	41 (49)	34 (44)	38 (49)	38 (42)	35 (49)

NB : Present value of the indicator is given along with the potential value in bracket.

The above table indicates the level of present achievement for various indicators along with the potential targets. It may be seen that potential targets are quite high for some of the indicators and improvements are needed in various developmental programmes for achieving it. Immediate action required for making improvement in the level of development of low developed districts is given below.

Sarguja : The district is low developed in agricultural and industrial developments. Due to lack of irrigation facilities and non-availability of fertilizers, the productivity of rice and wheat is extremely low. Proper medical facilities are not available in the district. Literacy rate is extremely low. About 54 per cent population in the district belongs to scheduled tribes community. Transport and communication systems are extremely poor. Immediate action is required to enhance the agricultural production by providing irrigation facilities and also by using manures and fertilizers. Modern techniques of crop production suitable for dry land agriculture should be advocated in the area. Steps should be taken to enhance the level of standard of living by creating educational institutions and encouraging formal and non-formal educational system in the district and also by providing job opportunities for the local people. Transport and communication systems should be improved and proper medical facilities should be created in the district. Developmental programmes suitable for scheduled caste and scheduled tribes should be undertaken in the district.

Jhabua : The district is low developed in agricultural and industrial sectors. Irrigation facilities are poor in the district which affect the crop productivity adversely. Literacy rate and medical facilities are very poor in the district. The population growth rate from 1981 to 1991 is about 42 per cent which is very high. About 86 per cent population in the district belongs to

scheduled tribes community. Transport and communication systems are not satisfactory. Suitable action should be initiated to enhance the crop production by making proper use of fertilizer and by providing better irrigation facilities. Dry land techniques of improving the crop productivity should also be advocated in the area. For controlling the high growth rate of population, proper health clinic centres and better medical facilities should be provided in the district. The educational backwardness of the district is due to a very low literacy percentage among scheduled tribes and scheduled caste population. Steps should be taken to improve the literacy rate. Effective developmental activities suitable for scheduled caste and scheduled tribes population should be undertaken in the district.

Mandala : The district is backward in agricultural and industrial developments. Only 3 per cent crop area is irrigated and the crop productivity is extremely low. Medical facilities are very poor and literacy rate is quite low. Suitable action is needed to create more irrigation facilities in the district for increasing the crop intensity and productivity. Sixty six per cent population of the district belong to scheduled caste and scheduled tribe communities. Proper educational system should be developed for increasing the literacy rate. Job opportunities might be created in the district for improving the quality of life. Programmes suitable for scheduled tribes and scheduled caste population should be undertaken on the priority basis.

Seoni : The district is backward in agricultural and industrial developments. Crop productivities are very low. Irrigation, fertilizer and other important inputs needed for enhancement of agricultural production are not used. Most of the villages are not connected by roads and there is no electricity. Health clinic and medical facilities are extremely poor in the area. About 37 per cent and 11 per cent population of the district belongs to scheduled tribes and scheduled caste respectively. In absence of industrial establishments in the district, it is suggested that the action for enhancing agricultural productivities might be taken for improving the quality of life of the people. Steps should be taken to create irrigation facilities and popularize the use of fertilizer and other modern techniques of high yielding programmes. Transport and communication system should be improved. Necessary medical facilities may be provided in the district by constructing more primary health centres and hospitals. Employment opportunities may be provided in the district by enhancing the level of education and also by initiating other rural development programmes. Developmental activities suitable to scheduled caste and scheduled tribes population might be initiated in the district.

Rewa : Crop productivities are very low in the district and the industrial development is also of low level. Transport, communication system and medical facilities are poor and literacy rate is low. About 13 and 15 per cent population of the district belongs to scheduled tribes and scheduled caste respectively.

Action should be taken to enhance agricultural production by providing more irrigation facilities. Improvement in transport and communication systems should be made. Job opportunities might be created in the district as a part of developmental activities. Educational system requires improvement for increasing the literacy rate. More attention is required for developmental activities suitable for the progress of scheduled tribes and scheduled caste population.

Shahdole : The district is low developed in agricultural and industrial sectors. Some of the reasons of poor development are lack of proper irrigation facilities, availability and use of fertilizer for crop production, poor cropping intensity, non-availability of cooperative societies and banks for giving agricultural loans, very low literacy rate, poor transport and communication systems, non-availability of proper medical facilities. The district should be developed for dry land agriculture. Road transport and communication systems should be improved. Immediate action is required to connect more villages by roads and also electrify them. Proper medical facilities should be provided in the district. About 46 and 8 per cent population of the district belongs to scheduled tribes and scheduled caste respectively. Developmental programmes and activities suitable to these communities should be undertaken in the district. For enhancing the literacy rate, proper educational system should be developed and the people should be encouraged for taking formal and non-formal education. Adequate job opportunities should be created in the district for reducing the incidence of rural poverty.

Sidhi : With respect to agricultural and industrial development, the district is found to be poorly developed. Adequate irrigation facilities are not available and the chemical fertilizer and other modern techniques of cultivation are not used. The crop yield is extremely low. Road transport, medical facilities and communication systems in the district are very poor and literacy rate is extremely low. About 30 per cent and 11 per cent population of the district belongs to scheduled tribes and scheduled caste respectively. Steps are needed to improve the level of agricultural production by providing more useful irrigation facilities and also encouraging the cultivators to use fertilizers and other important inputs of crop production. Adequate transport and medical facilities should be created in the district. Proper care should be taken to enhance the level of literacy in the district. Job opportunities should be created in the district for improving the quality of life of rural people. Developmental programmes suitable to scheduled tribes and scheduled caste population might be undertaken and the local people should be encouraged to participate in the planning activities.

Panna : The district is backward in agricultural and industrial developments. Crop productivities are very low due to shortage of irrigation facilities and non-availability of fertilizer. Transport and communication

systems are poor and medical facilities are insufficient to meet the needs of local people in the district. Literacy rate is very poor. About 15 per cent and 20 per cent population of the district belongs to scheduled tribes and scheduled caste respectively. Steps should be taken to improve the irrigation facilities and also to provide fertilizer and other important inputs for high crop yield. Action is needed to improve the transport and medical facilities in the district. Immediate action is required to enhance the level of literacy rate in the district.

Most of the low developed districts are having higher percentage of scheduled tribes and scheduled caste population. These districts require improvement of different magnitude in various developmental indicators. Developmental activities and programmes suitable for the uplift of scheduled tribes and scheduled caste population should be undertaken in these districts. It is found that entire areas of the low developed districts are not backward but some parts are middle level or high level developed. In order to give location specific recommendations, data for smaller level (say tehsil or block) are needed for conducting the study.

4. Conclusions

The broad conclusions emerging from the study are as follows

(i) With respect to over all socio-economic development, ten districts mostly belonging to north-western and central parts of the State are found to be better developed as compared to other districts of the State. Eight districts mostly coming from north-eastern part of the State are found to be very low developed.

(ii) Regarding agricultural development, nine districts are better developed. Most of these districts come from the north-western and central part of the State. Eight districts mostly belonging to north-eastern part of the State are found to be low developed.

(iii) In industrial development, six districts are found to be better developed and twenty four districts are at the developing stage.

(iv) The overall socio-economic development is found to be positively associated with agricultural and industrial developments. The growth and progress in agriculture and industry are influencing the over all socio-economic development in the positive direction. The infrastructural facilities have positive impact on over all socio-economic development. These facilities are also benefiting the developments in agricultural and industrial sectors. Agricultural developments along with the better facilities for education, health services, banking, road transport and communication systems will enhance the level of over all socio-economic development in the State.

(v) The over all socio-economic development along with agricultural and industrial developments are found to enhance the level of literacy in the State. Infrastructural facilities are also observed to be positively associated with the literacy rate.

(vi) Wide disparities in the level of development among different regions of the State have been observed. The north-western and central regions are found to be better developed as compared to other regions of the State.

(vii) In order to reduce the disparities in development among different regions, model districts have been identified and potential targets have been estimated for low developed districts. These districts require improvements of various dimensions in different indicators for enhancing the level of development.

(viii) It would be useful to examine and evaluate the level of development at a lower level say tehsil or block level for making location specific recommendations as entire parts of most of the low developed districts are not low developed but some parts are also better developed.

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