AN APPROACH TO PLANNING FOR DEVELOPMENT IN MAYURBHANJ DISTRICT, ORISSA

SUPERVISED BY
Dr. S. K. Mishra, Reader
DEPARTMENT OF ECONOMICS,
NEHU, SHILLONG.

BY
PRAVAKARA SINGHA

DISSERTATION

SUBMITTED
IN
PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF
MASTER OF PHILOSOPHY

TO

THE DEPARTMENT OF ECONOMICS, SCHOOL OF SOCIAL SCIENCES
NORTH-EASTERN HILL UNIVERSITY
SHILLONG-793014

1989

Phone :
Grams : NEHU

North - Eastern Hill University

Mayurbhanj Complex
Nongthymmai, Shillong - 793014 (Meghalaya)

Department of Economics
Dr. S.K. Mishra
Reader

CERTIFICATE

This is to certify that **Mr Pravakara Singha** has worked under my supervision for his M.Phil Dissertation Entitled **"An Approach to Planning for Development in Mayurbhanj District, Orissa"** and no part of it has been submitted elsewhere for the award of any degree. This dissertation, in my opinion, is worthy of an award of the degree of **Master of Philosophy in Economics.**

SHILLONG

The 10 March 1998.

(Dr. S.K. Mishra)
Supervisor
Reader
Department of Economics
North Eastern Hill University
Shillong

C O N T E N T S

A C K N O W L E D G E M E N T

I have no word to express my deep sense of gratitude to my Supervisor Dr. S.K. Mishra, Reader, Department of Economics, for his able guidance, inspiring encouragement and constant help in preparation of this dissertation.

I express my sincere obligation to all my teachers of the Department of Economics, NEHU shillong, for their encouragement and timely help. To name, I am especially indebted to Dr. K. Bez, Prof. and Head of the Department, for his timely help and recommendation for grant of UGC Junior Research Fellowship without which my work would not have been completed; Mr. B. Mishra and Mr. A.C. Dubey who not only inspired me in each step of work, but also helped me a lot in a number of ways . I also very much thankful to Mr. Godfray and Mrs. B. Sharma for their heartful co-operation.

I also acknowledge my deepest sense of gratitude to Dr. N.Malla, Prof. Department of Philosophy, NEHU,Dr. K. Biswal, Reader, Department of Economics , M.P.C. College, Baripada, Dr. S. Jena, Prof. Deptt. of Physics, Utkal University, Vani Vihar, Mrs. Shanti Hota, Lecturer in Economics, Govt. Womens' College, Baripada , Mr. D.C. Mishar, Lecturer in Political Science, Govt. Evening college, Baripada for their constructive suggestions.

I would like to express my thanks to Mr. S.K. Barik, Ms. J. Mishra and Ms. P. Rao, Research Scholar - Deptt. of Botany, NEHU, who helped me in data interpretation, Mr. R. Raj for his

timely financial assistance during my data colection, I also express my thanks to my friends, Mr. S.Mishra, Mr. G. Ghadei, Mr. M. Dash, Mr. P. Patra , Mr. P.K. Rout, Mr. H. Dhamudia , Mr. J. Sahu Mr. N. Sharma and Ms. T.M. Barua for their heartful co-operation.

I am greatly indebted to Mr. D. Dash, Headmaster, Mitrapur M.E. School & Mr. D. Mohapatra, Secretary, P.K. Rath Principal and Teaching and Non-teaching staff of S.C. College, Mitrapur for their help during my work. I also highly thankful to Mrs. and Mr. S. Nayak who have helped a lot during collection of data.

I also express my deep sense of gratitude to my uncle Mr. S. Katual, Pasuda, elder brothers (Mr. P. Singha and Mr. P.C. Singha), and brother-in-laws (Mr. B. Das & Mr. N. Mohapatra) for their sacrifice during my work. Lastly , I am very much thankful to Mr. C. Jha who helped me in computerisation work and Mr. G. Nayak who has taken keen interest in typing this dissertation.

Pravakara Singha.

(PRAVAKARA SINGHA)

LIST OF FIGURES AND TABLES

FIGURES

TABLES

****

INTRODUCTION

In the context of the present phase of social change, scientific progress and technological advancement, the desirability of balanced regional development has well been recognised by the planners and policy makers. But no systematic attempt has been made so far to identify the areas that required special attention, the nature of activities that have to be promoted in the different areas on the basis of their resource endowment, existing bottle-necks for development in the areas and the potentialities of these areas. The basic justification of regional planning and policy derives from the uneven spread of economic development over different spatial unit of a country. There are regions that lack far behind others in the race of development and are normally designated as less developed regions. Even in most of the developed countries there are glaring regional disparities between regions and some regions are relatively backward compared with others. The problem is more acute in underdeveloped countries because while in developed countries the concern of the lagging regions is just to catching up with the leading regions, in underdeveloped countries the problem is two-fold - (1) reduction of regional disparities, and (2) provision of a minimum level of subsistence to millions of poor people who do not have it.

Under such circumstances, the two-tier planning (national and state levels) system in India is not sufficient to face the challenge. Such narrow economic approach is highly insufficient to the needs and aspirations of our people. The existing culture and social set up, the institutions and attitudes demanded development for a change, a change in the entire social set up, an upliftment of the society from gross zero level to a desirable position. The need, therefore, is for a broad based dynamic endogenous pattern of development. It must include social, cultural, economic, political and environmental factors and frame development models and policies suitable to the internal socio - economic set up of a country. Realising the fact during the formulation of Fourth-Five Year Plan, the Government of India emphasised the concept of 'Planning from below'. Accordingly, the village, district and block plans were to be prepared which were to be integrated at the state and national plan accordingly chalked out. But in the absence of proper identification of problems of the areas, more inventory of resources and potentialities at the district and block levels did not result in fruitful plan formulation. Apart from this the bureaucratic production oriented planning structure is not at all responsive to the aspirations and the minimum needs of the rural poor.

In the existing planning structure, though Government is putting much more emphasis for rural development through active participation of the people, it is not possible to take into proper consideration the diversities in the levels of development and living standards and thereby make realistic plans taking into account possibilities for development and the resources available. Apart from this, the basic needs, objectives of development and integrated approach to planning for development essentially involve public participation which can not be effectively incorporated till now in our planning system. Therefore, the plans formulated by the Government are not fruitful and the gap between developed and backward regions are widening with the passage of time. However, this gap imputes to a number of studies regarding the regional disparities within a country in general and within a state in particular.

The increasing inter-state and inter-district disparities in the levels of development resulting in political tension make it imperative to aim at balanced regional development taking district as a unit of planning and to integrate these plans at the state and national level. Further, the recent emphasis on integrated rural development emphasises the importance of area development plans on the basis of available local

resources and manpower. It is in this direction that the reconsideration of the existing approach to planning and the forgoing of an 'alternative approach' - especially 'local level planning and development becomes relevant and essential'. Keeping in view these factors, we believe that the district will be an appropriate micro-level unit for this purpose.

Various aspects of regional imbalances within the state of Orissa have been studied by the researcher. For these purposes the state has been classified into four homogeneous regions, namely : (a) northern upland regions, (b) the contral river basin regions, (c) the southwestern hilly regions, and (d) the coastal regions. Perspective plans have been prepared for these regions highlighting the levels of development in different sectors. We believe that they are not adequate for the formulation of district level plans as they concentrate mainly on land use, cropping pattern, irrigation, adaption of new technology, etc., without throwing any light towards the existing potentialities for development in the districts concerned. Though District planning units have been started, they are not functioning properly due to inefficient officers and insufficient finance. Till now the power is concentrated in the state planning unit and the district planning units are working under their

direction, Therefore, what we have tried to show and throw some light on the fact that the framework for the application of 'regional concept' in planning at the district level should cover : (i) land capability classification, (ii) classification of districts according to the availability of institutions providing necessary socio-economic services, (iii) working out hierarchic pattern of district with respect to development and identifying the priority services to be provided, (iv) land-use patterns, and (iv) framework for areas development as a long-term goal.

The analysis of classification of regions till now done leads us to conclude that the causes of backwardness (or the factors that arrest development) are the same for all the districts of the state of Orissa. Naturally,this leads to the formulation of policies which are common to all the districts of the state. But a close scrutiny of the reality drives us to believe that an analysis of the causes of backwardness at the district level may reveal that all the districts are not on the same level of development and also the lagging sectors in each district are not the same. If we take it for granted the above statement as our hypothesis then the test of the hypothesis will surely require the identification of lagging sectors, in each district. The present study is an humble attempt in this direction.

By keeping consistancy with the title of our dissertation to the maximum extent possible what we have attempted in this dissertation is that to study the causes of the failure of the planning for development of Mayurbhanj district in Orissa and the problems inherent with it.

Orissa is a comparatively backward state where agriculture is the main stay of the people providing means of livelihood to more than 80% of the total population. Though significant development has taken place in some sphere since independence, access to opportunities for minimum standard of living in Orissa is the lowest in the country. More than two-third of its population live below the poverty line, which is evident from the 1981 census report. That the per capita income of the state was Rs. 1,46.70 at current prices and Rs. 524.50 prices (1970-71) which is much below than that of the India's average.

The purpose of relating our study to one of the most backward districts of Orissa, i.e., Mayurbhanj district is two-fold : (i) we believe that the district is rich in natural resources and abounds in minerals, agriculture and forest resources, and (ii) in contrast

to these physical, natural and human resources, the district remains as one of the backward districts in the state of Orissa, having the total geographical area of 1,04,18 square Km. The total number of people living in this district stood 15,81,873 out of which 10,16,377 are scheduled castes and scheduled tribes which constitutes districts 65% population. Only 5% of its population are living in urban sectors while 95% are living in rural areas. Agriculture is the predominant sector of the economy providing means of livelihood to more than 85% people of the district. The literacy rate of the district is nearly 25% which is very low in comparison to State's literacy rate, i.e., 34.2%.

The district is an underdeveloped one being the development co-efficient. 1.37, (i.e., di=1.37, which we have culculated)[1]. This indicates that the district is highly underdeveloped. In this context our result is very much similar to that of Damodar Suar who worked out that Mayurbhanj district is underdeveloped one and its backwardness is reflected in the real life of the people of this district.[2]

Realising the backwardness and the problem of poverty of this district, Government of Orissa in

commensurance with the Central Government has taken several developmental programmes in different planning period. Among other several schemes taken to fight the challenge of poverty and unemployment in the district for a long time, the unique programme of Economic Rehabilitation of Rural Poor (ERRP), Integrated Tribal Development Programme (ITDP), Rural Labour Employment Guarantee Programme (RLEGP), National Rural Employment Programme, (NREP), and the Tribal Sub-plan are given much emphasis. However, inspite of such massive programmes taken by the Government to step up the standard of living of the people of the district, the story remains at dismay. The standard of living of the people is going on deteriorating day by day, the problem of unemployment becoming more and more acute and disparity between haves and have-nots has been increasing to a greater extent. This, in turn, is leading to a economically stagnant position in the district inspite of its adequate natural and human resources. The question that we have raised in our dissertation is that why Mayurbhanj district is under developed and economically backward in comparison to the other districts of Orissa inspite of fertile land, valuable mineral and forest resources, and large volume of human resources. In the latter part of our dissertation, we have tried to answer to this

particular question by analysing the problems which are inherent with the developmental planning and have succeeded in providing a solution for the problem under study

SCOPE AND OBJECTIVE OF THE STUDY :

The study has covered the development aspect of Mayurbhanj district at a micro-level instead of macro-level. We have investigated into the problem of overall impact of the development planning on the socio-economic life of the people of Mayurbhanj district during the planning period. The main focuss of our study as mentioned earlier has been on the analysis of a suitable planning approach for the local development as well as the overall development of the state economy. At the same time, we have also tried to provide a qualitative appraisal of approaches to planning for development which we believe may provide sufficient guidelines for the future development programmes and policies for the district of Mayurbhanj in particular and that of the State of Orissa in general.

By not treating the objectives of planning in isolation from that of development, we have made an attempt to study in detail the following facts relating

to the developmental planning for Mayurbhanj district :

i) An analysis of the socio-economic characteristics and the causes of backwardness of Mayurbhanj district,

ii) An appraisal of the economic relevance of planning for promoting economic development,

iii) An analysis of the different approaches to planning for economic development and the suitability for economic conditions of Mayurbhanj district,

iv) An appraisal of the Government planning strategy for the development of agriculture, industry and infrastructure.

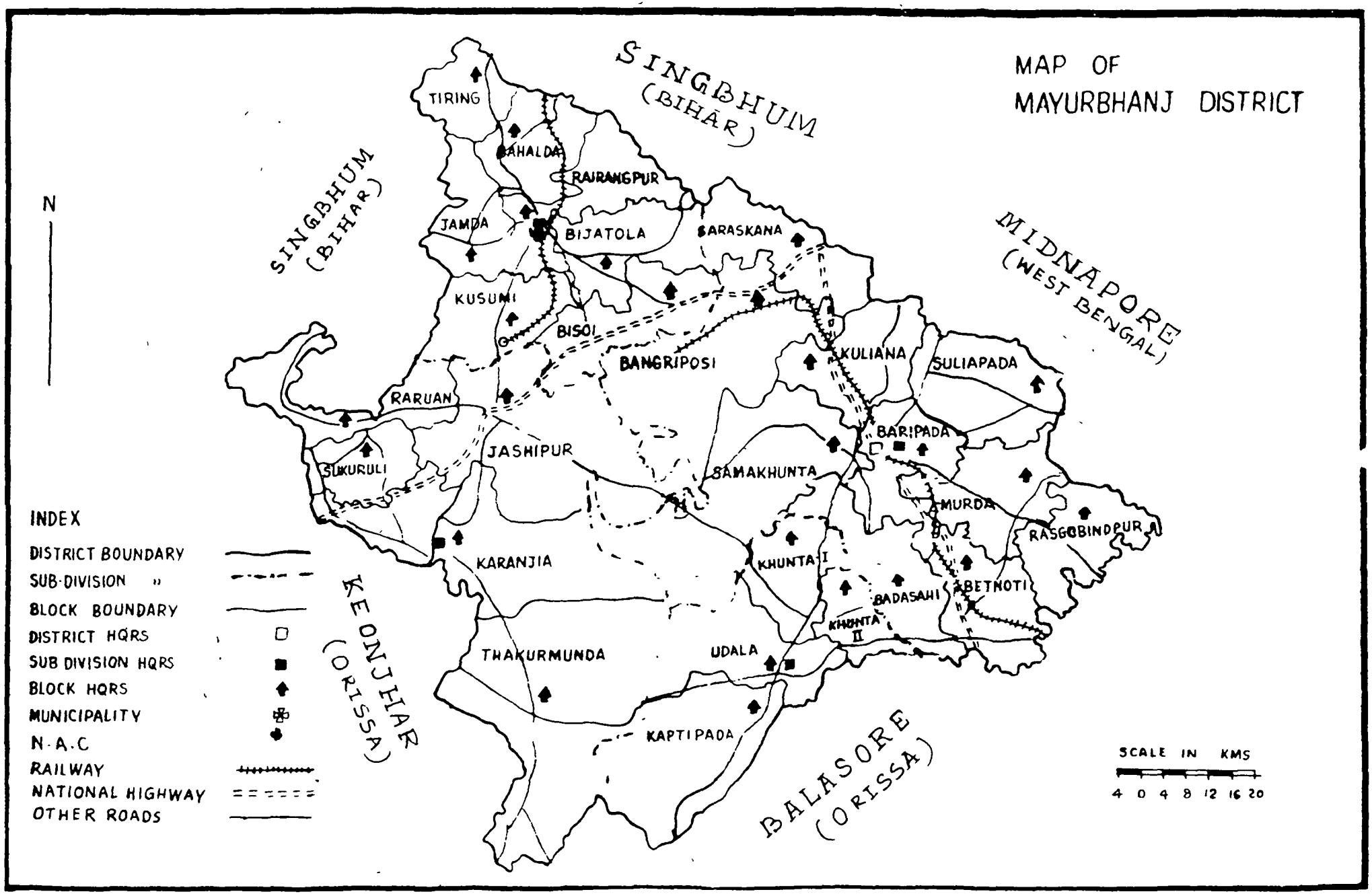
v) To develop a new approach to planning for the development of Mayurbhanj district in particular and the State of Orissa in general.

REFERENCES :

1) See Appendix - 1

2) Suar, Damodar, Indian Journal of Regional Sciences, Vol. XVI, No.2, 1984.

INTRODUCTION TO THE STUDY AREA AND SOCIO - ECONOMIC LIFE OF THE PEOPLE OF MAYURBHANJ DISTRICT


MAP OF
MAYURBHANJ DISTRICT
N
SINGBHUM
(BIHAR)
SINGBHUM
(BIHAR)
MIDNAPORE
(WEST BENGAL)
KE ONJHAR
(ORISSA)
BALASORE
(ORISSA)
TIRING
GAHALDA
RAIRANGPUR
JAMDA
BIJATOLA
SARASKANA
KUSUMI
BISOI
BANGRIPOSI
KULIANA
SULIAPADA
RARUAN
BARIPADA
JASHIPUR
SUKURULI
SAMAKHUNTA
MURDA
RASGOBINDPUR
KARANJIA
KHUNTA I
BETNOTI
BADASAHI
KHUNTA II
THAKURMUNDA
UDALA
KAPTIPADA
INDEX
DISTRICT BOUNDARY
SUB-DIVISION "
BLOCK BOUNDARY
DISTRICT HQRS
SUB DIVISION HQRS
BLOCK HQRS
MUNICIPALITY
N.A.C
RAILWAY
NATIONAL HIGHWAY
OTHER ROADS
SCALE IN KMS
4 0 4 8 12 16 20

As our purpose is to study the various problems inherent with the formulation of planning for development and to provide an alternative approach for the same, so it is very much essential to know the physiography at the district and socio-economic life of the people. Therefore, before going to explain the agricultural development or industrial development of the district, we first made an attempt to represent the socio-economic background of the district in nutshel. The district is rich in natural resources. It has plenty of dense forest, fertile agricultural land, bountiful store of minerals, adequate water resources, and active and skilful human resources, network of goods and a good climate. It is also true that without a sound knowledge of area, population, topography, climate, rainfall, etc. it is not possible to findout inherent causes of backwardness of a particular region. Therefore, in order to provide a sound policy we have to go through the details of the region, we have to understand the people and their surroundings also. The socio-economic life of the people of Mayurbhanj district can be best reflected on the following mentions.

LOCATION AND GENERAL BOUNDARIES :

The district lies between $21^{o}17'$ and $23^{o}34'$ north latitude and between $85^{o}40'$ and $87^{o}10'$ east longitude.

It is bounded on the north by the Singhbhum district of Bihar and Midnapore district of West-Bengal, on the south by the districts of Balasore and Keonjhar, on the east by the Midnapore and Balasore districts and on the west by the districts of Keonkhar and Singbhum.[2]

AREA AND POPULATION :

The district covers the area of 10,418 Sq. Km^3 and with a population of 1,581,873.[4] In order of area and size of population the district holds the 8th place among the 13 districts of Orissa.

SIZE,GROWTH RATE & DISTRIBUTION OF POPULATION :

In the 1971 census, the population of the district was 1,434,200 which increased to 1,581,873 during the 1981 census having 795,336 males and 786,509 females. The rural population of the district is 1,491,335 and urban population is 90,538. At present there are 3,729 inhibited villages in the district. There were only two towns in the district in the 1971 census. During the last decade Udala and Karanjia were notified as NACs by the state government for which the number of towns in the district increased to four in the 1981 census.

TABLE - 1.1

POPULATION, NUMBER OF VILLAGES AND TOWNS, 1981

Sl. No.	NAME OF TAHASIL	POPULATION									NO OF VILLAGES		
		TOTAL			RURAL			URBAN			Total	Inhi-bited	No. of towns
		P	M	F	P	M	F	P	M	F			
1.	RAIRANGPUR	351544	174428	177116	336041	166237	169804	15503	8191	1312	807	752	1
2.	BARIPADA	477828	242932	234986	424839	214108	210751	52989	28824	24165	1276	1179	1
3.	BETNOTI	228447	115219	113228	228447	115219	113228	-	-	-	665	598	-
4.	KARANJIA	280242	139175	141067	265332	131149	134183	14910	8026	6884	756	727	1
5.	UDALA	243812	123610	120202	236676	119708	116968	7136	3902	3234	485	473	1
6.	TOTAL DISTRICT	1581873	795364	786509	1491335	746421	744914	90538	48943	41595	3989	3729	4

SOURCES:

CENSUS OF INDIA, 1981, Series, 16, ORISSA, Part, XIII , District Census Hand Book

Part-B - Village and Townwise Primary Census Abstruct, Mayurbhanj.

Baripada, the headquarter Tahasil of the district is found to be the most populous Tahasil in the district having a population of 477,828 and the lowest concentration of population of 228,447 is reported in Betnoti Tahasil.

No urban population is recorded in Betnoti Tahasil and all other four Tahasils of the district have urban population with the location of one town in each of the four Tahasils of the district. This is clear from Table-1.1 as given below.

From Table 1.2 it is noticed that, in the 1981 census the increase in the population is only 10.30% showing the lowest percentage increase among the districts of the state. In the rural areas of the district percentage of increase is only 6.96 and in urban areas it is as high as 126.62%. The low rate of increase population in rural areas of the district may be due to the successful execution of family planning programme. As the district is mainly inhibited by the tribal population, most of the tribal population have adopted different family planning measures being attracted by amount of cash. The high rate of increasing urban population is due to the creation of more two towns during the last decade. This has been clearly indicated in Table No. 1.2.

Fig. 1

POPULATION TREND

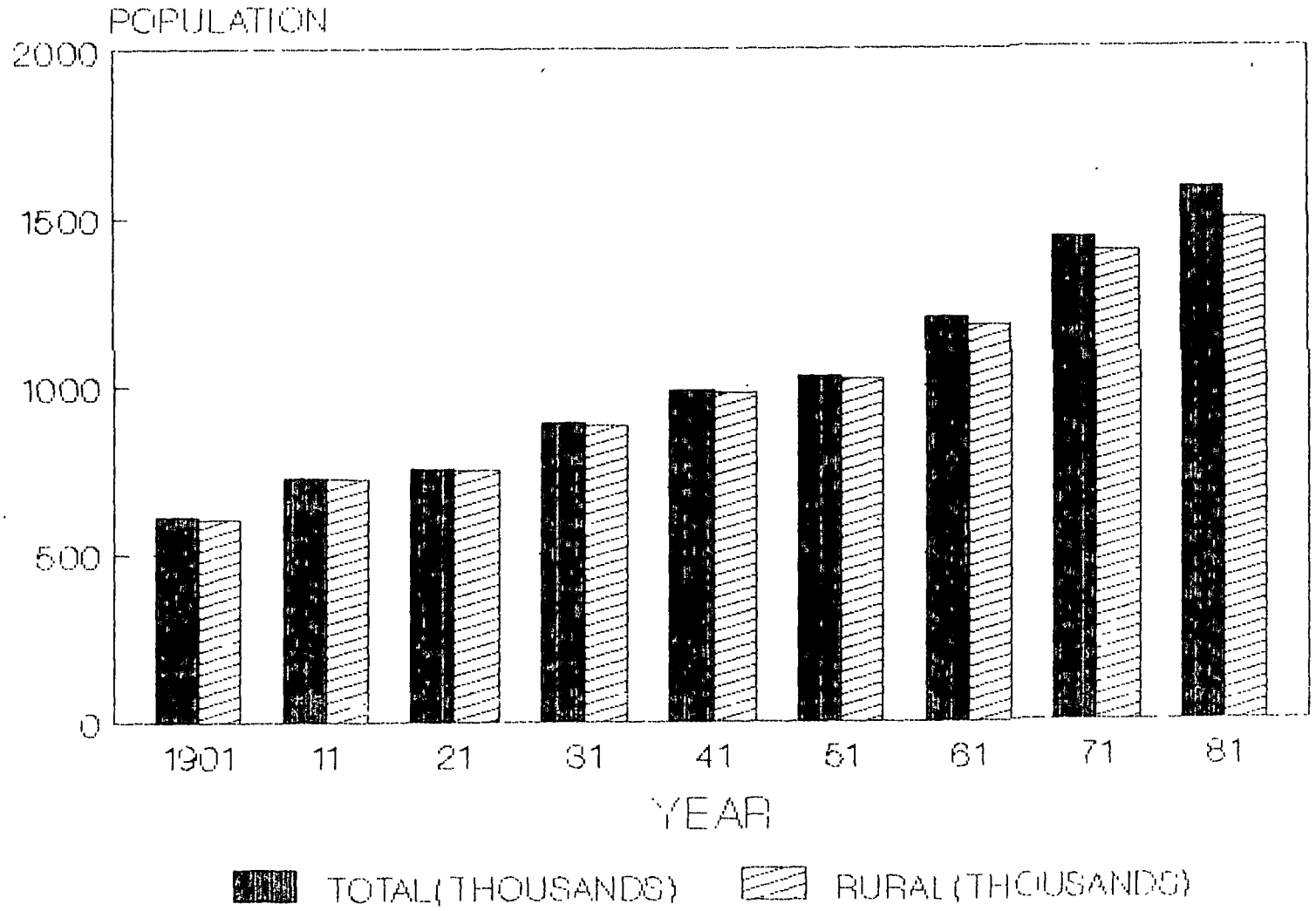


TABLE - 1.2

DECADAL CHANGE IN DISTRIBUTION OF POPULATION - 1981

Sl. No.	Name of Tahasil	POPULATION						Percentage Decadal (1971- 1981) variation		
		1971			1981					
		Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1.	Rairangpur	331,173	319,947	11,226	351,544	336,041	15503	+ 6.15	+ 5.03	+38.10
2.	Baripada	416,315	387,590	28,725	477,828	424,839	52989	+14.78	+ 9.61	+84.47
3.	Betnoti	203,147	203,147	-	228,447	228,447	-	+12.45	+12.45	-
4.	Udala	211,827	211,827	-	243,812	236,676	7136	+11.42	+ 8.16	+100.00
5.	Karanjia	264,738	264,738	-	280,242	265,332	14910	+ 5.86	+ 0.22	+100.00
6.	TOTAL DISTRICT	1,434,200	1,394,249	39951	1,581,873	1,491,335	90533	+10.30	+ 6.96	+126.62

SOURCES:

CENSUS OF INDIA, 1981, Series, 16, ORISSA, Part, XIII, District Census Hand Book Part-B - Village and Townwise Primary Census Abstruct, Mayurbhanj.

TABLE - 1.3
DISTRIBUTION OF VILLAGES BY POPULATION RANGES

Range of Population	No. of villages in each range	% of villages in each range
1	2	3
Up to 200	1,146	30.73
200 to 499	1,570	42.10
500 to 1999	985	26.42
2000 to 4999	28	0.75
5000 +	-	-
TOTAL :	3,729	100.00

SOURCES : District census handbook, 1981.

It is seen from the table that there is no village in the district having 5000 or more population. So, all the inhibited villages of the district have been distributed in to four different ranges of population. Out of 3,729 villages of the district 1146 or 30.73% of the villages are coming under the population range of less than 200, 1,570 villages or 42.10% are coming under the range of less than 500 people and like so. Thus, it is revealed from the table that people at the district like to live in small groups as the district is mainly predominant by the tribes.

All the inhabited villages of the district have been distributed under eight ranges of density (Population per square Km.) Out of 3,729 inhabited villages of the district, the density of 31 villages could not be worked out as the area figures of these villages are not available. The highest number of villages i.e., 1,249 or 33.5% are coming under the density range of 101-200 having 886. or 23.76% of villages under the density range of 201 - 300. The density of the population of the district is 152.

T A B L E - 1.4

DISTRIBUTION OF VILLAGES BY DENSITY OF POPULATION

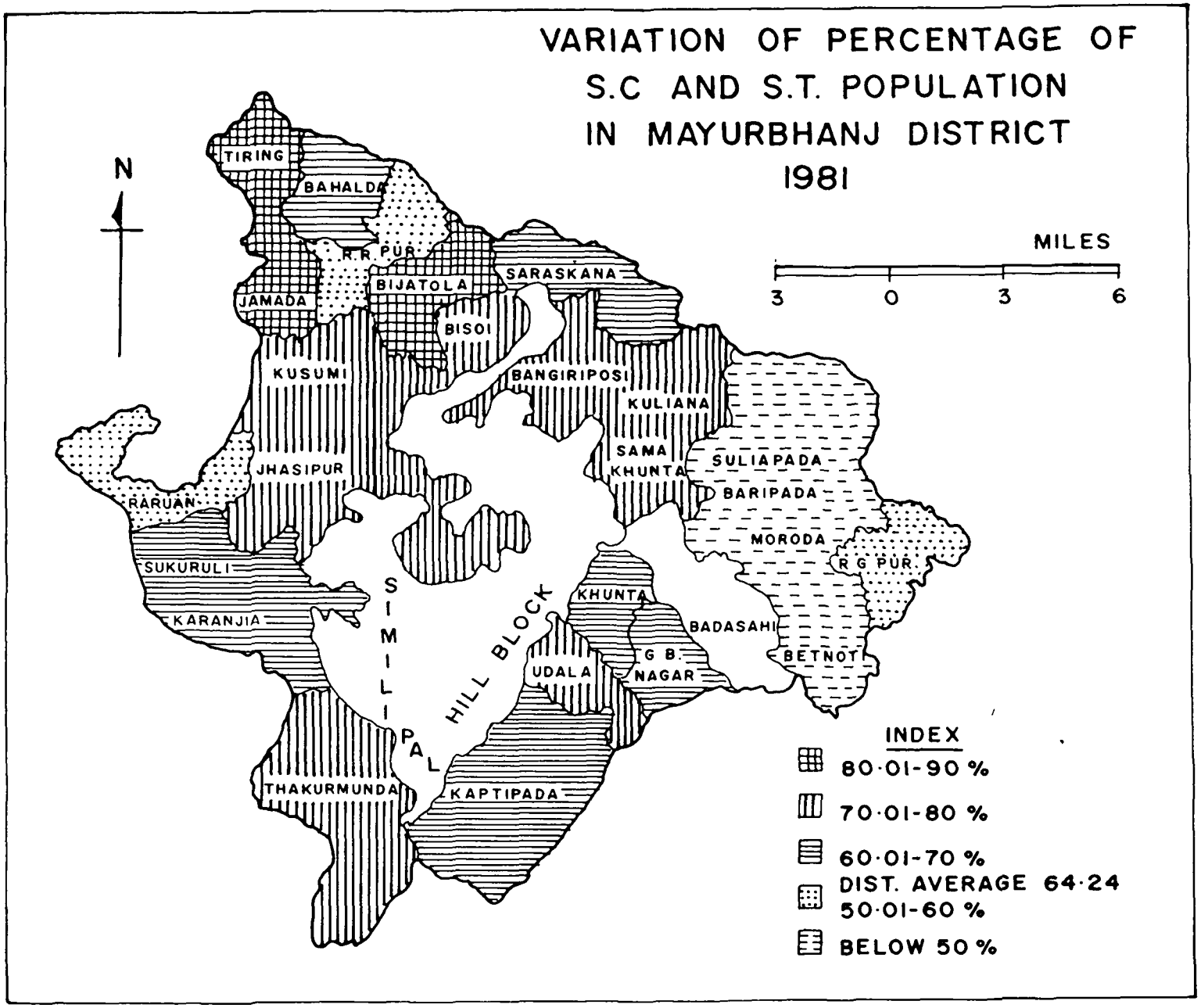
Range of density (per Sq.Km).	Total Number of villages in each density Range	% of villages in each density
1	2	3
Below 10	32	0.86
11 - 20	38	0.75
21 - 50	119	3.19
51 -100	461	12.36
101-200	1,249	33.50
201-300	886	23.76
301-500	634	17.00
501 and above	289	7.75
Not known	31	0.83
TOTAL :	3,729	100

Table - 1.5 shows the % of literates, workers, non-workers, SC/ST population in the district as well as on all tahasils with rural and urban break-up the % of SC population to total population in the district is only 6.58% as against 14.66% recorded at the state level. Among the Tahasils, percentage of Scheduled caste population to total population is highest in Betnoti Tahasil and lowest in Udals Tahasil. The lowest percentage of Scheduled caste population is attributed to the fact that the district is mainly inhabited by scheduled Tribes.

The percentage of scheduled tribe (ST) population to total population of the district is 57.67% as against 22.43% recorded for the state. Among the Tahasils, the highest percentage of ST to total population is recorded in Udala Tahasil and lowest percentage is found in Betnoti Tahasil.

It is very interesting to note that in Betnoti Tahasil, the percentage of SC population is the highest when the percentage of ST population is the lowest and the reverse is marked in Udala Tahasil.

During 1981 census, the percentage of literate population to total population in the district is


VARIATION OF PERCENTAGE OF
S.C AND S.T. POPULATION
IN MAYURBHANJ DISTRICT
1981
N
MILES
3 0 3 6
TIRING
BAHALDA
R.R.PUR
BIJATOLA
SARASKANA
JAMADA
BISOI
KUSUMI
BANGIRIPOSI
KULIANA
SAMA
KHUNTA
SULIAPADA
BARIPADA
JHASIPUR
RARUAN
MORODA
R.G.PUR
SUKURULI
KHUNTA
KARANJIA
BADASAHI
G.B.
NAGAR
BETNOT
UDALA
SIMLIPAL
HILL BLOCK
THAKURMUNDA
KAPTIPADA
INDEX
80·01-90 %
70·01-80 %
60·01-70 %
DIST. AVERAGE 64·24
50·01-60 %
BELOW 50 %

recorded as 25.71% which is lower than the percentage i.e., 34.23%, recorded for the state. The male literacy rate is higher than that of the female literacy rate. The male and female literacy rate are 37.39% and 13.90% respectively. The percentage of literates to total population of this district was 18.05 in 1971 census.

Total number of workers of the district constitute 47.77% of the total population of which main workers constitute 38.26% and marginal workers constitute 9.51%. The percentage of workers to total population for the state is only 38.01% which is lower than that of the district. Among the males the percentage of workers to total male population of the district is 57.63% and for the females it is 37.79% which are higher than that recorded for the males and females of the state.

It is only one of the interesting features to note that the work participation rate is more in rural areas of the district. The work participation rate in urban sectors of the district is only 31.91% whereas in rural sectors of the district it is 48.73%. It may be due to the fact that the district is mostly predominated by the tribal population who mainly live in rural areas and both the tribal males and females participate in any

TABLE - 1.5

LITERATES, WORKERS, NON-WORKERS, SCHEDULED CASTE, SCHEDULED TRIBE POPULATION IN THE DISTRICT - TAHASIL WISE

Name of Tahasil		TOTAL POPULATION			PERCENTAGE OF LITERATES					MAIN WORKERS TO TOTAL POPULATION			MARGINAL WORKERS TO TOTAL POPULATION			TOTAL WORKERS			TOTAL NON-WORKERS		
		Person	Male	Female	S.C. population to total Pop.	S.T. population to total Pop.	Person	Male	Female	P	M	F	P	M	F	P	M	F	P	M	F
RAIRANGPUR	- T	351544	174428	177116	6.34	64.38	23.27	35.82	10.91	40.04	56.29	24.03	9.49	2.07	16.81	49.53	58.36	40.84	50.47	41.64	59.16
	- R	336041	116237	169804	6.23	66.63	21.69	34.23	9.42	40.46	56.63	24.63	9.86	2.12	17.44	50.32	58.75	42.07	49.68	41.25	57.93
	- U	15503	8191	7312	8.71	15.43	57.56	68.18	45.66	30.88	49.51	10.02	1.46	0.84	2.15	32.34	50.35	12.17	67.66	49.65	87.83
BARIPADA	- T	477828	242932	234896	6.39	52.62	27.90	38.98	16.44	37.80	55.08	19.93	8.77	1.79	15.99	46.57	56.87	35.92	53.43	43.13	64.08
	- R	424839	214108	210731	5.86	57.32	23.80	34.86	12.56	38.85	56.21	21.21	9.78	1.99	1.69	48.63	58.20	38.90	51.37	41.80	61.10
	- U	52989	28824	24165	10.63	14.93	60.77	69.54	50.31	29.40	46.70	8.71	0.68	0.28	1.17	30.08	47.02	9.88	69.92	52.98	90.12
BETNOTI	- T	228447	115219	113228	7.63	44.78	27.38	38.78	15.78	36.79	54.45	18.80	8.30	2.19	14.53	45.09	56.64	33.33	54.91	43.36	66.67
	- R	228447	115219	113228	7.63	44.78	27.38	38.78	15.78	36.79	54.45	18.80	8.30	2.19	14.53	45.09	56.64	33.33	54.91	53.36	66.67
	- U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UDALA	- T	243812	123610	120202	5.91	64.61	24.28	34.94	13.32	36.19	55.31	16.53	7.93	2.02	14.02	44.12	57.33	30.55	55.88	42.67	69.45
	- R	236676	119708	116968	5.84	65.78	23.30	33.90	12.45	36.33	55.55	16.67	8.11	2.03	14.32	44.44	57.58	30.99	55.56	42.42	69.01
	- U	7136	3902	3234	8.38	25.74	56.82	67.71	44.90	31.45	47.90	11.60	2.25	1.69	2.93	23.70	49.59	14.53	66.30	50.41	85.47
KARANJIA	- T	280242	139175	141067	6.93	62.36	24.93	37.63	12.40	39.82	56.35	23.50	13.14	2.80	23.25	52.96	59.15	46.85	47.04	40.85	53.15
	- R	265332	131149	134183	6.53	64.09	23.64	36.24	11.31	40.29	56.84	24.11	13.56	2.85	24.03	53.85	59.69	48.14	46.15	40.31	51.86
	- U	14910	8026	6884	14.10	31.64	47.99	60.29	33.64	31.42	48.33	11.71	5.70	1.99	10.02	37.12	50.32	21.73	62.88	49.68	78.27
TOTAL DISTRICT																					
	- T	1581873	795364	786509	6.58	57.67	25.71	37.39	13.90	38.26	55.51	20.81	9.51	2.12	16.98	47.77	57.63	37.79	52.23	42.37	62.21
	- R	1491335	746424	744914	6.33	60.04	23.76	35.41	12.09	38.75	56.03	21.44	9.98	2.21	17.76	48.73	58.24	39.20	51.27	41.47	60.80
	- U	90538	48943	41595	10.62	18.62	57.81	67.57	46.32	30.15	47.56	9.66	1.76	0.76	2.95	31.91	48.32	12.61	68.09	51.68	87

SOURCES

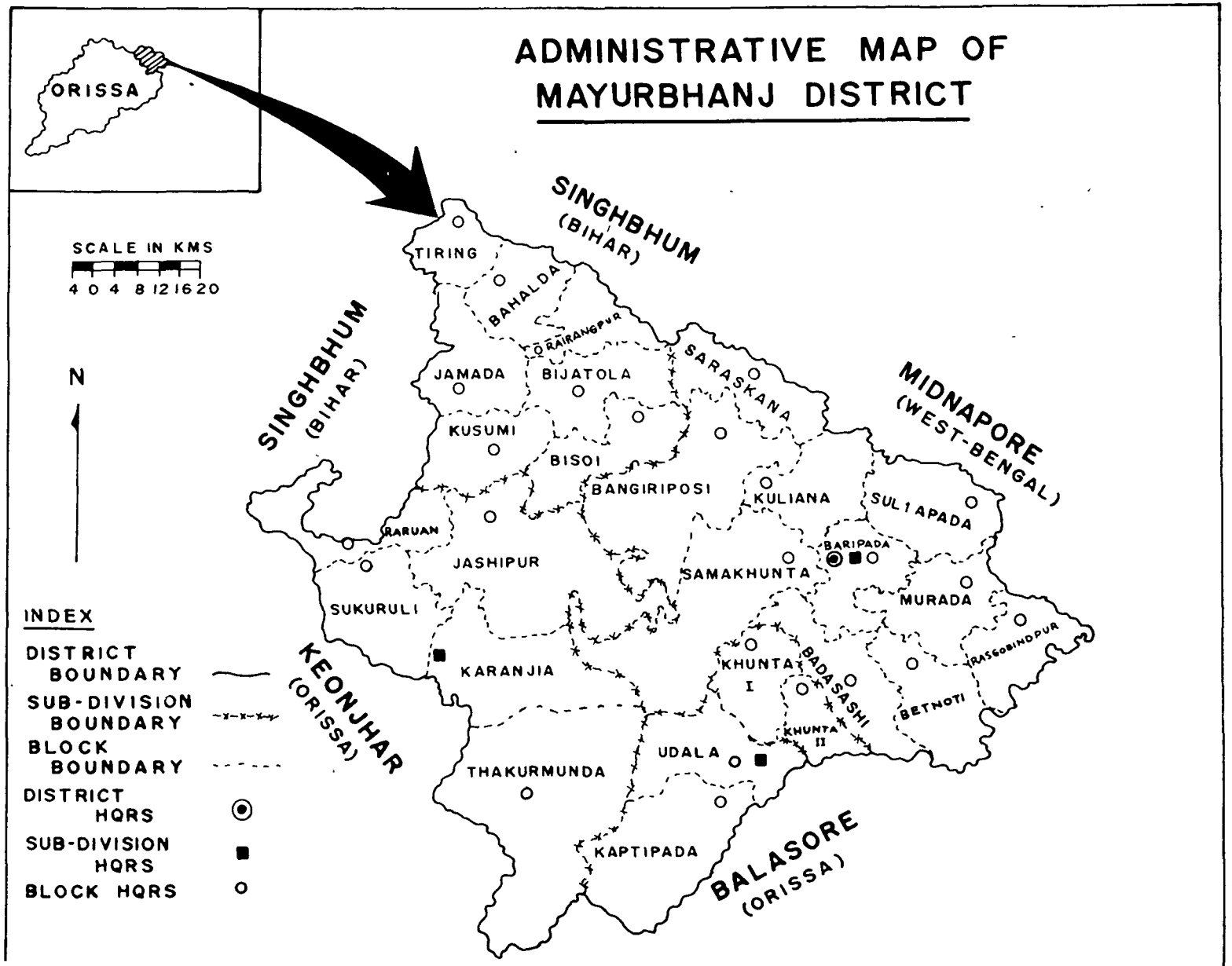
CENSUS OF INDIA, 1981, Series, 16, ORISSA, Part-XIII, District Census Hand Book Part-B-Village and Townwise Primary Census Abstruct, MAYURBHANJ

economic activities to earn their livelihood.

STUDY AREA AND ADMINISTRATIVE DIVISIONS :

Our study covers Mayurbhanj district only. The former state of Mayurbhanj merged with the state of Orissa, with effect from 1st, Jan, 1949. So far as pre-constitution acts are concerned they are made applicable to the former state of Mayurbhanj by means of the merged states laws act, 1950 and the Administration of Mayurbhanj states order, 1949.

Since the date of its merger Mayurbhanj has been organised and is administered as one of the districts of Orissa. The collector and District Magistrate is in overall charge at the General, Revenue, and Development administration of the district. Major portion of the developmental administration has been made over to the Zilla Parisad which has an executive officer of the rank of an Additional District Magistrate. In matters of revenue and excise Administration the Collector functions under the Board of Revenue and Revenue Divisional Commissioner, Central Division, Cuttack, For the purpose of the Revenue and General administration of the district the collector and the District Magistrate is assisted by the Additional District Magistrate and Sub-divisional officers of Baripada,


ADMINISTRATIVE MAP OF
MAYURBHANJ DISTRICT
ORISSA
SCALE IN KMS
4 0 4 8 12 16 20
N
INDEX
DISTRICT BOUNDARY
SUB-DIVISION BOUNDARY
BLOCK BOUNDARY
DISTRICT HQRS
SUB-DIVISION HQRS
BLOCK HQRS
SINGHBHUM (BIHAR)
SINGHBHUM (BIHAR)
MIDNAPORE (WEST-BENGAL)
KEONJHAR (ORISSA)
BALASORE (ORISSA)
TIRING
BAHALDA
RAIRANGPUR
JAMADA
BIJATOLA
SARASKANA
KUSUMI
BISOI
BANGIRIPOSI
KULIANA
SULAPADA
RARUAN
JASHIPUR
BARIPADA
SAMAKHUNTA
MURADA
SUKURULI
KARANJIA
KHUNTA I
BADASASHI
RASGOBINDPUR
BETNOTI
KHUNTA II
UDALA
THAKURMUNDA
KAPTIPADA

Bamanghaty, Panchpir, Kaptipada and a number of Deputy collectors and Sub-Deputy Collectors.

For the convenience of general and revenue administration, the district has been divided in to four separate sub-divisions - (1) Baripada, (2) Bamanghaty, (3) Panchpir and (4) Kaptipada. At present the district has five Tahasils, 21 Police stations, 26 C.D. Blocks and 254 Grama Panchayats. The Tahasil boundaries of Rairangpur, Karanjia and Udala are the same as the Sub-Division boundaries of Bamanghaty, Panchpir and Kaptipada respectively. The Baripada sub-division is dived in to two Tahasils - (1) Baripada and (II) Betnoti.

PHYSIOGRAPHY :

The district of Mayurbhanj may be divided in to three district natural divisions. The hill ranges serve as the dividing line running due north and south from the central group. There are two ranges of hills of lesser elevation dividing the plains of the district in to two halves - (i) the eastern, and (ii) the western. The western part is further sub-divided in to two portions by another hill range running in a westenly direction from the northern portion of the north south line.

Fig. 1(a)

Classification of Area, Mayurbhanj District, 1987-88, In Hecs.

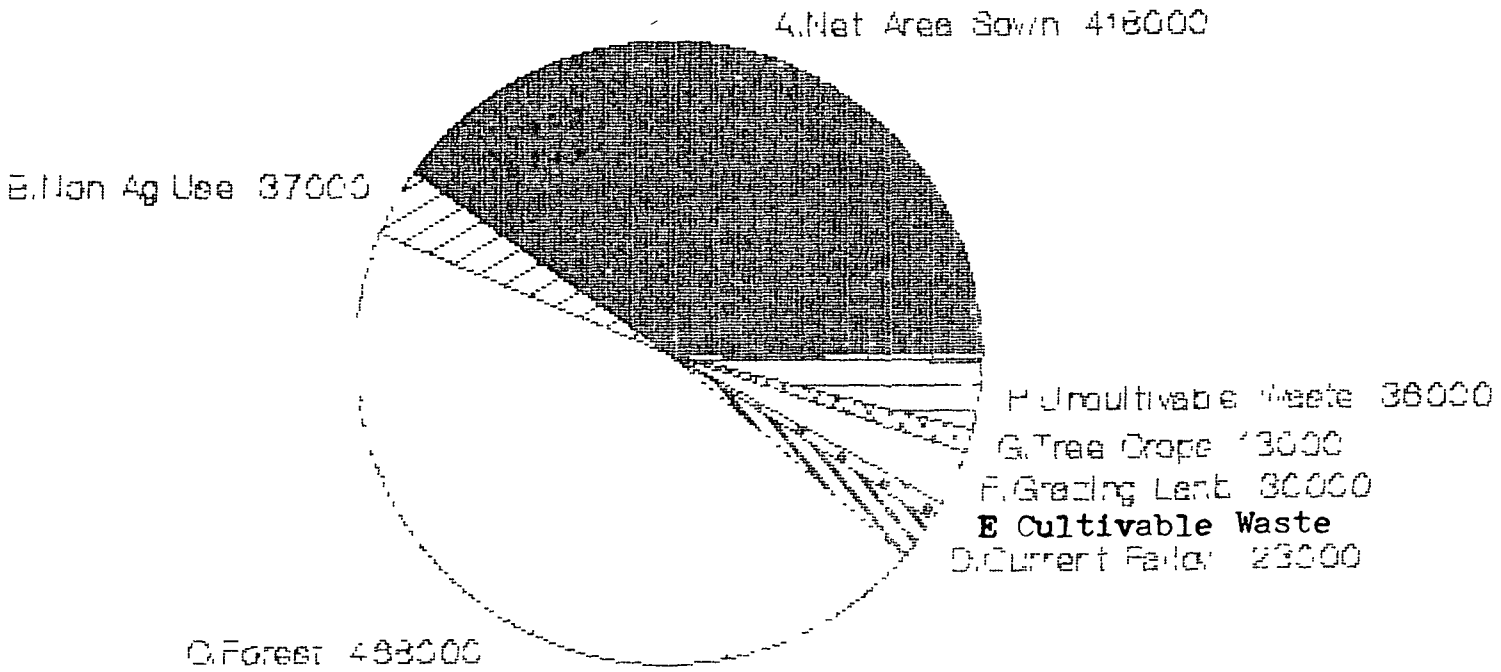
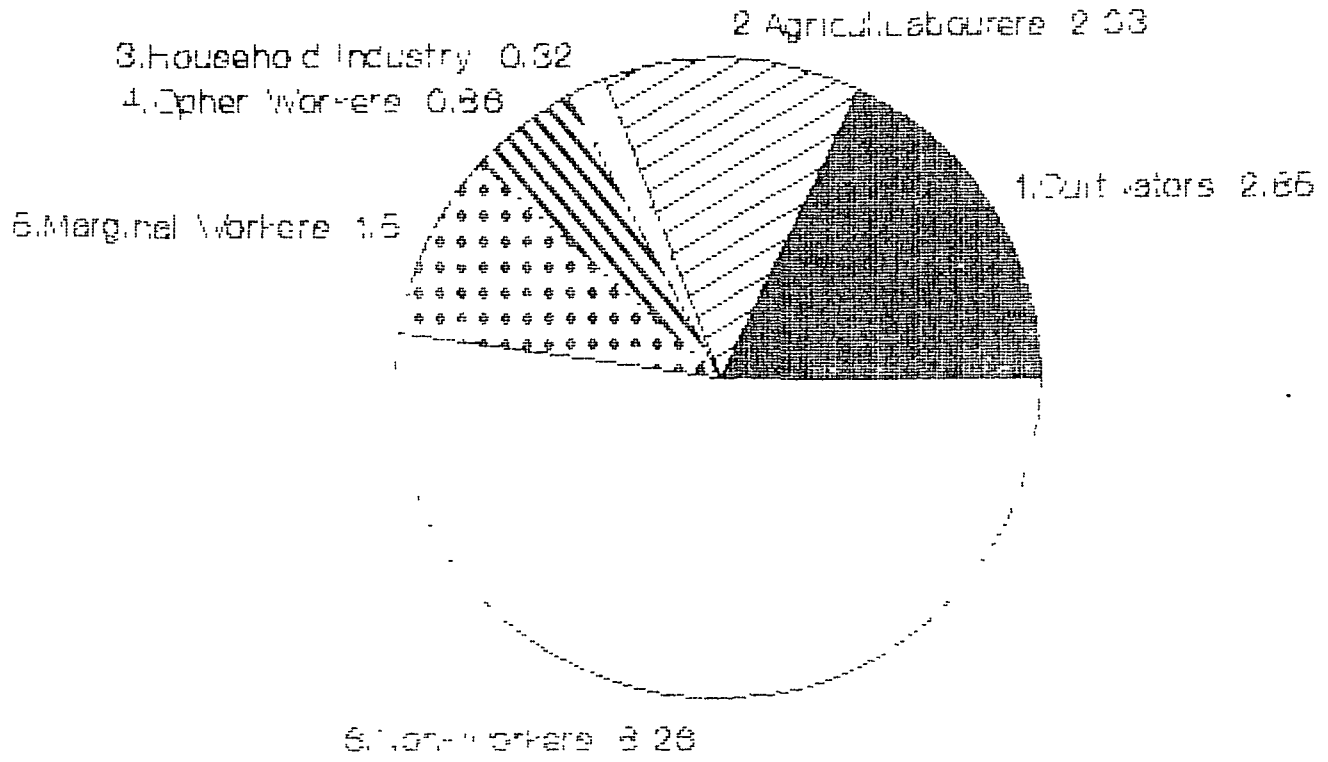


Fig. 1(b)

Division Of Labour Force,Maurabhanj District(1981-Census)In Lakhs.



The eastern division slopes gently from the fort of the hills towards the sea and served by a number of hill-streams forms an ideal country for irrigation. It has two sub-divisions namely Kaptipada and Baripada.

The western portion is mainly a plain rising and falling in gentle slopes studded with many rocky mounds and hills. The soil of northern portion, particularly is very fortile and lends itself to extensive cultivation. It has Bamanghaty sub-division in the north and Panchpir sub-division in the south.

CLIMATE AND RAINFALL :

The climate of the district is characterised by an oppressive hot-summer and severe cold during winter. In summer, the maximum temperature of the districts increases up to 36.00°c compared to the State average maximum temperature of 31.7°c during the year 1981. In winter the minimum temperature of the district slopes down to 12.8°c as against the State average minimum temperature of 21.6°c during the same year. The relative humidity for the district varies between 63 to 74 during the period from 1976 to 1981.

The rainfall is fairly uniform over the district and the variation in the annual rainfall from the year

to year is not large. On an average, there are 83 rainy-days (i.e., days with rainfall of 2.5mm & more in year). This number varies from 81 at Rairangpur to 84 at Karanjia.

The normal rainfall of the district is 164.82 cms. which is on the higherside of the state average rainfall of 148.22 cms. The actual rainfall during the year 1981 was 137.78 Cms. which fell short of 16.4 percent of the normal rainfall. Since, 1976, the actual rainfall had been falling short of normal rainfall. The situation was very accute during the year 1979 and 1980 when the actual rainfall were 92.74 Cm. and 120.31 Cms. respectively. This is clear from the table given below :

TABLE - 1.6

NORMAL AND ACTUAL RAINFALL IN THE DISTRICT OF MAYURBHANJ

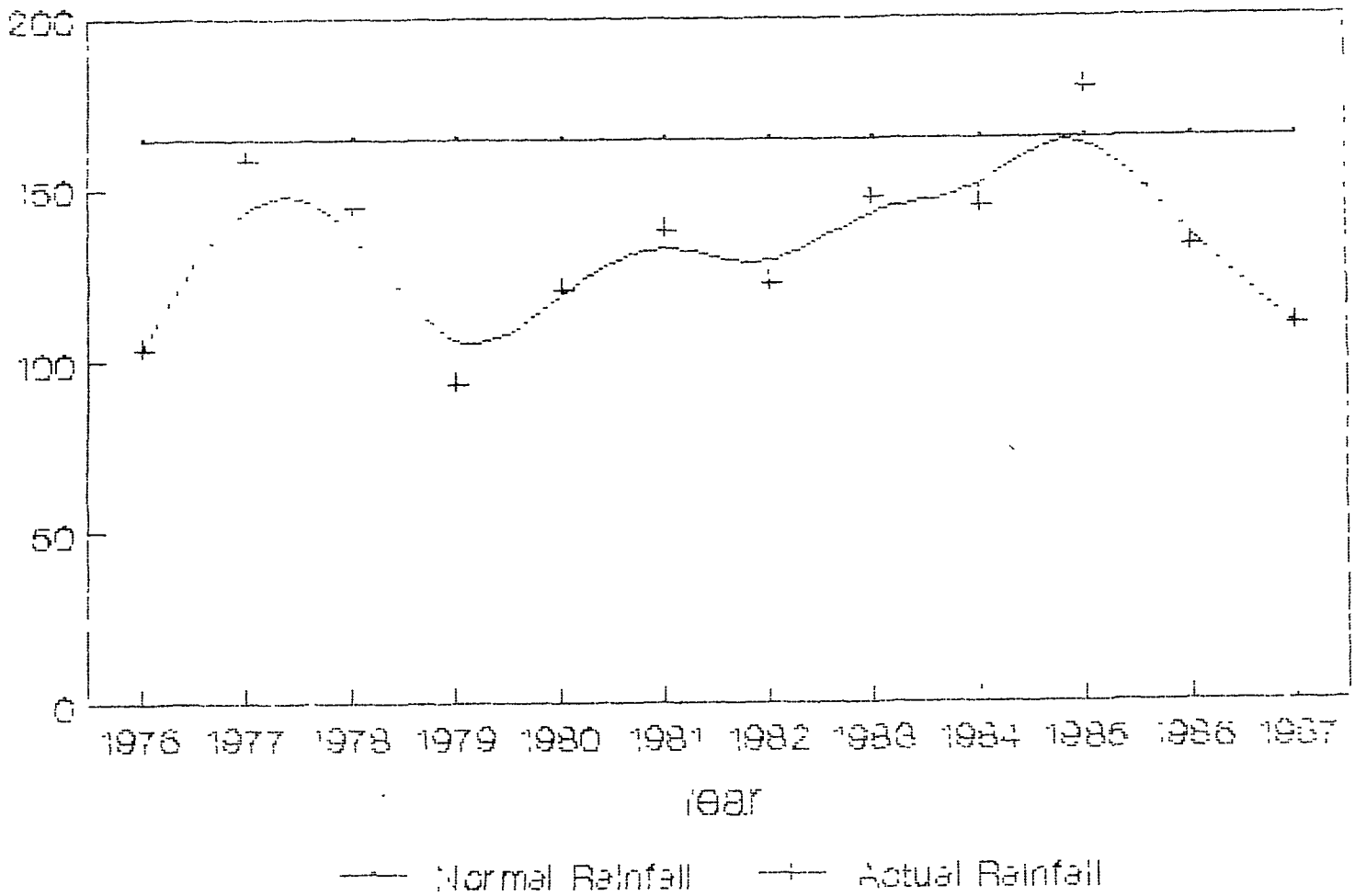
Year	No. of rain recording station		Normal Rainfall (in Cm..)	Actual Rainfall (in Cm)	% of deviation (+) or (-) from Normal Rainfall	No.of Rainy days
	Existing	Reporting				
1	2	3	4	5	6	7
1976	..	..	164.82	103.68	(-) 37.1	80
1977	..	..	164.82	158.64	(-) 3.7	98
1978	..	..	164.82	144.43	(-) 12.4	97
1979	..	..	164.82	92.74	(-) 43.7	89
1980	..	..	164.82	120.31	(-) 27.0	98
1981	26	26	164.82	137.78	(-) 16.4	118

(+) Increase, (-) Decrease

Source - Board of Revenue, Orissa.

Fig. 2

Normal And Actual Rainfall In Mayurbhanj District(In Cms).



AGRICULTURE :

Agriculture plays a very dominant role in the district economy of Mayurbhanj and it becomes the main-stay of the district which provides sources of livelihood to more than 85% of the total population directly or indirectly. Out of the total geographical area of 10,40,000 hectres, the district has a forest area of 468,000 hectres which is nearly 48% of the total geographical area. During 1980-81 net area sown under different crops was 418.000 hectres of which 48572 hectres were being irrigated. The barren and unculturable land and land put to non-agricultural use came to 72,000 hectres. There was, however, a large extent of culturable waste and follow-lands, some of which are once cultivatable but after abandonment have remained uncultivated for a long time. The area under culturable waste, current fallows and other follows came to 6000 hectres, 23,000 hectres and 10,000 hectres respectively. The land under permanent pastures, grazing land and tree-groves came to 43,000 hectres during 1980-81. The total cropped area of the district during 1980-81 was 496,000 hectres as against 504,000 hectres in 1979,80. There was a declined in the cropped area to the extent of 1.58%. Area sown more than once in a year came to 78,000 hectres during the same period.[5] Area under different type of land utilisation of the district is very clear from the given histogram.

The total cropped area of this district has been distributed among area of food-grains, pulses and oil-seeds. Rice is the main production of the district. The detail picture of the distribution of land among foodgrains, pulses and oil-seeds is given in the next page. It is seen that the total area under food-grain production of the district was 4126000 hectres in 1971-72 and 4,060,000 in 1982-83. So, there has been a decreasing trend in this field. On the contrary, the area under total oil-seeds has been increased from 198,000 hectres to 298,000 hectres and for pulses from 307,000 hectres to 524,000 hectres respectively during the same period. This implies that there has been a change in the cropping pattern during the same period.

T A B L E - 1.7

AREA OF FOOD-GRAINS, PULSES AND OIL-SEEDS IN MAYURBHANJ DISTRICT

Area in '000 hectres

Crop/Year	Total Food Grains	Total pulses	Total oil-seeds
1	2	3	4
1971-72	4126	307	198
1972-73	3884	319	232
1973-74	3908	298	249
1974-75	3966	330	248
1975-76	4255	388	276
1976-77	3697	364	224
1977-78	4325	585	294
1978-79	4261	475	336
1979-80	4260	447	358
1980-81	4076	486	384
1981-82	4000	582	429
1982-83	4060	524	298

Sources : Economic Survey of Orissa, 1983-84, pp-186-187.

Fig. 3

CROPPING PATTERN

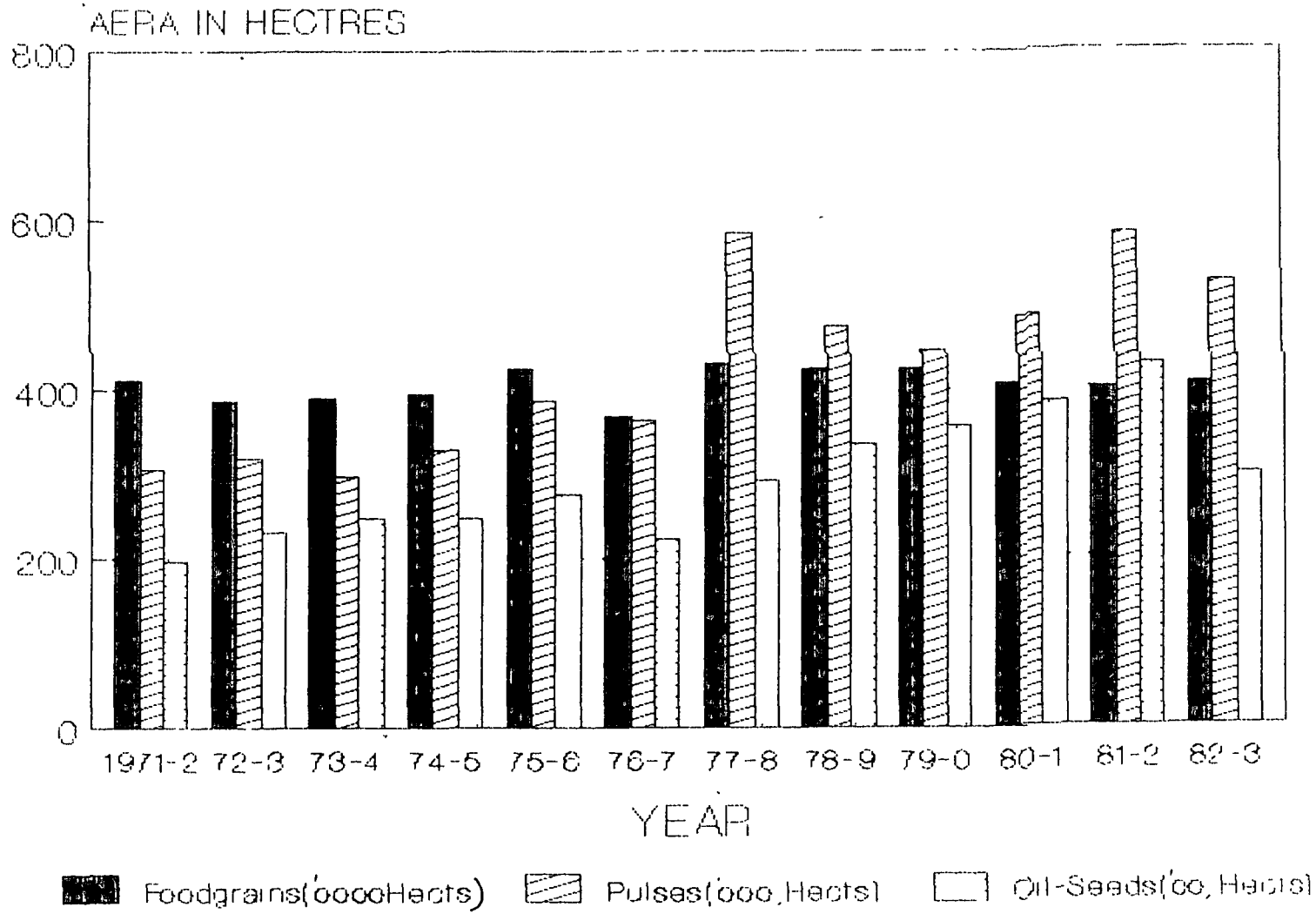
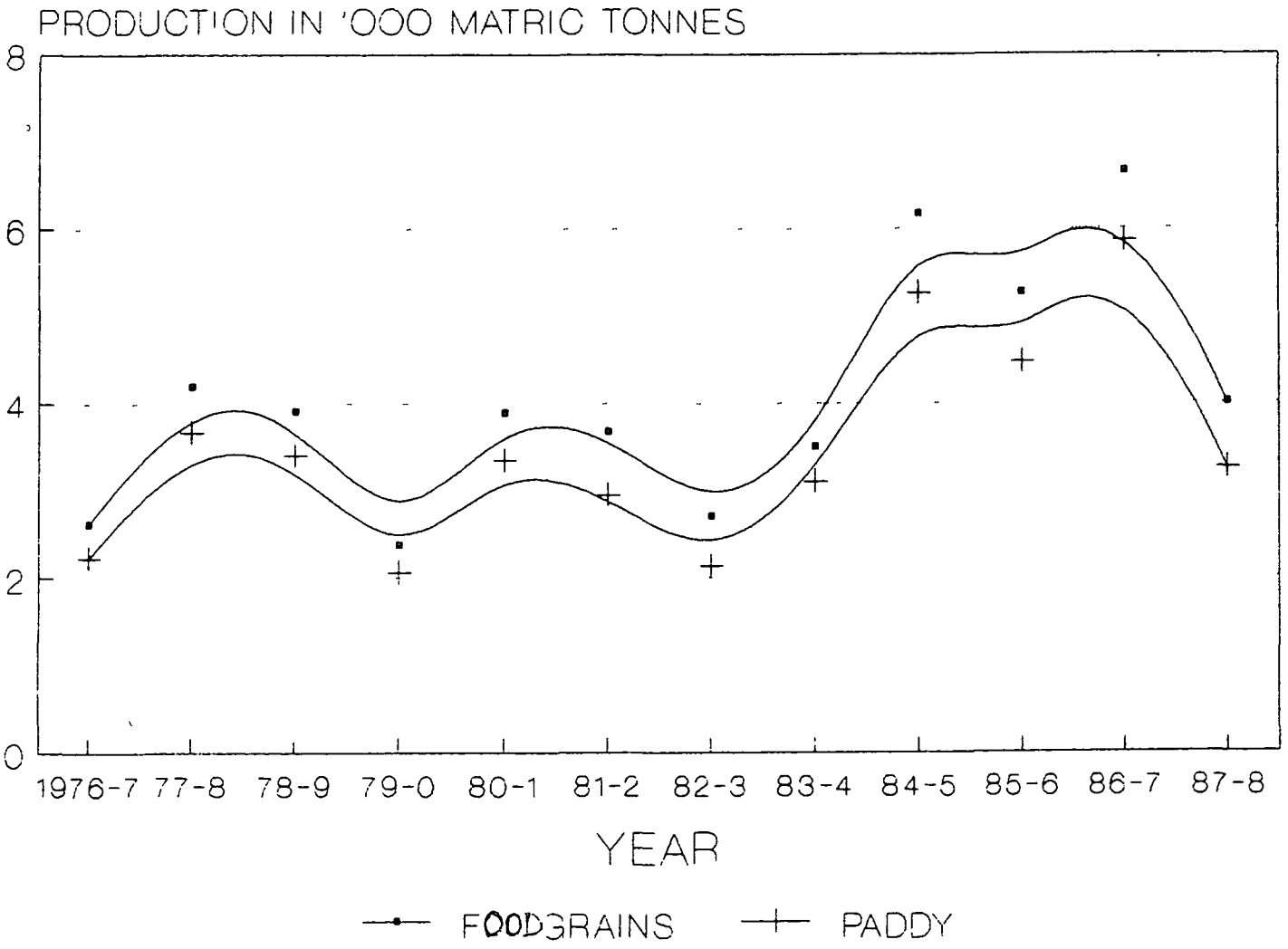


Fig. 4.

PRODUCTION TREND



Production trends of this district is very eratic one. If we made a glance to the production of foodgrains of the district in the last ten years, then we can safely conclude that food grain production reached a peak-level in the year 1977-78. But then it again came-down and in 1979-80, it was the lowest. Again we found upward and down-ward trends of the same. It is because of the reason that, the foodgrain production of the district mainly relies upon monsoon and foodgrain production was low due to the failure of monsoon and high because of good monsoon. The table shows that the total foodgrain production of the district was 2,57,900 M.Ts in 1971-72. It increased to 418,700 M.Ts in 1977-78, Again it reduced to 238000 M.Ts in 1979-80 and slightly increased to 270300 M.Ts in 1982-83.

From table 1.8, it is clear that rice constitutes the main production of the district and the total food-grain production is very much affected by the production of rice, in 1971-72, out of total foodgrain production 2,57,900 M.Ts rice production was 2,29,200 Mts and during 1982-83 out of total foodgrain production of 2,70,300 M.Ts, the proportion of rice was 2,13,600 M.Ts. So, it is clear that rice plays a very crucial role in the overall production of foodgrains in Mayurbhanj district.

T A B L E - 1.8

PRODUCTION OF DIFFERENT CROPS IN MAYURBHANJ DISTRICT

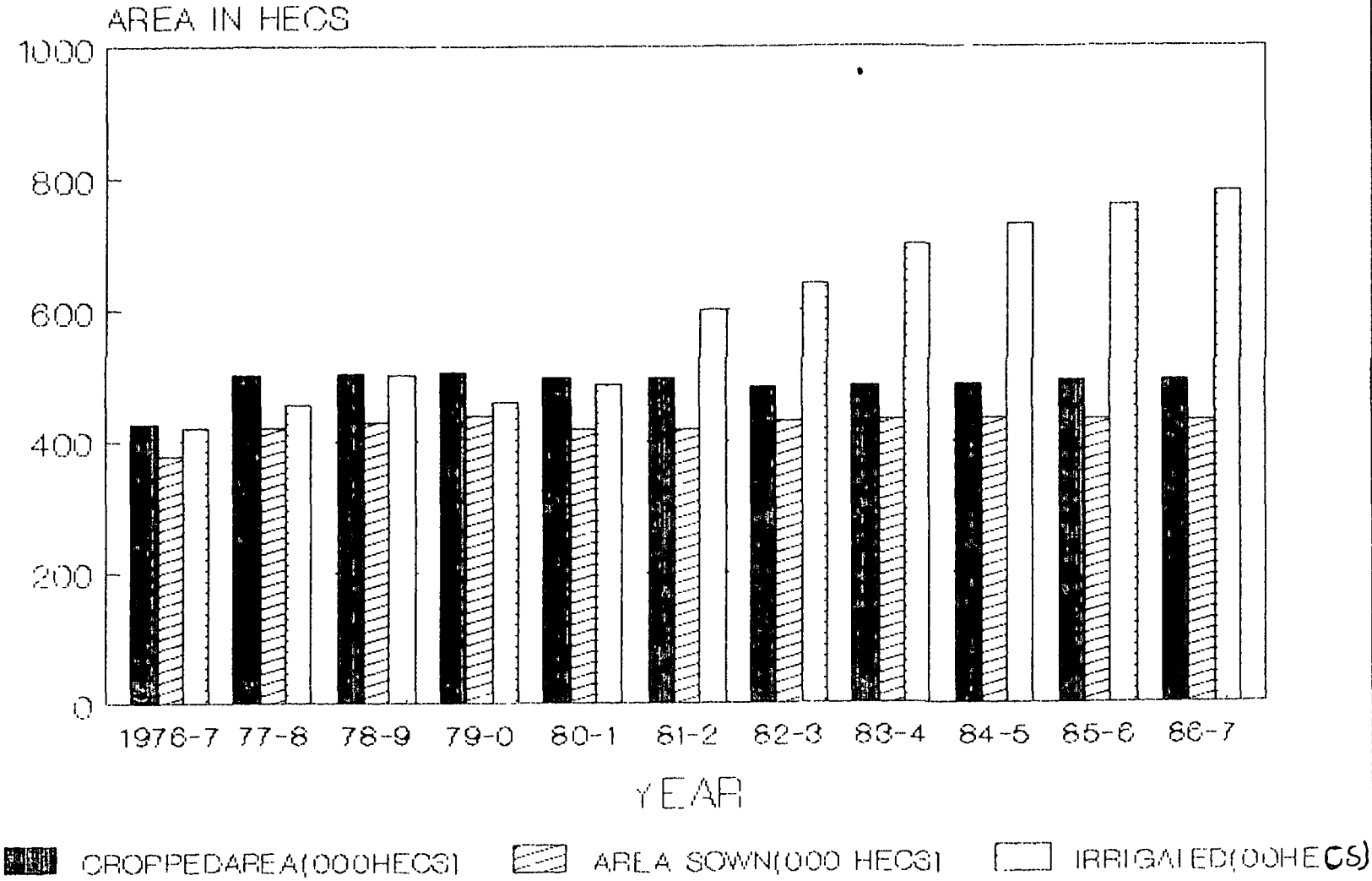
Production in '00 MTs

Crops	1971-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83
1	2	3	4	5	6	7	8	9	10	11	12	13
Rice	2,292	2,843	2,840	2,733	3,082	2,235	3,666	3,411	2,059	3,346	2,950	2,136
Cereals	2,431	3,025	3,032	2,932	3,308	2,427	3,887	3,664	2,226	3,648	3,328	2,464
Pulses	148	161	140	155	217	189	300	239	154	242	343	239
Total Food grains	2,579	3,186	3,172	3,086	3,525	2,616	4,187	3,903	2,380	3,890	3,671	2,703
Oil seeds	116	126	169	180	100	145	169	205	136	212	249	98

Sources : Economic Survey of Orissa, 1983-84.

Fig. 5

IRRIGATION



IRRIGATION :

The average annual rainfall of 148.22 cm. in the district is adequate to feed the crops. But uneven distribution causes uncertainty in cultivation. Artificial irrigation could alone solve this difficulty, but has not been worked out in such measure as to provide an assured repply of water all the year round. The past history of rainfall in Mayurbhanj district revealed the truth of dependence of agriculture on monsoon. The total picture of the irrigation facilities available in the district can be best reflected from the table given in the next page. The area getting irrigation facilities from various types of irrigation is 3.5% of the total cultivable area during 1965-66 and the area extended to 10.29% during 1980-81.[6]

The ex-state government had undertaken two notable irrigation projects, one at Baldiha and the other at Haldia. These two projects are at present irrigating 12,220 acres of land. Apart from the other sources of irrigation facilities that are available in the district are : (a) Major and medium project, (b) Minor projects under R.E.O, (c) Minor Projects (Lift), (d) Minor projects under C.D. and Private sources like : wells, tendas etc. However, it is clear from the given table

that the irrigation facility of the district is very poor. It is just like a drop of water in the vast ocean. Due to the lack of irrigation and continuous failure of monsoon the back-bone of the agricultural economy of the district is going to be broken. The detail picture of the irrigation facilities in the district is given in Table - 1.9 in the next page.

So, from this we found that there is every possibility of exploitation of water potential through out the district. The irrigation potential through its major and medium rivers is nearly 766,000 acres. The major sources which can be tapped for irrigation are- Burhabalanga having irrigation potentiality of 78,000 acres, Subarnarekha having 510,000 acres of irrigation potentiality and Khaira-Bhandan having 56,000 acres of irrigation potentiality. Apart from all these, there are many small rivers which can also be tapped for the same purpose. Hence, we can here say that, the productivity of the agriculture can be increased by providing more and more irrigation facility to the agricultural farmers in this district.

TABLE - 1.9

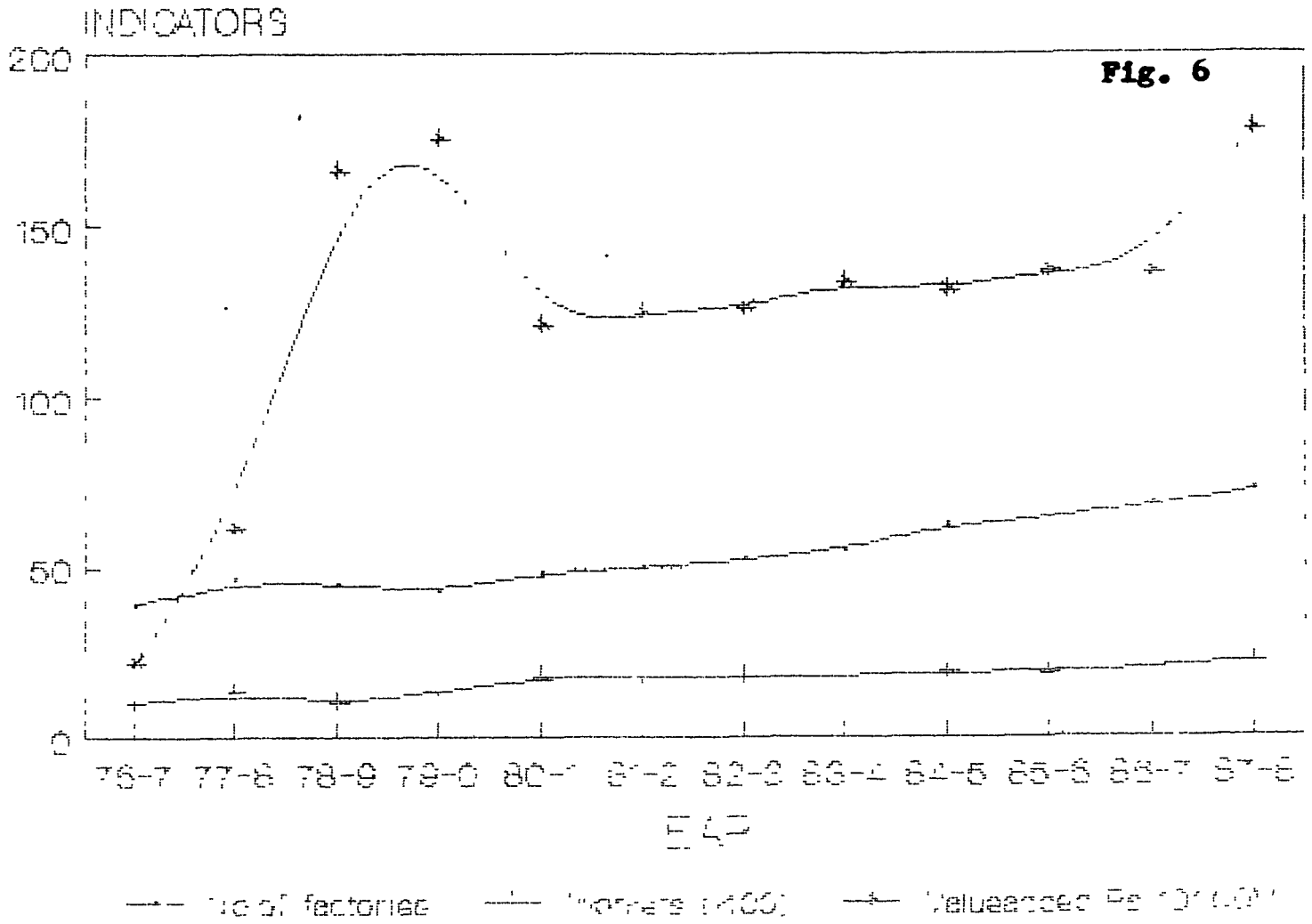
AREA IRRIGATED BY DIFFERENT IRRIGATION PROJECTS DURING THE KHARIF AND RABI SEASONS IN THE DISTRICT OF MAYURBHANJ

(Area in hectres)

Year	Major and Medium Project		Minor Project Under R E O		Minor Project (Lift)		Minor Project Under CD & Private Sources		Total Area Irrigated by all projects.		
	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Total
1	2	3	4	5	6	7	8	9	10	11	12
1976-77	3,830	50	28,201	2,205	227	597	6,880	65	39,198	2,917	42,115
1977-78	6,630	700	28,261	2,205	95	705	6,880	65	41,866	3,675	45,541
1978-79	8,030	1,400	29,070	2,326	25	534	7,897	776	45,022	5,036	50,058
1979-80	11,100	1,560	22,046	24	524	621	8,629	1,508	42,299	3,713	46,012
1980-81	11,250	3,280	22,005	--	314	874	8,835	2,114	42,404	6,268	48,672

Sources : District statistical Hand Book of Mayurbhanj District - 1980-81.

INDICATORS OF INDUSTRIAL DEVELOPMENT



I N D U S T R Y :

In present day economy, industry plays a very crucial role for the increasing of the standard of living of the people. For rapid economic development and restructuring the existing back-ward rural economy, the process of industrialisation is of paramount significance. Hence, we have to see the existing industrial structure of the Mayurbhanj district.

Although Mayurbhanj is one of the richest districts in not only Orissa, but also in India in mineral wealth and forest resources, no heavy and medium scale industry has developed in this district in order to exploit these resources. There are a few small scale industries which are recently started. The detail available data relating to the number of reporting factories, capital investment, persons employed, input and output of the factories and value added by them are given in Table No. 1.10. According to 1978-79, the total number of persons employed in industries were only 991. The number has been increased to 2.209 during 1983-84. Similarly, value added by manufacture of registered factories has been coming down from Rs. 166 lakh to Rs. 60.88 lakh and therefore the value added by manufacture per capita is very low in this district. The position of this district in the overall

districts position of the state is 10th.[7]

As stated earlier, the district is rich in minoral, forest and human resources. But, it is a matter of regret that almost all minerals are exported to the states of Bihar and West-Bengal. Excepting a very few saw-mills there is no industry in the district to utilise the forest produce.

If we made a glance to the past of this district, then we can be able to know the real picture of the industrial set up of the district, During the mediaval period, industries like stone - curving, pottery, brick-making, iron-smelting and making of agricultural and household implements, spining and weaving of tassar, lac growing and oil-pressing etc. are known to be thriving in the district. The magnificant stone temples at Khiching, Mantri, Badasahi and other places, as well as, richly carred sculptures and images in different parts of the district indicate the industries of stone-querrying, masonery and stone-curving which flourished in the past. The turacotta industries of this district during the late mediaval period was famous in Eastern India.

Tassar manufacture appears to have been in vague since vary early times. It is known from Mr. Bawaris

TABLE - 1.10

NUMBER OF REPORTING FACTORIES CAPITAL INVESTMENT AND TOTAL EMPLOYMENT ACCORDED TO ANNUAL SURVEY OF INDUSTRIES IN THE DISTRICT OF MAYURBHANJ

Year	Number of Reporting Factories.	Capital Investment (Rs. in lakhs)			No. of persons Employed	Total amulments paid (Rs. in '000)	Gross value of out-put(Rs. in lakhs)	Total value of input includes depreciation (Rs. in lakhs)	Value added by manufacture (Rs.in lakhs)
		Fixed capital	Working capital	Total Productive capital					
1	2	3	4	5	6	7	8	9	10
1976-77	39	86	27	113	1,027	1,750	409	389	22
1977-78	46	96	85	181	1,341	2,212	789	728	61
1978-79	45	73	120	193	991	2,049	792	626	166
1979-80	43	71	121	196	1,352	2,350	798	622	175
1980-81	48	83	126	205	1,770	2,815	805	628	121.21

Source : Annual Survey of Industries, Bureau of of statistics and Economics, Orissa.

account that very fine quality of tassar cloth was available in Mayurbhanj during the rule of Maharaja Trivikram Bhanja (1660 - 1688). The East-India company set up a factory at Balasore for Mayurbhanj Tassar. During 18th & 19th Centuries these industries considerably declined but the 30's of present century it revived with the patronage of Darbar Administration. Weavers of Bahalda, Binjhula, Kulgi, Mahulpani, Indukhuli, Dalima in Bamanghaty Sub-division and Sirsa and Deuli in Baripada Sub-division are technically efficient in this trade. But it is a matter of great shock that the present government has not taken so much steps for this industry. As a result of which the tassar industry is now at the stage of great set back.

The Santals of this district from early times know how to grow cotton in their yards and they used to spin and weave coarse cloth. Even, now, there are in many villages a few spinning wheels and pitlooms indicating the thriving textile industry in the past. This industry declined with the coming up of mill-mode cloth, which offered greater attraction for the tribal people of the district.

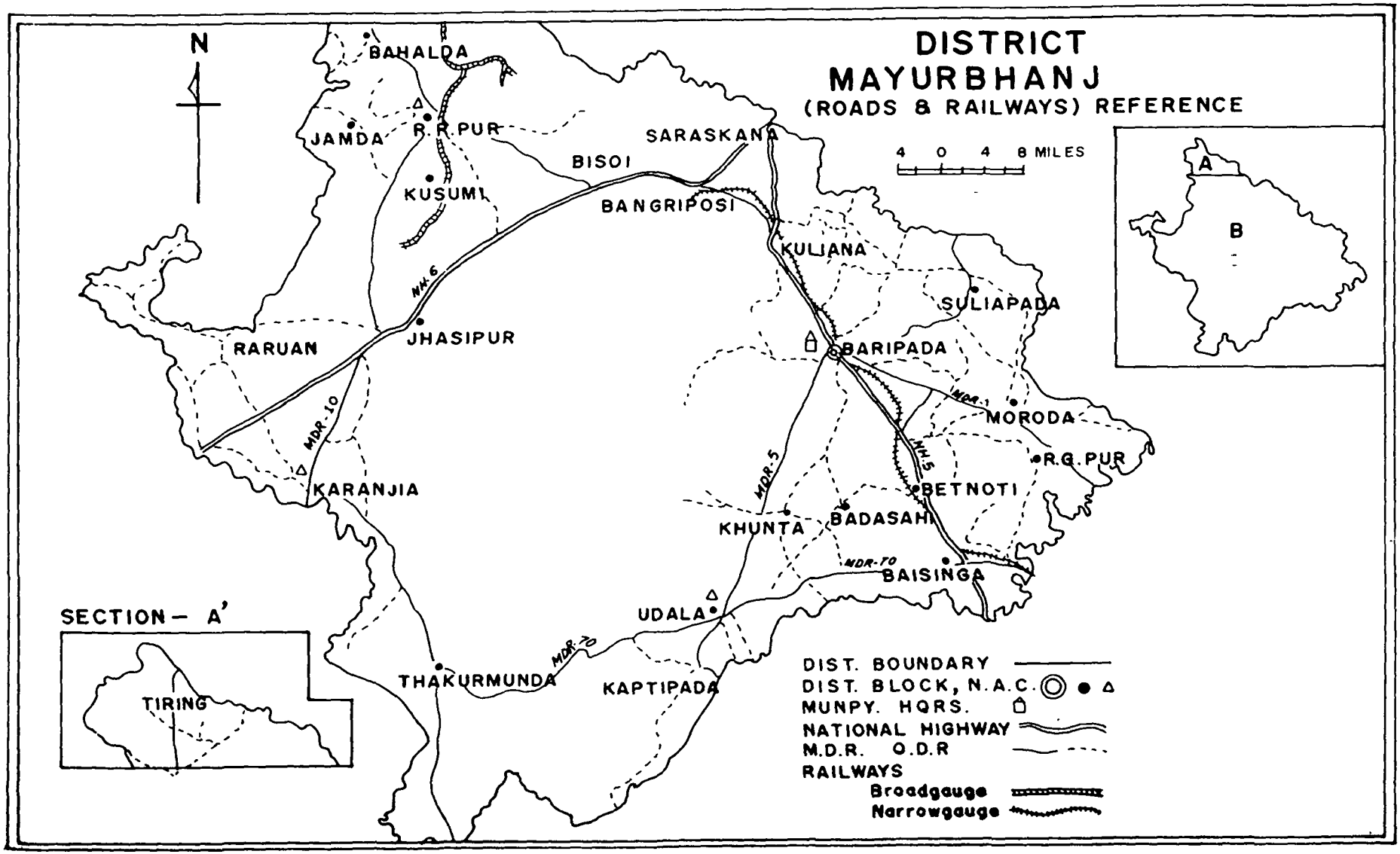
Lac industry was also a major industry in Mayurbhanj in the past. It was being sold raw in the outside market.

A seed lac factory was established at Rairangpur in 1935 to manufacture seed lac, button lac, superfin shellac, T.N. shellac, Kiri and eakes. But the lac trade declined from 1943 - 44 and the factory had to close down. No major steps taken by the government for the revival of the lac industry since than.

From these we can say that though Mayurbhanj district is beset with a slendour base for industrialisation, due to lack of initiative and faulty planning strategy and industrial policy, the district remained as a backward region of the state of Orissa. Though various surveys conducted by the Directorate of Mining have indicated possibilities of setting up various important industrial units like paro-vanadium and vanadium pig-iron plant, glass-factory, pottery manufacturing unit and clay-washing unit, lime-industries etc. these are not being set up due to the one or other reasons.

TRANSPORTATION :

The development of a region is based on the transportation facilities inherent with that region. There is a direct relationship between the development of transportation and the progress of a society. Therefore, transportation is of greater significance for the


DISTRICT
MAYURBHANJ
(ROADS & RAILWAYS) REFERENCE
N
4 0 4 8 MILES
A
B
BAHALDA
JAMDA
R.R.PUR
KUSUMI
BISOI
SARASKANA
BANGRIPOSI
KULIANA
SULIAPADA
NH.6
JHASIPUR
RARUAN
BARIPADA
MDR-1
MORODA
R.G.PUR
MDR-10
KARANJIA
NH.5
BETNOTI
MDR-5
KHUNTA
BADASAHI
MDR-70
BAISINGA
UDALA
SECTION – A'
TIRING
THAKURMUNDA
KAPTIPADA
DIST. BOUNDARY
DIST. BLOCK, N.A.C.
MUNPY. HQRS.
NATIONAL HIGHWAY
M.D.R. O.D.R
RAILWAYS
Broadgauge
Narrowgauge

development of a particular region.

Here we present a brief picture of the transportation facilities available in Mayurbhanj district.

a) **National Highways** : We found No.5 and No.6 national highway No.5 starts from NH-6 at Jharpokharia in the district and passes through important places like Kuliana, Baripada, Betnoti and Baisinga after which it proceeds towards Balasore district. Important villages lying on the road of NH-6 are Joshipur, Tongabilla and Singra. It connects Bombay through Pallahara and Sambalpur. The length of the both NH-5 and NH-6 is only 136.46 Km.

No state Highway passed through the district.

b) Major District Roads (MDRs) there are many major district roads which are connecting various interior parts of the region like Baripada - Chitrad - Amarda Road, Niligiri - Kaptipada - Udala - Baripada - Midnapore Boarder Road, Baripada - Bamanghaty Road, Rairangpur - Jashipur, Karanjia - Dekhikote Road, Baripada - Dukura - Mantri - Mangovindpur - Narangan Road etc. The total length covered by major district roads is 368 Km. surface roads and 88 Km. un surface roads.

c) **P W D Roads** : P W D Road is divided into two catagories that is other district roads and classified village roads. Other district roads covers 180-40 Km. surface roads and 138.75 Km. un surface roads, where as classified village roads covered 72.70 Km. surface roads and 469.00 Km. un-surface roads.

d) **Other Roads** : Apart from the above mentioned roads the other type of roads available in the district covered 193.58 Km. surface and 8147.10 Km. un - surface roads respectively. By the end of 1980-81 total length of roads from all these sources stood 951.14 Km. surface and 9793.99 Km. un surface roads respectively.

e) **Rail - Roads** : At present, there are 70 Km. of broad gauge and 95 Km. of narrow gauge rail-way lines in this district. The narrow gauge line connects Rupsa with Bangiriposi through Baripada. The broad gauge line connects Tatanagar with Garumahisani and Badampahar. This line is mainly constructed to explore the mineral resources, particularly iron-ore from this region. It is not meant for public use.

From, all the above mentioned socio-economic characteristics, we can fairly conclude that the Mayurbhanj district is a typically agrarian economy having 85% depended upon agriculture. The productivity of land is 89 quintals per hectre and percapita income from agriculture is Rs. 793.94 which are very low in comparison to other parts of the country. Hence, there is every scope of agricultural development in this region. Similarly we found that Mayurbhanj is beset with sound human, forest and mineral resources which can be able to provide a solid base for forest - based industries and agro-based industries. As the people are mostly ignorant and they are bluntly under the blink of poverty so the only way out is to change the existing planning strategy and to follow a new strategy which must be based on the local needs and resources. In stead of importing human capital from outside, the local people should be adjusted and instead of setting up of heavy and medium scale skill-based industries, small and cottage industries should be emphasised.

1. District Gazetteers of Mayurbhanj, 1967.

2. O.P. cit, pp 27-33.

3. District Statistical Hand Book of Mayurbhanj, 1981, Govt. of Orissa, Bhubaneswar.

4. Statistical Abstract of Orissa, 1981, Govt. of Orissa, Bhubaneswar.

5. District statistical Hand Book, 1980 - 81, pp - 84-86.

6. Indicators of Economic Development of Orissa, 1983-84, Bureau of Economics and statistics, Orissa, Bhubaneswar.

AGRICULTURAL DEVELOPMENT

Agriculture is the main-stay of the district economy of Mayurbhanj. At about 85% of the total population directly or indirectly depend upon this sector.[1] Agriculture not only provides means of livelihood to the people of this district but also considered to be the sound base for the rapid development of the area. By absorbing maximum number of people and by giving them employment potential, agriculture serves as a source of inspiration for the backward, illiterate, underdeveloped, Poverty-ridden people of Mayurbhanj district. As such we can be sure that an evolutionary change in agriculture in this district will bring forth a new dimension in the socio-economic life of the people.

Realising the fact, the government of Orissa along with district machinery made an attempt to develop this sector since planning era. But inspite of several plans and programmes the story remained the same as it was before or at best we found a slight change. The trend of production of this district reflects the story that inspite of several irrigation measures, fertiliser and pesticide consumptions and the introduction of high-yielding - varieties (HYV) have no much effect in the production of food-grains in this district. So, the approach of the planning till now is not accurate to exploit the land

resources of the economy. The government is only made an attempt to develop agricultural sector by going through the outer surface which is not the real cause of the backwardness of the agriculture in this district.

We, therefore, in this chapter made an attempt to highlight the problems of agricultural development and planning emerging due to lack of proper and adequate approach. Here we also have done a special study on agricultural development and planning in the context of micro-level planning.

For the purpose of micro-level planning for the development of agriculture in Mayurbhanj district an analysis of the components of growth crop out-put is attempted in this section following the Minahas - Vaidyanathan,[3] decomposition methodology, For the purpose of the decomposition of agricultural growth in Orissa and in Mayurbhanj district we have chosen six major crops viz, Rice, Wheat, Maize, Groundnut, Arhar and Jute, and since their share in the total crop out-put of the district is more than 80% they can be taken as fairely good representative of the crop out of the state as well as in the district of Mayurbhanj.

The observed increase in crop output of the district as well as the State has been decomposed in to four component elements, i.e., the contribution of (i) change in area, (ii) change in per acre yield, (iii) change in cropping pattern, and (iv) the interaction between (ii) and (iii). For the purpose the following scheme of decomposition is used.[4]

$$
\begin{aligned}
P_t - P_o &= (A_t - A_o) \quad \Sigma_i W_i C_{io} Y_{io} \\
&+ A_t \quad \Sigma_i W_i C_{io} (Y_{it} - Y_{io}) \\
&+ A_t \quad \Sigma_i W_i Y_{io} (C_{it} - C_{io}) \\
&+ A_t \quad \Sigma_i W_i (Y_{it} - Y_{io}) (C_{it} - C_{io})
\end{aligned}
$$

Where, P = crop output

A = Gross Cropped Area.

W_i = Constant price weight of a particular crop

C_i = (Area under a particular Crop)/A

Y_i = Yield rate of a particular crop.

(Suffixes 't' and 'o' are used for the current year and the base year respectively).

In the present context we have taken 1971-72 as the base year and 1980-81 as the current year in order to decompose the agricultural development of Orissa as well as

Mayurbhanj district. By following the same methodology we found the result as mentioned in Table 2.1. An analysis of the effects of different components of the growth of crop output (may be termed as growth of agriculture) finds that while the effect of areal component is positive for Orissa as well as Mayurbhanj district, effect of Cropping pattern and the effect of component interaction between component area effect and the component effect of yield rate are negative for both the state as well as for the district.

The date in Table - 2.1, provide the basis on which we plan for the development of agriculture in the district as well as in the state. A special look at the performance of the second and the third component. i.e., component effect of yield rate and cropping pattern give the planners some distinct insight into the whole situation and opportunities to look for planning solution. Hence these two components are to be planned and used accordingly for increasing crop output in the district. We found that the component effect of yield rate is much higher in case of Mayurbhanj district than that of Orissa. This implies that though the farmers of the district are illiterate & conservative, they are also well responsive to the

modern techniques; like irrigation,use of fertiliser, pesticides, insectisides and high yielding varieties to increase the volume of output.

Similarly, it is also observed that the magnitude of the component effect of cropping pattern in the district is much higher. Therefore, much more attention should be given in this field in order to boost up agricultural production of this region. A t least the planners should try to make it positive. The other two components by their very nature, to a very great extent, either given to the planners or determined by some other outside factors. And while in the present study yield rate and cropping pattern assume the most important role in determining the agricultural growth, give the planners all the more opportunity to look into the problem with a firm planning criteria.

In order to increase agricultural productivity the planners will have to plan taking into consideration the component effect of yield rate. This can be done if the following steps are taken.

At the outset, the main thrust of the planners for the development of agriculture in the district has

TABLE - 2.1

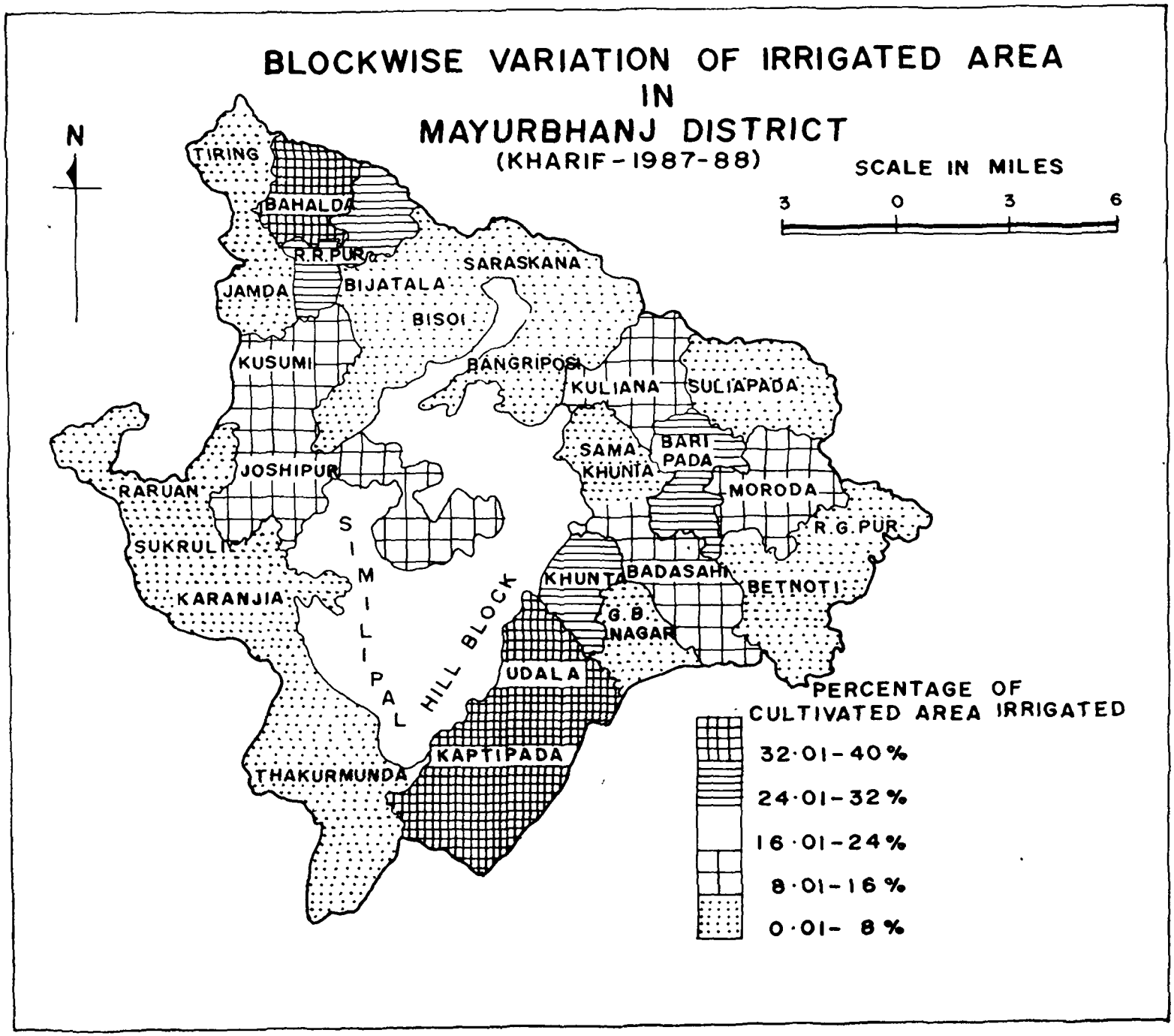
DECOMPOSITION OF AGRICULTURAL GROWTH OF ORISSA AND MAYURBHANJ DISTRICT (1971-72 TO 1980-81)

Name of the State/District	Component area effect	Component effect of Yield-rate	Component effect of cropping pattern.	Component interaction between (2) & (3)	Total (Pt-Po)
1	2	3	4	5	6
1. ORISSA	1352964500 (300.6)	615820200 (136.8)	-1350758500 - (300.1)	-167934570 - (37.3)	450091630 (100)
2. MAYURBHANJ	65055470 (53)	191017140 (155.7)	-78529597 - (64)	-54846589 - (44.7)	122696424 (100)

to be in the domain of irrigation, drainage and water-management. As we mentioned less than 10% land of the gross cropped area were irrigated which is very insi - gnificant for the purpose. Therefore, considering the vagaries of rainfall and frequent droughts the irrigation facility should be increased at least to 30% by the end of the 8th plan and to 40% by the end of the present century.

But in irrigation, we have to take a number of measures to improve its productivity. Firstly, there has been a great deal of gap between gross irrigated potential which has been created between 1951 to 1986-87 and the potential which has been utilised - the gap is not less than 25%. Particularly the gap is more in major and medium projects than in minor projects. Since the cost of major and medium projects has increased considerably,[5] in the next phase of irrigational development, greater stress should be given to bridge the gap rather than to create new major and medium irrigation project. Secondly, the productivity of the capacity which has been created in irrigation projects is not more than one third of what can be achieved through improved arrangements for the distribution and application of water.[6] In Mayurbhanj district the

government has initiated some programmes of on-farm development works, like field channels, field drains, etc. But the progress is very slow. High priority should be given in the next plan to complete the work of on-farm development to increase the productivity of irrigation water. In fact, where management techniques through field channel system have been attempted, there has been a saving of irrigation losses to the tune of 20% with an emergence of a three-crop regime.[7] Thirdly, the maintenance of canals is now in a deplorable stage. Lack of finance has stood in the way for modernisation of canals. It will not be out of place to suggest to increase the rates of irrigation tax at least to maintain the existing irrigation system, if not to raise revenue for developmental purpose. In fact, water has been far too cheap an input to the farmers of Mayurbhanj district and it is necessary to make him realise that water is a costly input and he should economise the use of it to his own advantage. Finally, the reservoirs which have been built with a lot of expenditure and are used for flood control and irrigation must be saved from the threat of premature siltation by effective afforestation and soil-conservation measures in the catchment areas of reservoirs.


BLOCKWISE VARIATION OF IRRIGATED AREA
IN
MAYURBHANJ DISTRICT
(KHARIF - 1987-88)
N
SCALE IN MILES
3 0 3 6
TIRING
BAHALDA
R.R.PUR
JAMDA
BIJATALA
SARASKANA
BISOI
KUSUMI
BANGRIPOSI
KULIANA
SULIAPADA
SAMA KHUNTA
BARI PADA
JOSHIPUR
RARUAN
MORODA
R.G.PUR
SUKRULI
SIMILIPAL HILL BLOCK
KHUNTA
BADASAHI
BETNOTI
KARANJIA
G.B. NAGAR
UDALA
KAPTIPADA
THAKURMUNDA
PERCENTAGE OF CULTIVATED AREA IRRIGATED
32·01 - 40 %
24·01 - 32 %
16·01 - 24 %
8·01 - 16 %
0·01 - 8 %

Another point which we want to emphasise here is that in future programme of irrigation, greater stress should be given to ground water development. Ground water is not only more economical, it is also more productive. According to a recent study, ground water is twice productive to that of canal irrigation. Ground water represents a source of irrigation which is under the direct control of the farmer. He can apply water to the land exactly when and to the extent it is required by the crop. Ground water development also requires less investment, can also be completed within a very short period of time and avoid water-logging.

Secondly,to increase yield rate HYV varieties should be introduced to a greater extent in the district. Since, rice cultivation is the main-stay of cultivation in Mayurbhanj district, efforts should be made to provide HYV seeds to the people.

Efforts should be made to supply short duration paddy seeds to the farmers of this district so that they can be able to produce more without any damage due to lack of sufficient rainfall.

Research findings show that early showing of paddy under rainfed conditions is able to escape from the vagaries of monsoon which normally occur in the latter half. This also helps to escape from past attack which occurs after the monsoon has made sufficient progress. Therefore, such early variety seeds are to be provided to the people through government authorities.

Thirdly, fertiliser consumption should be increased in the district. Though we found that the consumption of chemical fertiliser is showing an increasing trend in the district, it is still much lower than the all-Orissa average. This shows that considerable effort has to be made for increasing the supply of fertilisers in the district. Arrangement for fertiliser distribution particularly in interior areas are not satisfactory. Therefore, the planners should devise plans so that fertilisers should be provided to the farmers adequately and timely.

In addition to chemical fertiliser, there should be increased use of bio-fertilisers. There has been some progress with regard to gobar-gas in the district, but no progress has been made with human excreta and urban wastes which are widely used in China and South Korea after treatment and are a source of large quantities of

naturally renewable nitrogen. Therefore, the planners have to see and formulate developmental plans for agriculture taking the above mentioned facts into consideration.

Apart from these, as we have mentioned that the farmers of the district are very poor, so, credit facilities are to be provided to them with easy instalments. The bulk of the farmers are small and marginal farmers. Their resources are meagre. They can not modernise agriculture on their own resources. But the flow of institutional credit for financing of inputs and on-farm investment is not adequate. Co-operative credit structure is weak in the district and can not meet the growing needs of farmers. Commercial banks are still urban-oriented. Overdues are rising. All the institutional credit agencies suffer, according to Sen Committee Report, from shortage of village based, skilled and trained man-power at the branch levels. Assuming that the credit requirement for irrigated agriculture is Rs. 1000/- per hectore and for un-irrigated agriculture Rs. 800/- per hectre, the planners have to formulate plans and government should come forward in this line to help the farmers so that agricultural productivity will be stepped up.

Secondly, much emphasis have been made to change the cropping pattern to boostup agricultural production. Among all these four effects on agricultural development, the component effect of cropping pattern is the most important one. Even though the effects of all the three growth components are negetive and that of only cropping pattern is positive, it takes a position of a block as high as third according to the levels of agricultural development of 19 blocks in Bihar. Similarly, Mehsi block which placed itself in the 15th position inspite of all the three growth components except the cropping pattern (whose effect is negetive) registering the highest effect.[8] So, we can safely say that cropping pattern is very much significant in the development of agriculture of a particular region.

Such a significant role of the cropping pattern is strengthened even more when it is found that the correlation between levels of development and the effects of non-areal components of growth of agriculture is very high.

Therefore, alongwith increased yield rate, the clue for the induced agricultural growth particularly in the backward regions like Mayurbhanj district lies in the

crop-planning rather than others. For changing cropping pattern and improving the intensity of cropping, the following measures may be taken.

First of all, the transport facilities should be extended to a greater extent so that the farmers will be able to get sufficient opportunities to purchase inputs and sale out their outputs. Improved transportation also helps the farmers to know various kinds of new seeds and technology available in other areas.

Secondly, much emphasis should be given to extend the market of agricultural production. If market is not wide and there is no demand for agricultural products, then the poor farmers will not get price of their product. When they will not get sufficient amount, then they are unable to pay the labourers and also unable to meet the price of inputs for their cultivation. Hence, the planners should keep an eye on the market facilities for the agricultural products produced by the farmers.

To improve the productivity of land, the following changes are also necessary in cropping pattern of the district. First,high land including marginal, sub-marginal

and sloppy lands which accounts nearly 40% of the net cultivated area is not suitable for rice. Rice is grown in such land often under severe moisture stress and therefore,the productivity is very low. In these areas rice should be replaced by some other crops like ragi, maize, mung, biri, groundnut, till etc. Also stress should be given to cultivate papaya wherever possible. Where there is resistance to give up paddy, mixed cropping with Arhar and paddy combination will be profitable. In low-lying water logged and ill-drained fields no suitable high yielding varieties of rice are yet evolved. In all these areas, late duration photo-sensitive varieties which are ready for harvest from mid-November to the end of December are grown. The general problems met with in such areas are[9]:-

a) Poor establishment of seedlings due to partially sub-merged conditions.

b) Pre-mature lodging of the crop under even slight application of fertiliser.

c) Low photo-synthetic efficiency of varieties due to reduced light intensity, and

d) Accumulation of toxic substance due to ill-drained field conditions.

For the above purpose qualitative seeds are to be needed. As the farmers of the district are poor and illiterate, they are usually using the low quality seeds available in the rural sector. But without high quality seeds the productivity of the land can not be improved. The present quality seeds that are available in the rural areas of the district are not adequate to meet the requirements of the farmers. Therefore, the seed corporation of Orissa has to take direct responsibility for increasing and distributing quality seeds among the farmers. The present position of dual responsibility between the Seed Corporation and the Department of Agriculture has created a lot of confusion and mismanagement. That should be irradicated and the distribution charge should be given to village agricultural officers. By taking in to consideration the land and the demand of the farmers they should collect the seeds from the corporation and distribute to the people.

However, proper crop planning, supply of inputs, organisation of production and removal of defects can be effective if the area is small and compact and a group of personnel is made responsible for it. If the production is systematised real land improvement and

agricultural investment will be possible and bank credit will be available for it. Thus, when the main source of income of the district is agriculture, let the entire agricultural land in the district be divided into units of ten thousand acres each. Each unit has to be ultimately under the supervision of one team of persons. It will have its own crop planning and animal husbandry, irrigation and drainage system of supply of various inputs and necessary marketting and credit management. Area planning is necessary for employment of labour and increase of production. The nature of technique to be used will vary according to situations and factor supplies. On the basis of the total net cropped area, the area planning should be started in the phased manner.

Therefore, we come to the conclusion that irrigation, fertiliser, HYV seeds, insectiside and pesticide etc. like factors are of much significant to increase the yield rate in the district. So, they must first be assured before any crop planning could be thought of, while rationalisation without modern inputs is warrented. Hence, in the backward districts like Mayurbhanj, the prospect of agricultural growth lies in the utilisation of modern inputs and in the

introduction of proper cropping pattern, i.e., choice of crop-roatation and crop combination. Therefore, the district planning authority along with irrigation, fertiliser and other alike factors should give much more importance in planning to the cropping pattern in a particular region and that should be the basic approach to planning for agricultural development.

REFERENCES :

1. See chapter 2,
2. Ibid
3. Mɪnhas - Vaidyanathan, 'Growth of Crop-output in India 1951-54 to 1958-61 : An Analysis by Component Elements' In Journal of the India Society of Agricultural Statistics, Vol. XVII, No.2.
4. S.K. Mishra, T.K. Mohanty and C.R. Pathak, Micro-Level planning for Agricultural Development. A case study of East Champaran District, Bihar, Indian Journal of Regional Sciences, Vol. X, No.1 , 1978, pp. 24 to 31.
5. B.B. Vora, Managing India's water Resources, Kurukshetra, July, 1988.
6. Ibdi, p.9.
7. B. Mishra, Strategy for Agricultural Development in Orissa, paper presented at the Seminar on 8th plan of Orissa, 1988.
8. S.K. Mishra, T.K. Mohanty and C.R. Pathak op cit p. 30.
9. B. Mishra, op cit. p.22.

INDUSTRIAL DEVELOPMENT

Industrialisation has been recognised as a basic tool for economic development where the size and location of industry is determined by several factors including resources available and needs of the region. Large scale industry can not be established anywhere and everywhere. A particular industry needs some particular raw materials. It may not be possible to get all the required raw materials at one place because of improper distribution of resources. So, there arises the problem of getting all the needed commodities at minimum cost at one place. There may be some places where the raw materials can be obtained at a minimum cost. The second consideration is that manufactured goods needs vast area of demand rather than be absorbed in the local area. Therefore, the industrial unit should be located at such a place that it could meet the demand of the entire area. In deciding the location of industries the following factors exert considerable influence. These are : resources/raw materials Power labour, transport and communication, market, site and service, finance and availability of entrepreneurship and talent[1].

Now, in the light of the above mentioned factors, we made an attempt to provide the real industrial picture of Mayurbhanj district.

R E S O U R C E S :

The main resources of the district which have great importance for industrial development of the district are minerals, forest, agriculture and live-stock, These resources directly or indirectly supply raw materials for industrial development.

Mineral Resources :

Though the district is not endowed with sufficient mineral resources, still the minerals which are available can be able to provide a sound base for several industries in the district. The main mineral resources of the district are : Iron-ore, China-clay, Quartz & quartaite and Soap-stone. In the state of Orissa, Mayurbhanj is the only district having the mineral of soap-stone. The total area covered by this mineral is 75,000 hectres and the total output is 698 M.Ts. in 1981. Similarly, in the field of quartz and quartzite, the district's place is second in the state. The total volume of output in 1981 is 13,083 M.Ts. In the field of china clay the district has also the sole advantages. Apart from these, there are 12 working mines of iron-ore in the district covering 4,750.109 hectres of area. The volume of output stood 3,81,869 M.Ts in 1980-81.[2] The other minerals that are available in the district are Asbestos

and Kyanite covering 117.350 hectres and 55.490 hectres respectively in 1981.[3]

But inspite of all these minerals, there is no industry in the district which is based on these minerals. Almost all minerals are exported to the states of Bihar and West-Bengal.

P O W E R :

The district has no power sources. But it can get sufficient hydro-electric power from Hirakud directly. But the matter is that, when the state is under the deficit of power supply, then this district also has no exception to it. Now, the Orissa govt. is importing power from outside states. Inspite of outside supply of electricity, the power-cut is common in all seasons. So, the district is not self-sufficient in power.

Forest Resources :

Forests provide various products for industrial and domestic consumption. The forests of Mayurbhanj is called the treasure of wealth. A minimum of 25 percent of the total area should be under forests in order that they may effectively help to fulfil the ecological balance and economic requirements of a region.

But the forest area of the district was 5006.68 Sq. Kms. which was about 48% of the total geographical area in 1980-81. The main forest products are wood (species like Sal, Piasal, Sisum, Kusum, Asan, Kondam, etc.) bamboo, Kendu leaf, Tassar cocoon, Lac, Sunari bark, Sabai Grass etc. But it is a matter of regret that all these are not used for the industrial development of the district. Only small scale exploitation goes on by the people for their daily consumption purposes i.e., for firewood, brush-wood, thatching grass household materials like plough, dhenki, etc. and for construction of houses. In the collection of Sal - seeds the district tops the list. But all these forest products are exported outside (even there is no adequate saw-mills and no wood seasoning plant) the district.

Agricultural Resources :

As we mentioned in the last chapter, more than 85% people of the district are depending upon agriculture. Being the basic sector of the region, it provides not only food for the people, but also raw materials for the factories. Sugarcane and groundnut are the two cash-crops of the district. But the production of sugarcane is very negligible one. The district also provides agricultural products like rice, oil seeds etc. for cottage and

village industries and to small scale industries. Agricultural waste are also available for paper and card-board making. But, inspite of one flour mill and some haulers, there is no even rice-mills in this district.

Livestock Resources :

Livestock in this district includes cattle, buffaloes, sheep, goats, pigs and poultry. The number of different types of livestock was about 17,35,164, in the whole district, in the year 1977. Out of which, 761,900 were cattle, 48,380 buffaloes, 148,562 sheep, 384.036 goats, 54,473 pigs and 1,337,813 total poultry. The livestock product for industrial development comprise milk, hides, skins, bones and horn. On the basis of these resources, diar y farming, leather processing, born mill and horn industries can be established. But except some tunning work in the district, no more industries are there . to exploit these resources. No doubt the livestock of the district is not of good quality and high-yielding variety, but it is also sure that quality can be improved with the improvement of living standard of the people and with the increment of literacy level, knowledge and skill.

L a b o u r :

For industrial development, labour occupies important place. In Mayurbhanj district having high population pressure and under employment, there is no labour availability problem. But problem is of quality of labour and their sense of discipline. In this district we found skilled artisans but the labourers are not technically skilled. Due to illiteracy and poor technical-education opportunities, the labour of this district are poor in quality. But, it is sure that they must prove their efficiency in case of small and cottage industries which require less technical know-how. It is so, because they are hard-working by nature.

Transport and Communication :

Although the motor buses, trucks and railways are important means of regional transport, the traditionally important bullock-cart, pack-animals and even the human porters still play a great role in the rural areas of the district. The road map of the district[4] showing the transport net and nature of the road and railway accessability patterns provide sufficient indictment to say that the transportation facility of the district is not sufficient to exploit all these resources of the district. The narrow-gauge railway line is very meagre

to meet the present challenge of industrialisation. Similarly, there are many fair-weather roads. During rainy season, therefore, the people are not able to transport goods and commodities smoothly. Transportation is also one of the cause of the backwardness of industrial development of Mayurbhanj district.

Site and Service :

Site requirements for industrial development can in themselves be of immense importance. Site commonly needs to be reasonably flat with solid ground, both extensive and cheap and served by adequate transport facilities. In some cases industry may be attracted to particular sites because of the prior existence of useful facilities. Mayurbhanj district is well endowed with beautiful well-suited sites for industrial development but it is deficient in providing adequate transportation facilities. We also found that there is lack of co-ordination in all facilities needed in industrial location within the industrial estate. (i.e., Takatpur, near Baripada) of the district. That is why industrial complex is being crowded, while industrial estate is not.

M a r k e t :

It is becoming more and more that industries are seeking locations as near possible to their markets, in deed, it has been remarked that market attractions are now so great that a market location is being increasingly regarded as the normal one, and that a location elsewhere needs very strong justification.[5] For developing regions like Mayurbhanj district, Market is not a problem for manufactured goods. The district has about 22 markets (small and big, daily) . These markets may be treated as location points for industries and the entire area may be treated as market area.

F i n a n c e :

The capital requirements of modern industry are great and industrial locations may be well affected by the availability or non-availability of capital resources. The availability of capital is marketedly affected by the presence or absence of financial institutions which specialise in assembling capital and making it available to industrialists. Total number of scheduled commercial banks working in this district are 89 (1984). The attitude of the banks vary widely within the district. We found large number of branches in Baripada and Rairangpur Tahasil and less number branches in other

tahasils. Therefore, we found generally more number of industries in these two Tahasils. Udala Tahasil suffered much in this regard.

Availability of Entrepreneurship and Talent :

Entrepreneurship and talent are of prime significance for industrial development of a particular region. But, in this district, we found there is lack of entrepreneurship in amongst the people. They are poor and illiterate. They do not want to take risk by investing money in industrial concerns. Though the people are traditionally skilled, they are not able to cope up with modern techniques of production. The district is backward because of the reason that the people are illiterate and unskilled and also the government has neglected this area. There is only one I.T.I. at Baripada having a very limited scope for technical education.

From the above discussion, we can say that the district has sufficient natural, forest, agricultural and manpower resources for industrial development.

Present Industrial set-up of the district :

The present industrial set up of the district is not sound one to exploit the available raw materials.

There are 4 medium scale industries and 50 small scale reported industries (up to 1980) in the district. But most of these industries are not using the local raw materials. Only some of them (Like edible oil mills, flour mill etc.) are using local raw materials. Among the industries that are working in the district, bulb-making, oil-making, flour-making, chemical-making, aluminium-utensils-making are the main type.

But all these industries are unable to utilise the local available resources. The forest products (like sal seeds, Tassar, lac, Kendu leaf etc.) are not utilised in this district. Similarly, agricultural and mineral resources that are available are not used for industrial purposes.

Apart from these, the government has given much more emphasis to set up industries like Baripada Spining Mill, Nicco Orissa Limited (Baripada) etc. which are mostly relied upon raw-materials available outside the district. The employees of such industries are mostly outsiders. Only the district people are working as dailly labourer and in lower grades. The technical persons are joined from outside the district. This is not desirable because, instead of the development of the

people, they are being exploited by the outsiders. Therefore, if the present trend will be continued, then, the development of this district will be remained as myth, it never be realised. Hence, we need a change in the approach to planning for industrial development. Before we are going to suggest some suggestion for industrial development, it is necessary to explain the present industrial potentials of the district.

Industrial Potentials of Mayurbhanj District :

The industrial potential of the Mayurbhanj district is based on available raw materials, infrastructural facilities and the market. The attempt here is mainly concerned with the identification of areas where there is **relatively** potential during the coming years. Nature has provided very poor economic resources to this district. But, the forests of Mayurbhanj provide sufficient scope for their economic exploitation on small-scale basis. Similarly, the agricultural products and sizeable livestock also provides a good base for many small, medium and cottage scale industries in this district. Apart from these, the hardworking labour force also a boon for the purpose. There resources, though not rich and varied, could not be tapped fully so far due to a number of inhibiting factors.

The resources, however, certainly provide a tremendous scope for economic exploitation through a planned industrial development programme. The potential for industrial development has been studied as follows :

i) Industries Based on Agricultural Resources :

Before chalking out a programme for industrial development, it will be better to assess the agricultural resources as well as their potentiality for industrial development. It is estimated that more than 85% people of this district derive their livelihood from various agricultural resources. Agriculture provides paddy and other foodgrains, edible oil, spices, jute, sugar-cane etc. as raw materials.

Rice Milling :

The district is dominated by rice production. 3,34600 metric tonnes of rice had been produced in the district in 1980-81. But even though, there has been such large production of rice in this district, there are no modern medium scale rice mills in this district Only a vary few number of haulers are there in the district. Therefore, at least one medium or small-scale rice mill may be set up in this district and particularly in Baripada Tahasil, where paddy production is

high and also good transportation facilities.

Rice Bran Oil-mill :

On the establishment of rice mills as suggested above, rice bran will become available in sufficient quantities. A few small scale units for extracting rice bran oil by solvent extraction process may then be considered at least one at Baripada.

Automatic Pulse Mills :

The district produces about 34300 metric tonnes of pulses of all varieties but at present there are no registered pulse mills in the district. Therefore, atleast 15 automatic pulse-mills may be planned in the district.

Maize Starch cum Liquid Glucose :

Maize contains about 50 to 70% starch. The major demand for starch in the country is for the cotton and textile industries which account for the consumption of about 80% of the present production. The next consumption is in paper, jute, glucose, dextrose & in cosmetics manufacturing unit. There is no starch-cum-glucose unit in Orissa at present. The production of Maize in the district was 18600 M.Ts in 1981-82 which

is sufficient to start at least a small-seale starch-cum-liquid glucose unit in the district. This unit may be started at Rairangpur tahasil.

Spice Grinding and Packing :

The production of chilli, Haldu and other spices in this district though not very high still it provides base for spice-grinding and packing industries. Small and cottage industries are to be set-up in various tahasils in this regard.

Edible oil-mill :

In this district, we found two oil-mills (i.e., one at Baripada and another at Betnoti), But the demand for edible oil is not maintained by the supply of oil. Apart from this the total oil-seeds production of the district is 24900 M.Ts which is sufficient to provide raw materials. The existing two oil-mills are producing mastered oil only. Therefore, it is suggested that at least two more oil-mills may be started one at Udala and another at Karanjia to tap the total product of oil-seeds in the district.

Industries Based on Livestock Resources :

The large livestock population in the district

(17, 35, 164 in 1977) provides valuable raw materials for industrial purposes, such as milk, wool, hides and skins, meat, horns and bones.

But it is a matter of regret that there is no diary-farm in the district and also in the near-by districts. Therefore, it is of great potential to start a small-scale diary-farm in the district, particularly in Baripada tahasil area.

The district also has about 148,562 sheep. But, emphasis has not given for wool-production in the district. These number of sheep can at least produce 155000 Kgs. of wool if due care has been taken and the volume may also further increased as a result of the natural growth of sheep population. At present there are no woolen mills in the district. But, if emphasis has been given and wool will be produced with proper care then one small scale industries can be run with that quantity of wool.

Bone Mills, Brush, Toys and Comb-making units :

There are no such mills in the district. Bone-mill is a superior fertiliser containing about 2.5% nitrogen and 28% phosphate. As the district's demand for

fertiliser is maintained by outside supplies, so it is desirable to start at least one bone-mill in the district with a capacity of 10 M.T. per day.

Apart from this, to tap the raw materials like horns and skins toy-industries and comb-making industries should be initiated.

Tanneries :

In this district skins and hides are available to a greater extent, Some of them are used locally ; but the bulk is exported. So, there is a scope for tannery in the region by encouraging the collection of hides and skins because there is no tanneries in the region.

Industries Based on Forest Resources :

Mayurbhanj is enriched with forest resources. The major forest product of the district are timber, fuel-wood, Kendu leaf, Sabai grass, bamboo, lac, tassar etc.

Tassar Industry :

In the past, Mayurbhanj is famous for tassar manufacturing. But due to some or other reason, it has gone. But tassar remained as one of the major forest products

of the district. After Independence, steps have been taken to revive the case, but much development has not seen till-to-day. This district has technically efficient weavers of this trade. Therefore, tassar industries should be started either in Bamanghaty Sub-division or Baripada Sub-division.

Lac Industry :

Lac cultivation was also a major industry in this district and a section of people in Bamanghaty and Panchpir sub-division cultivated lac as the principal money crops. The lac factory which was set-up in 1943-44 had been closed down. So, at present the lacs are being sold raw in the outside market. But, seed lac, button lac, superfine shellac, T.N. shellac, Kiri and cakes can be produced if one lac industry can be started.

Wood Seasoning plant :

There is no wood seasoning plant in the district. Though the district produces huge amount of timber, due to lack of wood seasoning plant, they are exported outside. Apart from this as the timber is not seasoned, the furniture and other items made out of it are of inferior quality. Therefore, the region has wider potential for atleast two wood seasoning plants. (one at Kaptipada and another at Jashipur).

Saw-milling and wooden furniture making :

As this region is enriched with valuable trees, so there is every scope for saw milling and wooden furniture making industries in the district. The saw-mills are not sufficient to use the timbers of the district. At least 10 more saw mills are needed and also wooden furniture making industries are of great help to raise up the standard of the people.

Leaf-plate Industries :

The district has sufficient raw materials for leaf-plate industries. No high-skill is needed in this regard. Therefore, extensively these industries are to be started in rural areas to use the leaves of the forest.

Bidi-making Industries :

Kendu-leaves is the major source of income of this district. This can be utilised for bidi-making. No-doubt Kendu leaves are used for the same. But not to its fullest extent. It is one of the main source for cottage industry in this district.

Apart from these, as because bamboo, Sabai-grass etc. are being produced to a greater extent, so there is also scope for a paper mill in this district.

Other industrial potentials based on forest resource are electrical assessaries, packing cases, blocks, boards, wooden toys etc.

Mineral Based Industries :

Till now the mineral based industry of the district are not sufficient to absorb the available mineral resources. Most of the resources are exported to outside. The district has good potential for ceramic industry and that may be started at Rairangpur.

Similarly, the district is the only district in the state having soap-stone. But there is no standard soap-factory in the district to tap the resource. Therefore, atleast two soap factory may be started in the district.

Recent survey conducted by the Directorate of Mining has indicated possibilities of setting up of ferro-vanadium and vanadium pig-iron plant, glass factory, pottery manufacturing unit and clay-washing unit in the district. A survey undertaken by the Industries Department has also revealed that there is scope for establishment of stone-crushing industry hand-made paper and tile-industry in the district.

Industries Based on other Resources :

Apart from these industries, there is also scope for setting up of other factories in the district. Lime-industry is one of them. Similarly activated carbon industry may be set up in the district. It is used in (i) decolourisation of vegetable oil, (ii) hydrogenated oil, and (iii) crystalline can sugar. Rice bran and saw dust are two main raw materials for manufacturing activated carbon. These are available plentily and sufficient atleast to setup one small scale unit in the district.

Suggestions for Industrial Development :

Industrialisation is considered to be the corner-stone on which the castle of economic development will be built. The objective of maximum economic development and production specialisation of a district can be attempted through careful industrial planning which entails proper assessment and careful utilisation of resources, adequate provision of infrastructure, initiation of suitable industrial production cycles, provision of additional industrial capacity to meet the demands by either increasing the production capacities of existing industrial units or establishing new plants on carefully selected sites, establishing well-integrated industrial

complexes and assessing the impact of industrial development on the economy at local, state and national level.

The integrated resource plan for each backward district was necessary to work out the 'potentialities of candidate industries in the large, Medium and small-scale sectors.[6] This would be a more realistic approach than the popular conception that high level technology industry should be imported from outside & setup in backward districts like Mayurbhanj without any reference to raw material resource and infrastructure.

For the industrial development of the Mayurbhanj districts following suggestions would be fruitful and healthy.

i) The transportation and communication facilities are to be developed. During the rainy season, people have to pass idle time as the areas are cut off due to rains. Apart from this, it also increases the cost of raw materials. Due stress should be given to increase transportation facility in Karanjia and Baripada sub-divisions. Railway-line should be developed and extended to the interior part of the district to tap forest resources.

ii) Secondly, before starting industrial planning, the resource development plan must be considered the top priority. After resource development attempt should be made for balanced and co-ordinated development of all sources which is not possible in this district as yet.

iii) Thirdly, agricultural development is also a key factor in industrial development because it is not always appreciated that attempts to foster and expand manufacturing industry must be paralleled by development and expansion of the agricultural sector of the economy.[7] Inter-sectoral dependence is an established fact that one sector can not grow until the other grows.[8] Hence, the successful launching of programmes of industrialisation depends upon improvements in agriculture and the degree to which the improvement can be attained will act as incentive for the new industrial developments. Therefore, industrial progress ultimately depends upon an increase in agricultural productivity on a sustained basis[9].

iv) Small-scale and cottage industries are to be supported in this district. Government will have to see that the handicrafts and cottage industries of this district should be revived and developed. As this region is not technically developed, so small and cottage industries are to be always encouraged.

v) In the context of the planned programme of extension, it is necessary that the existing plants should be modernised to increase the efficiency, which has gone down considerably and it will go down further if proper steps for rehabilitation are not taken. The Lac and Tassar industries are to be rehabilitated and proper steps should be taken for their further development.

vi) In the region considerable area is under bodies, and inland fisheries may be developed in these water-bodies.

vii) The district has sufficient base for diary and poultry development. Programmes should be taken in this regard to set up at least one diary-farm and more than 20 poultry farms.

viii) For a region, which is densely populated and has more unemployment, labour-intensive industries would be more suitable. Being a labour-surplus region, Mayurbhanj district should be developed largely on labour-intensive industries. Therefore, bidi making,leaf - plate industries, furniture-making etc. industries could provide vast employment for large population if developed on proper channel.

ix) This district basically agricultural and has no other resource base except forest and little capital. Hence, it needs development of such industries which could encourage the agro-based and forest-based industries and agriculture namely, fertiliser, agricultural implements, flour and rice mills, oil-mills, lime mills etc.

x) The district has sufficient raw materials for paper industry such as bagasse, straw, paddy, bran, waste-paper, bamboo, Sabai-grass etc. Therefore, at least one paper mill is suggested in this district.

xi) To utilise the live-stock resources, some units may be planned for the manufacturer of mixed fertiliser (bone mill), toys and combs (from hom & hoots), brush (from bristles), tanneries and wood products.

xii) At least two wood-seasoning plants are to be suggested for the district. One should be at Kaptipada and another should be at Jashipur. It will help to manufacture high quality wooden furniture. Similarly more saw-mills should be started in the district, particularly in Udala, Betnati, Jashipur, Kaptipada and Karanjia.

The details of policy in this regard can easily be worked out. The main ideas behind industrial development

of the district are to remove poverty, ensure large agricultural productivity and bringout rural development by a process of diffusion of the dynamic forces in the rural areas. A sustained increase in the primary sector is the pre-condition for the success of this scheme.

The scheme envisages an integrated process of development of both agriculture and industries. As such, it also aims at overcoming an important defect of our plans. As it is stated that 'our plans are nothing more than the sum of sectoral needs as perceived by the departments concerned, lacking in inter-sectoral implications and the overall unity', Industry and agriculture are at present developed as if these are two almost unrelated activities. As a result, the growth process does not become reinforcing or self-sustained. Under the procedure so far followed, there is growth no doubt in different sectors like agriculture, industry, trade, mining, transport and the like and a growth rate also, as long as the supports provided continue. But the picture that finally emerges under the existing procedure is a dismal one of islands of prosperity remaining in a vast ocean of poverty, A realistic development strategy, like the one suggested, would bring about a better interaction between the two important sectors for a more fruitful integrated development programme in the backward districts like

Mayurbhanj. In the ultimate analysis, therefore what matter is a more appropriate planning approach and suitable strategy but not the number of industries started.

REFERENCES :

1. Singh, Dr. M.B., Industrial Development patterns, and potentials in Eastern U.P., Lotus Publications, Varanasi, 1983, pp. 27.
2. Statistical Abstract of Orissa, 1981, Bureau of Economics and Statistics, Orissa, Bhubaneswar, pp-305-316.
3. District statistical Hand Book, Mayurbhanj. Government of Orissa, 1980-81.
4. See Road Map of Mayurbhanj District in Chapter - 1.
5. Jarrett, H.R., A Geography of Manufacturing, 1977, p.92.
6. Nath, Pai, 'Suggestions to Small Scale Industries,' The Statesman, Dt. 14.8.1976.
7. Alan, B.M., Industrialisation and Developing countries, 1975, p.58.
8. Khusru, A.M., The Indian Economy (Stability and Growth), p.45.
9. Patnaik, Dr. K.M.
Industrial Development in Orissa, p.88.

INFRASTRUCTURAL DEVELOPMENT

INFRASTRUCTURAL DEVELOPMENT :

In last two chapters we have explained that Mayurbhanj district is a backward agrarian economy and industrially underdeveloped. So, for the betterment of the people we need agricultural development as well as industrial transformation. But all these impossible without a sound infrastructural base. Infrastructural development is one of the basic pre-requisites of economic development of under-developed regions like that of Mayurbhanj district. Without the basic facilities provided by Transport and Power, the development in the primary, secondary and tertiary sectors of the economy is surely to be retarded.

Nowhere this fact is better illustrated than in case of Orissa in general and Mayurbhanj district in particular. Though massive efforts were made in successive five-year plans to develop irrigation, power and transport, and medical facilities, the level from which development started was so low, that it was unable to meet the growing demand from various sectors of the economy. As development proceeded, structural changes in the economy took place which changed the pattern of demand for various components of infrastructure. The total requirement for infrastructure was also determined by changes in the pattern of development that is now taking place

which put greater emphasis on agriculture and rural development and rapid rural industrialisation programmes with an accent on small scale and cottage industries.

The high priority accorded to the development of irrigation and power and the emphasis on the development of transport and communication during the last few years reflects the urgency of infrastructural development in the district. The increasing outlays from 1987-88 to 1989-90 is given below.

TABLE - 4.1

SECTORAL ALLOCATION OF RESOURCES

Rs. in Lakhs

Sectors	1987-88	1988-89		1989-90
	Actual Exp.	Approved	Anticipated	Proposed
1. Irrigation	28.30	80.37	92.37	152.00
2. Power	154.47	199.04	330.68	374.12
3. Transport & Communication	141.46	109.78	109.78	336.44

Sources : Planning and Co-ordination Deptt. of Orissa, Bhubaneswar.

The increasing allocation to irrigation and power sector reflects the increasing need for these facilities partly on account of introduction of new technology in agriculture and partly due to the greater pace of industrialisation. Inspite of the massive investment in

irrigation and power sector, we found that both are inadequate to meet the present challenge of development.

In irrigation front we found that only 16% of the cultivated area are being irrigated from all available sources during the year 1987-88. But it is sure that without the development of irrigation, agricultural development is not possible. An abstract of source wise irrigation potential created by the end of 1987-88 is given below.

T A B L E - 4.2

Source of irrigation	No. of Projects	Irrigation potential in Hectares.
1. Medium irrigation Projects	6	27755
2. Minor irrigation Projects	249	31258
3. Lift irrigation Projects	584	11588
4. Panchayat Samiti MIPs	279	2979
5. Dug wells	4643	1505
TOTAL	5763	75085

Sources : District Planning Office, Baripada.

Thus the irrigation potential created in this district by the end of 1987-88 is 0.75 lakh hectres which is nearly 16% of the total cultivated area. But due to mis-management and corruption the total potentialities are not being expoloted till now. It is only on pen and paper. For example, due to non-construction of field channels, choking of tube-wells, poor yield and change of river course in river, lift points only 5905 hectres of land are actually irrigated during the same year though the created potential is 11588 hectres. Similarly due to shortage of power and non-working of dug-wells the actual irrigated land is much more less than that of created potential. Similarly with regard to medium irrigation projects though the installed potentialities is 27755 hectres, only 18524 hectres of land are being irrigated. So, in actual field the percentage of irrigated land is much less than that of 16%.

Under such circumstances, we may say that irrigation must be given top priority in the forth-coming plans and we suggest the following steps to increase irrigation potential in the district. First of all, the planning authority should give priority in the forth-coming district plans for timely completion of the on-going projects. Secondly, adequate steps should be taken for renovation

of the old and derelict projects for fuller utilisation of the created potential. Thirdly, field channels should be constructed to its designed length for efficient and effective water management. Fourthly, new projects will be selectively taken in the scarcity areas of the district to make rainfed agriculture profitable. Fifthly, minor irrigation projects should be taken effectively. And lastly, adequate power should be supplied to the lift-irrigation projects. If measure, are being taken on the above lines then the problem may be solved in the near-future and the pace of agricultural development will be accelerated.

P O W E R :

For power the district solely depends upon Orissa State Electricity Board. There is no power plant in the district. The total consumption of electricity during 1980-81 was 129 lakhs kilowatt as against 92 lakhs Kilowatt in 1976-77. The power problem is accute in the district. Load-shading has been continuing throughout the year. At least two-hours in a day, there has been power-cut. So, power is another important problem of the district which stands in the way of its development.

The shortage of power that developed in the eighties, has been caused by factors operating both on the

demand and supply side. The Central Electricity Authority assumed a growth rate of 9% per annum for estimating the power requirement for the period 1983-84 to 1989-90. For same period the O.S.E.B. assumed a growth rate of 15 to 20% per annum. But the actual growth of demand for power in Orissa was of the order of 18 to 20% during the period 1980-83. The sudden spurt in demand was on account of the policy of accelerated development of agriculture and industry in the state and the emphasis on rural electrification. Mayurbhanj district has no exception to it. Expansion of industries and technical trades has increased the demand for power. By the end of 1987-88 the demand for power has been increased to the tune of 12 to 14% in the district.

On the supply side, the growth in gross generation from state sources was about 7.5% per annum. Including imports from outside the state, the supply was about 9% per annum. Thus, we found that power is not adequate in the state to meet the present demand and Mayurbhanj district is also not free from the same problem. Therefore, the following measures are necessary to ease the power situation in the state in general and Mayurbhanj district in particular.

Firstly, priority should be given to develop non-conventional sources of energy like solar-energy and bio-gas which will reduce the demand of agriculture and domestic sectors. Secondly, the industrial Policy Resolution of 1986, which provides facilities for setting up captive power plants should be continued. Thirdly, demand for power for domestic purposes has to be regulated in order to make them less dependant on the state power grid and more dependant on alternative sources of energy. Fourthly, low priority is to be accorded to establishing highly power-intensive industries in the district. Fifthly, the feasibility of establishing mini-hydel project of 1 M.W. to 10 M.W. on small rivers may be examined.

TRANSPORT :

Mayurbhanj district suffers from poor transport infrastructure. As a matter of fact this is one of the important factors which has perpetuated the economic backwardness of the district. The existing transport net-work is not designated to promote the economic development of the district by removing obstacles for the growth of an internal market. Economic activities take place over space and therefore development has a spatial dimension. Resources, population, cities are scattered

at different points on the geographic space, therefore a transport network is necessary to connect producing centres with processing centres and ultimately with consuming centres.

In the absence of a suitable railway network to serve as a complement to the load net work, the overall transport network has become in-efficient and lapsided. This becomes apparent from a study of the existing railway and road routes operating in the district.

RAILWAYS :

Railways which are very important for the movement of minerals and forest products from the mining and forests to the consuming centres only cover a very short distance. By the end of 1987-88 total length of railways was 130 Km. only, out of which 47 Km. Broad Gauge Line and 83 Kms. light railway line. The Tatanagar - Badampahar - Gorumahisani Broad Gauge line is only meant for iron-ore. Railway line for every thousand square Kilometer of area was 12.3 Km. for the district as against 14.8 for the state.

Not only the total route length is hopelessly inadequate, its regional distribution is hapazard. All the lines are single route. The light railway line which

starts from Rupsa and ends Talbandh runs through Baripada and Betnoti. But the most important place Rairangpur is not covered.

Thus, the imperative need of the district, so far the railways are concerned, is connect the heart of the region to the existing railway network. The railway network may be extended up to Rairangpur because of its industrial as well as marketting importance. Apart from this the Rupsa - Baripada - Talabandh light railway line should be expanded to broad-gauge one and it should be extended to double-line. As a result of which Rairangpur industrial complex will be connected with Baripada industrial estate and the development will be accelerated.

Road Transport :

Road transport in Mayurbhanj district has been developed very slowly during the planning period. As we noticed from the previous paragraphs that the railway network of the district is inadequate to meet the challenge of transportation. Therefore road transport plays a greater role in the economic scence of the district. The trend in the development of different catagories of roads since 1976-77 is indicated by the following figures.

TABLE - 4.3

(Length of Road in Kms.)

	1976 - 77	1986 - 87
1. National Highways	136.46	136.46
2. State Highways	-	-
3. Major District Roads	455.97	511.00
4. Other District Roads	319.15	330.00
5. Classified village Roads	545.70	274.00
6. Rural Roads	357.00	1066.00
7. Municipal Roads	166.92	185.68
8. Panchayat Samiti Roads	336.00	1774.40
9. G.P. Roads	685.00	5071.00
10. Forest Roads	623.78	952.60
TOTAL :	3625.98	10358.13

Sources : District Planning Office, Baripada.

The figures reveal that there has been no increase in the road length of National Ways during the last ten years. Except National Highway No.5 connecting Baisinga-Betnoti and Baripada, the rest do not move through the interior of the district. There are no state highways in the district. Therefore, the burden of transportation falls entirely on the major district roads and others roads. The

importance of Panchayat Samiti Roads and Rural Roads are much more important for the district economic point of view.

As regards Major District Roads and other district Roads, not only the total length but also its distribution between various sub-divisions highly uneven. While Baripada and Rairangpur sub-division are well-communicated the Kaptipada and Karanjia sub-divisions are less communicated. While the topography and sparse population in these sub-divisions may explain the variation, there is no doubt that road development has been inadequate in these area.

As regards village roads only 814 numbers out of 3709 numbers of inhibited villages have been connected with weather roads, 1248 villages with fair-weather roads, 1359 villages with Kutcha and non-motorable roads and the rest 288 villages are not connected by any feeder roads. Similarly as regards to forest roads, these are not adequate to exploit forest resources.

From this it is clear that a large number of villages, i.e., nearly 77% villages are not connected with all weather roads. The main objective of providing rural roads has been to connect all block and Tahasil

headquarters with all weather roads. Simultaneously,it has been the aim to connect all villages having a population of 1,500 and above with all weather roads. While the policy regarding construction of village and rural roads are sound, what it lacks is a scheme of priorities in view of the extreme paucity of funds for road construction. It is proposed that in the 8th plan, top priority should be given to roads which connect rural market centres with the feeder villages which supply agricultural products to these markets and receive agricultural inputs and consumers goods.

For our survey of infrastructural development in Mayurbhanj district, it becomes clear that in view of the structural changes taking place in the economy, the needs of various sectors can not be met without further allocation of resources to transport, power and irrigation. But there is a danger that any further increase in the percentage share of irrigation and power may lead to less funds being available to commodity producing sectors. Therefore, a balance must be struck between capacity creation and capacity utilisation so far infrastructural development is concerned. In view of the fact that Agriculture and Rural Development, and regional balance in development will receive the same high priority as in the 6th and 7th plans, it is necessary to industries and technology which are less power-intensive. It is also necessary to explore the possibilities of utilising non-conventional sources of power and drawing power from mini-hydel project.

AN APPROACH TO PLANNING FOR DEVELOPMENT

AN APPROACH TO PLANNING FOR DEVELOPMENT :

Since the inception of planning in India, the state plans in Orissa have followed the National objectives of growth, equity and social justice, self-relience, improved efficiency and productivity. The progress so far achieved is not up to the mark and the pace has been slower than envisaged. Inspite of concentrated efforts to step up states economy, the over all growth has not been able to keep pace with the nation growth. The per-capita income of the state is far removed from the national level and even among the larger states, Orissa occupies the 2nd lowest position interms of the per-capita level of income. The slow progress in industrialisation, inadequacy in power contributed to the low growth on the economic front.

Among all the districts of the state, the story of Mayurbhanj district is a serious one. Inspite of state government's efforts at planned development during the past 38 years, this district remains relatively backward in the state. This fact, and also the socio-economic conditions of its people determine our approach to planning for the development of this region.

The backwardness of the region is well-reflected from various fields like per-capita income, agricultural productivity, education and health, infrastructure

development, consumption pattern of its people etc., The percentage of literacy in the district in 1981 stood at 25.47% compares unfavourably with the all Orissa level of 34.23% and falls much behind Puri (45.71%), Cuttack (45.33%), Balasore (41.84%), Sundargarh (36.17%) and Sambalpur (34.02%).With regard literacy rate its position is 11th among the thirteen districts of the State. As regards to infrastructure development, Mayurbhanj had only limited scope as we mentioned in the last chapter.

The backwardness of the district and the poverty of its people become still apparent when the demographic characteristics of its people and their economic status are analysed. According to 1981[1] census, Mayurbhanj continues to have a large concentration of persons belonging to Scheduled Castes and Scheduled Tribes, constituting 65.69% of its total population where as the comparative figures of other districts are much below except Koraput district (69.76%). With regard Scheduled Tribe population Mayurbhanj stood first having 58.56% of total population followed by Koraput (56.34%). This along with the fact that a high percentage of its population belong to the non working young age-groups would indicate the directions which developmental efforts must take in the District planning of Mayurbhanj.

So, these provide the basis on which we develop a suitable approach to planning for development in the district. Before we are going to develop an approach we must be clear about the meaning of objectives, approach and strategy of planning. The objects of planning represent various goals in the socio-economic field which are sought to be achieved over the short-term and long-term periods. 'Approach to planning' represents the basic philosophy which should govern the course of planned development while the strategy represents the manner in which the objects could be achieved over the short - term and long-term periods consistent with the basic philosophy of planning.[2]

In this context, our approach to planning for development should be started from below. So, planning from below is our approach. In order to form a sound policy for development the model must come up from below. The model, instead of working from above on a national state basis first, should be built up from below with either district or block as a base. Initially attempts may be made at district level. It is because of the following counts. (i) The district has been and will continue to be a key administrative unit in the Government functioning, (ii) Most of the records and information

pertaining to revenue, land records, developmental loaning, housing, roads, electrification, irrigation, works, schools, hospitals and the like is available at the district level and infact most government departments have an officer posted at the district level, (iii) Administratively, the district is a well-entrenched unit, with the collector at its head having the capacity to co-ordinate, monitor, ensure results and intract with the areas populace. The continuation of the district as an administrative unit over the centuries has made its homogeneous unit well-recognised by the people who have developed linkages, with the district head-quarters (iv) Interms of size, most districts in various states are manageable units where it is possible to plan with local initiative and involvement. It is also big enough to allow for some major items to form the part of the district plan ; (v) The district has well established political dimension, the Panchayati Raj system and land-development and co-operative banks function within the frame work of the district and even constituencies of legislative assemblies are fitted within district boundaries.[3]

Therefore, the district planning unit should be left to plan for the district. Starting from below has

often been thought the natural thing to do, since final co-ordination at the top is always necessary and in the below-to-above alternative there might be less work involved.[4] Timbergen,[5] however, points out that general experience shows rather more duplication is involved if no idea of the general development exists in the lowest units. Therefore,each district should prepare its own plan using the state and national frame work and the resources available. This, in turn, may lead to optimal utilisation of resources.

SUGGESTED MODEL OF THE ECONOMY :

For the purpose of successful implementation of planning and in order to achieve an optimum allocation of resources in the economy 'Linear programming approach' may be suggested. In the absense of the necessary statistical data, an attempt is made to outline the methodology only. Linear programming can be applied to find solutions to the problem that require the determination of maxima and minima. It encompasses problems in which the quantity to be maximised (or minimised) is stated as a linear function of the independent variables and is subject to a system of linear constraints (restrictions or side conditions) stated interms of those variables. In other words, in such a problem the expression to be

maximised (or minimised) and the constraints, which are often inequalities, involve the variables multiplied by constants and added together.[6]

In this context, the problem may be viewed either as a constrained income maximisation or a constrained cost minimisation problem. In the former, the problem is that maximisation of income of Mayurbhanj district under the given conditions of the supplies of the investment funds, skilled labour, unskilled labour force, fixed quantities of land, etc. In the latter, the investment fund being the most scarce factor giving rise to serious bottlenecks in an backward economy, the economy may desire to minimise the investment costs under the constraints that the district income, employment level, etc. must not fall below certain prescribed level.

The Linear Programming approach for a constrained district income maximisation problem is discussed first. Let us suppose that the statistical estimates are already made and are available regarding the availability of investment funds and the supply of other inputs such as skilled labour force, unskilled labour force, land classified in to various categories, etc.[7], and the economy is divided in to $\bar{n}$ sectors. Now, the problem is how to allocate the available investment

fund and the available other inputs amongst the $\bar{n}$ sectors of the economy so as to maximise district income.

To simplify our analysis, given only for the sake of illustrating the model, following Mahalanobis'es division of the economy into four major sectors[8]. Let the economy of Mayurbhanj district be divided in to the following major sectors -

Sectors :-

Sector - 1 - Investment goods Industries

Sector - 2 - Factory-organised, Consumers' goods Industries.

Sector - 3 - Small scale, household industries producing consumers' goods.

Sector - 4 - Service Industries, including health, education, housing, drinking water, etc.

Sector - 3 - Can be further divided into two sub sectors

Sectors :-

Sector 3-1 - Agriculture

Sector 3-2 - Household and Handicraft industries.

For the sake of simplicity, further more suppose that the only constraints under which the economy has to operate are (I) availability of investment fund (2)

(2) supply of skilled labour (3) Supply of unskilled labour. It is assumed that the statistical estimates of the availability of new investment fund, skilled and unskilled labour forces for the plan period are somehow already made. The parameters of capital, skilled labour and unskilled labour requirements per one lakh rupees of income in the ith sector are designated by a_i, b_i and c_i respectively. It is assumed that such parameters for different sectors have also been somehow estimated. Let Y_i be the increase in district income in the ith sector and ΔY, ΔK, ΔN_1 and ΔN_2 be the total increases in District income, capital stock, employment of skilled and unskilled labour forces respectively.

The linear programming problem is then to find the Y_i's which will maximise :-

$$\Delta Y = Y_1 + Y_2 + Y_3 + Y_4$$

Under the restrictions :

$$a_1Y_1+a_2Y_2+a_3Y_3+a_4Y_4 \leq \Delta K \qquad (1)$$

$$b_1Y_1+b_2Y_2+b_3Y_3+b_4Y_4 \leq \Delta N_1 \qquad (2)$$

$$c_1Y_1+c_2Y_2+c_3Y_3+c_4Y_4 \leq \Delta N_2 \qquad (3)$$

$$Y_1 \geq 0, \quad Y_2 \geq 0, \quad Y_3 \geq 0, \quad Y_4 \geq 0$$

If it is desired that the new employment of skilled labour and unskilled labourer must necessarily be equal to ΔN_1 and ΔN_2 respectively, the second and third constaints will be stated as equations rather than inequalities.

The linear programming problem can easily be solved by using the computational technique of the simplex method. The solution of the problem would indicate. (a) whether the target of the District income by the end of the plan is an optimistic or pessimistic one. The solution would indicate whether ΔY (i.e., the increase in District income) could be equal to or greater than or less than the targeted income of the District during the plan under the constraints specifically laid down. (b) As the constraint (1) is stated interms of an inequality, the solution would indicate whether the quantum of investment need as estimated in the beginning of plan is an over-estimation or not. It is possible that the ΔK (or new investment funds) required to generate the estimated ΔY might be less than the estimated amount in which case the whole of the investment fund, if made available, will not be used at all giving rise to a surplus of investment fund. (c) The linear programming solution also provides optimum allocation of resources.

The allocation of resources is optimum in the sense that the scarce resources (investment fund, skilled labour, etc.) are distributed amongst the different sectors so as to maximise district income.

The Linear Programming model can also be formulated as a contained cost minimisation problem. It may be thought that the new investment fund is the only scarce resources. The programming problem is then to find the Y_i's which will minimise.

$$a_1Y_1 + a_2Y_2 + a_3Y_3 + a_4Y_4 = \Delta K$$

Under restrictions :

$$Y_1 + Y_2 + Y_3 + Y_4 \geq \Delta Y_1 \qquad (1)$$

$$b_1Y_1 + b_2Y_2 + b_3Y_3 + b_4Y_4 = \Delta N_1 \qquad (2)$$

$$c_1Y_1 + c_2Y_2 + c_3Y_3 + c_4Y_4 = \Delta N_2 \qquad (3)$$

$$Y_1 \geq 0, \quad Y_2 \geq 0, \quad Y_4 \geq 0$$

Y_1 represents the additional incremental District income necessary during the plan. N_1 and N_2, represent, as before, new employment of skilled and unskilled labourers respectively. The parameters of capital, skilled labour, and unskilled labour requirements per one lakh rupees of income in the ith sector are

represented, as before, by a_i, b_i and c_i respectively and y_i be the increase District income in the ith sector. The problem is to minimise Δ K, i.e., investment fund under the above constraints. The first constraint states that we won't accept an increase in District income less than ΔY_1. The second and third constraints are stated as equations because we want that the new employment of skilled and unskilled labourers must be equal to ΔN_1 and ΔN_2 respectively. The second and third constraints can also be stated as inequalities if we want that the new employment of skilled and unskilled labourers must not fall below (or, must not be greater than) ΔN_1 and ΔN_2 respectively.

The solution to the above Linear Programming model would provide answers as regards to the minimum quantum of investment fund necessary to achieve a growth rate equal to or greater than the target rate of growth and achieve the required employment levels and its allocation, amongst the different sectors of the economy. The solution would indicate :

a) Whether the required quantum of investment fund estimated in the draft plan is an optimistic or pessimistic one.

b) The solution would indicate whether the growth rate which the economy can achieve could be greater than the one envisaged in the plan formulation.

c) The model also provides an optimal allocation of resources in the sense that the investment funds necessary to achieve a growth rate equal to or greater than the target rate of growth and to achieve the required employment levels are allocated amongst the different sectors so as to minimise investment funds.

In the above Linéar Programming models, the problem is viewed either that of maximisation of District income under the given conditions of the supplies of the investment funds, skilled labour and unskilled labour forces, etc. or that of a minimisation of the investment costs under the constraints that District income, employment level, etc. must not fall below certain prescribed levels. There are, however, other objectives of plan for achieving social justice and equity. These objectives are, however, not included in our above mentioned models. Now, the problem,is how these objectives can also be included in our model.

For this purpose, we need precise quantification of all these objectives. Once a precise quantification in each of the areas, viz., education, drinking water, health services, housing, etc. is somehow decided upon, it should be possible to make some reasonable estimate of the quantum of investment required to meet these needs by using appropriate parameters of capital requirements in these areas. Estimates should also be made of the effects of investment expenditure in these areas on District income and employment levels of both skilled and unskilled labour forces. Once such estimates of quantum of investment (ΔK_a) required to meet such needs and its effects on District income (ΔY_a), skilled labour (ΔN_{1a}) and unskilled labour (ΔN_{2a}) are made, our linear programming model with some modification, can be used so as to achieve simultaneously the objectives of growth, employment, productivity and the other mentioned objectives of the plan. The modifications required in our constrained income maximisation linear programming model will be simply to subtract ΔY_a, ΔK_a, ΔN_{1a}, and ΔN_{2a}, from the ΔY, ΔK, ΔN_1, and ΔN_2 (discussed above) respectively. The constrained income maximisation linear programming problem would then be to find, as before, the Y_i's which will maximise :

$$\Delta Y - \Delta Y_a = Y_1 + Y_2 + Y_3 + Y_4$$

Under the restriction :

$$a_1Y_1+a_2Y_2+a_3Y_3+a_4Y_4 \leq \Delta K - \Delta K_a$$

$$b_1Y_1+b_2Y_2+b_3Y_3+b_4Y_4 \leq \Delta N_1 - \Delta N_{1a}$$

$$c_1Y_1+c_2Y_2+c_3Y_3+c_4Y_4 \leq \Delta N_2 - \Delta N_{2a}$$

$$Y_1 \geq 0,\ Y_2 \geq 0,\ Y_3 \geq 0,\ Y_4 \geq 0.$$

The modification required in our constrained investment minimisation linear programming model will again simply be to subtract ΔY_a, ΔN_{1a}, and ΔN_{2a} from the ΔY_2, ΔN_1, and ΔN_2 respectively and to add ΔK_a to ΔK to determine the minimum investment costs under the constraints that District income and employment levels must not fall below certain prescribed levels.

The above modification guarantees that even though investment in sector - 4 which includes social services, education, health, construction, etc. suppose, may not defended purely from consideration of the increase in income and of the available labour and capital supplies, investment in there areas to meet the "minimum" needs of the people for such services are provided for in the plan.

It must be noted that the validity of the solution of a linear programming model depends completely upon the validity of linearity assumption. It assumes fixed input and output prices and constant returns to scale in production. Therefore, according to the basic theorem of Linear Programming in an optimal solution the number of non-zero-valued variables (both ordinary and slack) is exactly to the number of constraints. If there are constant returns to scale, and, say, there is only one constraint relating to investment fund, it will pay to expand the capacity of the production of only one sector - the sector which yields the highest income to the District per unit of capital. For maximisation of District income, it will pay to produce outputs of additional sectors only as the number of constraints (or scarce inputs) is increased.

For constrained maximisation (or minimisation) problems in which diminishing returns or increasing returns to scale are present, non-linear programming approach should be used. It may be stated that, in general with diminishing returns, the number of non-zero-valued variables tends to be greater than the number of const-taints. If there are diminishing returns to scale operating in some sectors of the economy then though

the marginal contribution towards District income of a further increment in their outputs, may be must in these sectors to begin with, after their output expand to some intermediate level, the marginal contribution towards, District income of a further increments in their outputs will fall below than that of some other sectors and then it will pay to devote some of the scarce resources to the production of the output of the other sectors. For the similar reasons, increasing returns to scale tend to call for greater concentration in a few sectors than does linear programming.

The problem of finding optimum allocation of resources is always closely related to the problem of assigning appropriate imputed prices to the bottleneck inputs. To find the solution to the price imputation problem, one has to find the solution to the dual of the original or primal linear programming problem.[9] The solution to the dual problem would inform us that if we want an optimum allocation of bottleneck inputs, the inputs should be valued interms of their marginal contribution to income (and outputs of only those sectors be produced for which the opportunity costs are zero). Once the prices are inputed to different bottleneck inputs, if should be possible to check, for

example, whether the prices imputed to labour and capital (equal to their respective marginal productivities) seem reasonable in view of the prevailing actual wage rates and the rates of return on investments. If the difference between the imputed prices and the actual ones is much more than what could reasonably be expected, there are reasons to respect that either there is something wrong in the construction of the model or that the estimates of parameters used are not correct ones, or perhaps both, and therefore, attempts should be made to improve the results.

The Linear Programming models, which we developed, there are no demand equations. The total supply of Consumers' goods and the supply of each group of consumers' goods is determined solely from the supply conditions. The increase in the total demand for consumer's goods and the increase in demand for each group of consumer's goods need to be determined by estimating the consumption elasticities. It should then be possible to incorporate demand equations explicitly in to the planning model as additional equations. However, inorder to check demand-supply balance of consumer's goods, although such considerations are important while formulating the economic plan for

the country as a whole, one need not worry to that extent about the demand equation while formulating the planning model for a district when there is no restriction on inter-districts and inter-state trade of consumer's goods.

In the above model, the problems of inter-industry flow of goods and services are more or less ignored. It is due to the reason that, for a district, the demand for and supply of each intermediate product need not be equal when there is no restriction on inter-district and inter-state trade. Only those inputs which are not likely to be imported from outside the District, demand and supply within the district must be equal ; and therefore, appropriate constraints must be incorporated into the model as additional equations for such inputs.

However, the successful of this planning model depends upon the efficiency of the executors. If there is to be a consistent, feasible economic plan serving also as a safeguard against political pressures, plans can not be formulated on the basis of reliance on the intution of the chosen 'wise' men. The techniques required are sophisticated and their understanding requires training in economics, mathematics and statistics.

The 'planning from below' approach as we suggested is also given much importance by the central government. But due to the inherent problems comprised with the implementation of the programme, government have achieved little success. In Orissa still now 'grass-root' level planning is not followed in actual sense. There has been some but not much, decentralisation of plan formulation to the district and block levels but hardly any effective popular participation in the process, while the involvement of the people in plan implementation, through the community projects and Panchayati Raj, has been patchy and generally disappointing in its results. Even knowledge of the existence of a plan is not very widespread. The reasons for the poor response to a very considerable amount of official effort are to be found partly in administrative difficulties, partly in the overwhelming apathy and ignorance which is the predominant characteristic of the district, and partly in the adoption of approaches insufficiently informed by sociological analysis and even, in some cases by plain common sense.

To overcome these problems, a new approach to rural development in the District is necessary. Its then is to help the village become relatively a self-relient and self-governing agro-industrial unit which

would be responsible for providing a specified targeted level of food and cash-crops, a given proportion of which would be delivered to feed the urban population and the non-agricultural work force. These villages would be entrusted with building their own housing, and providing their own education, health and other community services. They would include few small scale industries and largely cottage industries, although all assets, including land & factories would have to be commonly owned in order to give its people a genuine sense of involvement. In this kind of socio-economic environment, the Central and State Government would have to provide adequate infrastructural base for the development purpose. Cement, Iron, Steel, Fertilisers and other needed goods should be provided adequately. The most important function of the state government, apart from providing the required key commodities and services, would be the rapid training and dissemination of technical personnel to work in these agricultural communes and with the community.

This approach, however, presupposes that changes necessary in the existing political, economic and social structures and institutions. Israel has also successfully used a similar system (Kibutzs) under a democratic set up

and we feel that it will be worthwhile attempting an approach on these lines in backward economies like that of India.

It is considered that development of agriculture holds the key to development in Mayurbhanj District though for securing rapid economic advance industry is assigned a significant role. In agriculture maximum increase in production physically possible has to be secured. In this respect, the analysis of chapter - 2 brings out the significant role of irrigation, high yielding varieties of seeds, fertilisers and changing of cropping to bring out a revolutionary change in the productivity trend. The District plans backed up by block-level, village level sub-plans will generate interest in planning at local level and reduce the implementation problems. The total plan size will be realistic in relation to the resources available with the districts and the state then can realistically assess the development pattern and the growth rate feasible with the available resources. The state may then have to adopt politically unacceptable but economically desirable policies to achieve certain minimum standards for the population in general and backward scheduled caste and scheduled tribe population in particular like that of Mayurbhanj District.

REFERENCES :

1. See chapter - 2 for more detail data.

2. Thakur, S.Y., Indian Economic Development Retrospect and Prospect, Sterling Publishers Pvt. Ltd., New Delhi, 1982.

3. Hooja, R., District Planning - Concept, Selting and State Level Applications, Alekh Publishers, Jaipur, 1986.

4. Chansarkar, B.A., Modols for Planning in India, Himalayan Pablishing House, Bombay, 1983.

5. Timbergen, 'Central Planning', Yale University Press, London, 1964.

6. Dorfman - Samuelson, P.A., and Solow, R.M., Lin ier Programming and Economic Analysis, Mc Grand Mc-Grand Hill Book Company, New York, 1958,

7. Due to immobility of labour, specifically unskilled labour, availability of labour in our approach is assumed as a constraint.

8. Mohalnobis, P.C.

   "The Approach of Operational Research to Planning in India" - Sankhya, XVI, 1955.

9. Baumol, W.J., Economic Theory and Operational Analysis, second edition, Prentice - Hall, Inc, 1965.

AN OUTLINE OF PLANNING FOR THE DEVELOPMENT OF MAYURBHANJ DISTRICT

In the last chapters we have discussed the inherent problems of development in the Mayurbhanj district. In this section we have made an attempt to provide an outline of planning for the development of the district by taking in to consideration all the factors of development. A brief outline for agricultural development, industrial betterment and sound infrastructure has been made here. For overall development of these sectors the following points are to be considered.

AGRICULTURAL DEVELOPMENT :

For the purpose of agricultural productivity and development the following things may be considered.

(i) Irrigation facilities are to be increased at least to 30 to 40% during the coming decade. High priority may be given to complete the work of on-farm development to increase the productivity of irrigation water.

ii) Along with irrigation much emphasis may be given to provide HYV seeds of rice to the people in the time of their need.

iii) Adequate fertiliser may be provided by the government authorities and at the same time more

emphasis should be given for increasing consumption of chemical fertilisers.

iv) Research may be conducted more vigoursely to find out seeds which are suitable for the existing rainfed conditions of the district.

v) Well-organised credit institutions should be framed out and it is the duty of the government authorities to provide easy credit to the needy poor farmers in the time of their scarcity.

vi) To increase agricultural production the existing cropping pattern may be changed. Adequate and suitable cropping pattern may be chalked out by qualified crop-planners and efficient officers.

vii) Apart from all these, adequate steps may be taken to make the village people understand the real problems of agricultural development and the methods by which this can be everted.

Hence, we can say that there is every scope for agricultural development in the district. If the above mentioned factors are to be considered and adequate steps are to be taken by the government authorities during

planning, then it is sure that agricultural development of the district is well possible.

INDUSTRIAL DEVELOPMENT :

We found that Mayurbhanj district is comprised with mineral resources, forest resources, and also beset with sound industrial base. So, for the purpose of industrial development of the district, the following points may be important.

i) Top priority may be given for resource development plan in the district.

ii) Much emphasis should be given to co-ordinate agriculture with industrial development,

iii) Communication facilities may be increased in Karanjia and Baripada Sub-divisions.

iv) Cottage and handicrafts may be given top priority, instead of medium and large scale industries.

v) To increase efficiency and productivity, the existing plants should be modernised and training facilities are to be provided frequently.

vi) The Lac and Tassar industries are to be rehabilitated and steps may be taken to organise Lac and Tassar based industries in Baripada and Karanjia Sub-divisions.

vii) To generate employment to a greater extent in the district, labour-intensive industries like bidi-making, leaf-plate industries, furniture-making, etc. industries should be given much priority.

viii)Agro-industries and agro-based industries accompanied with forest-based industries are very important for the development of the district. But this is neglected so far. So due steps should be taken in this regard for the development of the district.

ix) At least one paper mill is suggested for this district because it has sufficient raw materials for paper industry.

x) Two wood-seasoning plants are to be suggested for the district, i.e., one at Kaptipada and another at Jashipur.

xi) One Dal mill is suggested (i.e.at Rairangpur) to utilise the raw pulses of the district.

For the purpose of industrial development the government may frame policies and programmes taking in to consideration the availability of raw materials and skills in the district. Instead of imposing several programmes upon them, the government may make an attempt to initiate the programme from the pulses of the people of the district.

INFRASTRACTURAL DEVELOPMENT :

As we found that the infrastructural base of the district is not very sound in the district. But without infrastructural development, any plan for development will be meaningless. Therefore, while framing plans for development due stress may be given for infrastructural development. In this context the following counts are very important for the district.

i) Emphasis should be given to increase irrigation potentialities in the district.

ii) Steps should be taken to exploit the existing irrigation capabilities to its fullest possible extent.

iii) Steps may be taken to exploit the existing water resources of the district.

iv) Adequate power may be supplied by the State Electricity Board to the industrial units and irrigation points.

v) Communication facilities are to be improved. The existing railway service is not adequate. It may be extended.

vi) The villages which are not connected by roads may be provided road facilities within a very short period.

vii) Steps may be taken to increase forest road facilities to exploit forest resources.

For the above purpose, planning may be chalked out from below and then adequate facilities are to be provided by the government. When agricultural productivity will be increased, and the district will industrialised having sound infrastructure, then it is sure that the pace of development of the district will be accelerated.

CONCLUSION

Our analysis of the effects of planning in the past on Mayurbhanj district economy and development are vividly imprinted in real life. While it is being planned that the plan is making steady progress towards achieving and making better living standards available to the poorer as well as weaker sections of the community, our study reveals that more than 75% of the total population are below the poverty line which is against the state average.of 64.7%. Mayurbhanj district is on the top (besides Koraput district) on this matter over all the districts of the State. Its per capita income at current prices was ₨. 746.70 as against the State's per capita income of ₨. 1,146.70, being the lowest among the districts of the state excepting Koraput. This reveals that any planning on the basis of the formula adopted for other districts of the state as is being done so far would not be able to bring the district at par with other districts of the State ; but the gap is widened further.

The first and second chapter of the concerned study devote entirely on the analysis of the nature, problems and importance of local-level need based planning and also give a general historical background of the socio-economic conditions of the people of the district. In

the course of our analysis the following facts are emerged :

i) Inspite of the investment during the past 38 years of planning, there has been little material improvement in the living conditions of the bulk of the people of the district, as 75% of the total population are still below the poverty line.

ii) Another factor which has never received any special consideration at the hands of state as well as National of a socially backward population of the district who economically are also at the bottom. According to the figures available the scheduled caste and scheduled tribe population of the district is 65.29% which is the highest in the state.

iii) The district is an underdeveloped one having the development co-efficient 1-37 (which we calculated) and this region is far away from the modern civilization and surroundings.

iv) The district also lags behind in all of the respects including education, health services, communication, etc.

v) The district economy is an agrarian economy and the people are very poor.

The third chapter deals with agricultural development of the study area, i.e., Mayurbhanj district. We have studied the problems of agriculture in the district and to find out solutions for development we carried out decomposition analysis of agricultural production of the district as well as the State taking 1971-72 as the base year and 1981-82 as the current area. The conclusions which follows from our analysis are as follows :

i) Agriculture is the main-stay of the people of Mayurbhanj district providing means of livelihood to more than 85% of its total population.

ii) Heavy concentration of the working force on agriculture (85%) as against 75% of state.

iii) In this district 67% of the district income is obtained from agriculture as against state's 54%. This depicts the vulnerability of the economy of the district for its great dependance on agriculture which is subjected to great uncertainties of weather conditions.

iv) The production trend reveals the truth that the agricultural productivity of the district is entirely dependant on monsoon. The productivity is nearly stagnant in the district.

v) The decomposition analysis made us clear that agricultural development is possible in the district through effective crop-planning and adequate supply of irrigation facilities, fertilizers, pesticides, HYV seeds, modern technology, etc. Extensive cultivation is not possible in the district.

The fourth chapter of our study covers industrial development of the district. The following results are found in this section :

i) The district is enriched with industrial base and resources. The forest resources like, Sabai grass, bamboos, woods, Tassar and Lacs are very important. Similarly the district is also beset with mineral resources. We also found that the district has sufficient base for agro-industries and agro-based industries.

ii) There is no medium and large-scale industries in the district. Only small scale industries are running and they are concentrated at Baripada and Rairangpur.

iii) The existing industrial units are incapable of utilizing local resources like mineral, forest, agricu lture and manpower. Most of the industries are taking

raw materials from outside the district.

iv) Though the production of pulses has been increasing day by day, there is no processing industries till now.

v) Industrial development of the district lags behind due to lack of adequate capital, poor management skill and ineffective state planning measures.

The fifth chapter covers infrastructural development of the district. In this section we have analysed the existing infrastructural facilities and pointed out the insufficiency of the same to meet the challenge of development of the district. The following points are prominent from our study :

i) Irrigation facility is very low in the district, i.e., 10.2% of the total cultivated land as against the state percentage of 20.6%. And the existing irrigation capabilities are not fully exploited due to inefficient management, shortage of power and lack of adequate field channel facilities.

ii) Though there are every possibilities of water resources in the district, they are not fully exploited.

iii) The district runs with shortage of power. There is load-shading for atleast one hour a day (including industries) in the district throughout the year.

iv) There is no state-high ways in the district. Therefore, the major district roads play more important role in communication.

v) Railway service is very poor in the district, and also it does not cover the interior parts which are more important for the purpose of development.

vi) The communication is inadequate. More than 30% villages are not connected with roads. This is one of the reason of the backwardness of the district.

The overall picture which emerges from our above analysis gives us an impression that there are certain lacunas in the state and national planning policies which have made the distribution of wealth and income between the different districts of the state unequal, uneven and unjust. Therefore, we can draw conclusions from the results that the basis of district level planning in Orissa need to be modified to suit the present day economic conditions and serve as a by-way

for an upward transformation of the Mayurbhanj district in particular and that of the state of Orissa in general.

Therefore, our Sixth chapter deals with an approach to planning for development of Mayurbhanj district in particular and the state of Orissa in general. Here we have provided an alternative approach to development which is based on local needs and local resources.

Our approach is 'planning from below', i.e., instead of working from above on a state or national basis first, should be built up from below with either from district or block as a base. Much attention should be given to villages and its basis is then to help the village become a relatively self - relient and self-sufficient agro - industrial unit which would responsible for a specified targeted level of food and cash-crops, a given proportion of which would be diverted to feed the urban population and the non-agricultural labour-force. For the purpose, the following points are to be considered.

i) Further plan may be based on regional intraregional study of the economic problems and analysis of flows between different regions and sub-regions relating to commodities, labour and capital.

ii) The backward areas, sub-areas and weaker sections of the population may be identified block-wise/district-wise and development opportunities should be created at those places where people live, instead of driving people to a few growth centres thereby creating 'backwash effect' in the periphery.

iii) Efforts may be made to reconcile the sectoral and regional investment goals. The total needs of the individual regions must be correlated with sectoral plans in such a way that each regional plan fits in to the state plan. This can progressively bring about location.

iv) Projects may be chosen to develop the economy into spatial dimension, brings about a functional integration between areas, activities and markets. The projects should be such that weaker section people like scheduled castes and scheduled tribes are brought into functional relation-ship with the rest of the community and the colonial nature of the relationship between rural and urban areas are brought to an end. This can be possible if new projects are located in backward areas and the local people are given adequate opportunities to participate in the implementation of these projects.

This approach, however, pre-supposes necessary changes in the existing political, economic and social structure of economy. It also pre-supposes a change of strategy of development at state and national level and also a change in the pattern of allocation of resources among the districts/states. This approach implies a spatial arrangement of activities, industries, and projects in such a way that regions/areas or sub-areas according to their characters and potentialities are tuned to the totality of the progress of the state as well as the progress of the nation. In conclusion,we consider that development of agriculture holds the key to development though for securing rapid economic advancement industry is assigned a leading role. In agriculture maximum increase in production physically possible has to be secured. In this respect, the analysis in the third chapter brings out the significant role of crop planning, irrigation, high yielding varieties of seeds, fertilizers and intensive use of land as the factor of production. Similarly to eradicate unemployment and to generate more income the role of forest based, industries, agro and agro-based industries are very significant. The district plans backed up by block - level, village level sub-plans will generate in planning at local level and reduce the implementation problems.

The total plan size will be realistic in relation to the resources available with the districts. and the state can then realistically assess the development pattern and the growth rate feasible with the available resources. The state may then have to adopt politically an unacceptable but economically desirable policies to achieve certain minimum standards for the population.

APPENDIX

TAXONOMIC APPROACH :-

On the basis of the secondary data as available at the district level, an attempt has been made to analyse the existing pattern and level of development by means of "Taxonomic Approach", presented by Sudama Singh (Indian Journal of Regional Sciences, Vol - XVI, No.1, 1984). We have taken the following indicators of economic development out of several indicators became of simplicity and availability of data.

Indicators :

a) Per capita Income from Agriculture.

b) Net Area Irrigated as percentage of net area sown.

c) Productivity per hectre of land.

d) Cropping intensity

e) Distribution of fertiliser per 'ooo hectres of grass cropped area.

f) Industrial workers per lakhs of population.

g) Value-added by manufacture per capita.

h) Per-capita consumption of electricity.

i) Percentage of village electrified.

j) Surfaced roads per thousand square Kms. of area.

k) No. of motor vehicles per lakh of population .

l) No. of post-offices per lakh of population.

m) Percentage of workers engaged other than agriculture.

n) Auxiliary Nurses and Mid-wives per lakh of population.

o) Percentage of School-going children in the age group of 6 - 14 years.

p) Percentage of Male-literacy.

q) No. of Hospital beds per lakh of population.

r) Percentage of Female - literacy.

s) Infant mortality (per thousand births)

We have collected data from statistical Abstracts of Orissa, 1981 and Economic Survey of Orissa, 1983-84, We followed the following methodology.

Let a set of points represent regions, 1. 2..... R for a group of indicators, 1, 2, 3,....., m. These can be represented by a matrix as follows :

$$\begin{matrix} X_{11} & X_{12} & \cdots & X_{1m} \\ X_{21} & X_{22} & \cdots & X_{2m} \\ \cdots & \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots & \cdots \\ X_{R1} & X_{R2} & \cdots & X_{Rm} \end{matrix}$$

Standardise the indicator values by the following well known formula :

$$X_{ij} = \frac{X_{ij} - \bar{X}_j}{S_i} \qquad \begin{matrix} i = 1, 2, \ldots R \\ j = 1, 2, \ldots m \end{matrix}$$

$$\text{where } \bar{X} = \frac{X_{ij}}{R}, \; S_i = \sqrt{\frac{\Sigma(X_{ij} - \bar{X}_j)^2}{R}}$$

X_{ij} is the value of jth indicator for ith rwgion. The standardised values can be represented by a matrix as follows :

$$\begin{matrix} Z_{11} & Z_{12} & \ldots & Z_{1m} \\ \ldots & \ldots & \ldots & \ldots \\ \ldots & \ldots & \ldots & \ldots \\ Z_{R1} & Z_{R2} & \ldots & Z_{Rm} \end{matrix}$$

By the operation of standardised values we can from the distance matrix defined as :

$$D_{ij} = \pm \sqrt{\sum_{K=1}^{m} (Z_{ik} - Z_{jk})^2}$$

where $D_{ii} = 0$ and $D_{ij} = D_{ji}$

D_{ij} is the square root of the sum of square of difference of the elements of ith row to the corresponding elements of jth row. The distance matrix is given by :

$$\begin{array}{ccccc} 0 & D_{12} & D_{13} & \cdots & D_{1R} \\ D_{21} & 0 & D_{23} & \cdots & D_{2R} \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ D_{m1} & F_{m2} & D_{m3} & \cdots & D_{mR} \end{array}$$

In each row there will be one point with the shortest or minimum distance (C_1) at the corresponding point with row, i.e.,

$$C_i = \min_j \ (D_{ij}) \text{ and } C_i \neq 0$$

The pattern of development is obtained by the following formula :

$$C_{io} = \sqrt{\sum_{k=1}^{m} (Z_{ik} - Z_{ok})^2}$$

where C_{io} denotes pattern of development (i = 1, 2, ... R) and Z_{ok} is the highest or the best standardised value. The measure of development co-efficient (d_i) is given by

$$d_i = \frac{C_{io}}{C_o} \quad \text{where } C_o = \bar{C} - 2 S_{io}$$

$$S_{io} = \sqrt{\frac{\Sigma (C_{io} - \bar{C})^2}{R}} \qquad \text{and} \quad \bar{C} = \sum_{i=1}^{R} \frac{C_{io}}{R}$$

By following the above methodology we calculated d_i for Mayurbhanj district and found $d_i = 1.37$. This implies that the district is highly underdeveloped one. Our calculation also reveals that Sundargarh is the only developed district in the district having development co-efficient less than one (i.e., di = .72).

BIBLIOGRAPHY

B I B L I O G R A P H Y

Adiseshiah, Malcolm, S., **Seventh Plan Prospectives**, Lancer International, New Delhi, 1985.

Adiseshiah, Malcolm, S., **Some Thoughts on the Seventh Five Year Plan 1985-90**, Dialogue Publications, New Delhi, 1985.

Agarwalla, A.N. and others **Economic Planning : Principles, Techniques and Practice**, Vikash Publishing House, New Delhi, 1977.

Alagh, Y.K., **District Planning in India : some issues**, **Journal of Lal Bahadur Shastri National Academy of Administration**, Mussorie, Vol. XX, No.1, 1973.

Ali, Mansoor, **Missing Links in Indian Planning**, Light and Life Publishers, New Delhi, 1979.

Anjaria, J.J. **Essays in Planning and Growth**, Vora and Co., Bombay, 1972.

Bhagwatti, J. and Eckaus, R.S., **Development and Planning**(ed) George Allen & Unwin Ltd., London, 1972.

Bhat, N.S., **Studies in India's Economic Problems and Policy**, Anmol Publications, New Delhi.

Bhat, L.S. **Micro - level Planning**, K.B. Publishings, New Delhi, 1976.

Brahmanand, P., and Vakil, C.N., **Planning for an Expanding Economy**, Vora, Bombay, 1956.

Brahmanand, P., **Planning for a Futureless Economy**, Himalaya Publishing House, Bombay, 1978.

Bureau of Statistics and Economics, **Statistical Abstract of Orissa**, Govt. of Orissa, Bhubaneswar, 1981.

Bureau of Statistics and Economics, **Statistical Handbook of Mayurbhanj District**, Govt. of Orissa, Bhùbaneswar, 1981.

Chakravarthy, S. **A Note on the Structure of Multi-Level Planning for India**, Planning Commission. New Delhi, 1977.

Chattapadhyay, B.C. **Rural Development Planning in India**, Sultan Chand and Sons, New Delhi, 1985.

Conroy, Michael, F., **Regional Economic Diversification**, Praeger Publishers, London, 1975.

Das, R.B., and Singh, D.P., **Formulation and Execution of Block Plans : A Case Study**, Oxford & I.B.H. Pub. Co., New Delhi, 1968.

Gadgil, D.R., **District Development Planning**, Asia publishing House, Bombay, 1967.

Glasson, J., **An Introduction to Regional Planning**, Hutchinson Educational, London, 1974.

Gupta, D.B., Halan, Y.C., and Desai, P.B. (ed.). **Development Planning and Policy**, Essarys in Honour of Prof. V.K.R.V. Rao, Willy Eastern Limited, New Delhi, 1982.

Hicks, U.K., **Development From Below**, Oxford, 1961.

Hirschman, A.V., **The Strategy of Economic Development**, Yale University Press, New Haven, 1958.

Hooja, Rakesh, **District Planning : Concept, setting And State - level Applications.** Alekh Publishers, New Delhi, 1986.

Kabra, K.N., **Planning process in a District,** Indian Institute of Public Administration, New Delhi, 1977.

Kashyap, S.P., **Regional Planning in a consistence Frame : A Case Study of Gujrat,** Sardar Pater Institute of Economic and Social Research, Ahmadabad,1978.

Khan, A.Z.M. Obaidullah, **Participatory Development** - The Need for Structural Reform and People's Organisation in Local level Planning & Rural Development, United Nations Asian and Pacific Development Institute, Concept, New Delhi,1980.

Khan, M. Basheer Ahmed (ed), **Regional Planning and Economic Development,** Pointer Publishers, Jaipur,1988.

Khan, Waheeduddin and Others, **Plan for Integrated Rural Development in Paurigarwal District, Uttar Pradesh,** Institute of community Development, Hyderabad,1976.

Kindleberger, Charles, P. **Economic Development,** McGraw Hill Kogakusha Ltd., Tokyo, 1965.

Krause, **Economic Development,** Wordsworth Pub. Co., San Francis Francisco, 1961.

Kumar, B. **Planning Poverty and Economic Development,** Deep and Deep Publications, New Delhi, 1984.

Kurien, C.T., **Poverty and Development,** The Christian Literature Society, Madras, 1974.

Lakdawalla, D.T., **Planning of Social Services in India**, Yojna, 1st March, 1978.

Mahajan, O.P., **Economic Planning and Regional Development in India**, Ess Ess Publications, New Delhi,1982.

Mahajan, V.S., **Planning and Socialistic Transformation of** Indian Economy, Deep & Deep Publications, New Delhi, 1982.

Maitra, Priyatosh, **The Main Spring of Economic Development**, Croom Helm, London, 1980.

Mathur, O.P. "Planning for Districts" - **Some Problems in Developing a Conceptual Framework**, Pranjanan, Vol. 2, 1973.

Minhas, B.S., **Planning and the Poor**, Sultan & Chand, New Delhi, 1974.

Mishra, B., **Capitalism Socialism and Planning**, Oxford & IBH Publications, New Delhi, 1979.

Mishra, R.P., **Regional Planning and National Development**, Vihar Pub. House, New Delhi, 1978.

Mishra, R.P. & Sundaram, K.V., **Multi-level Planning and Integrated Rural Development in India**, 1980.

Mundle, Sudipto, **District Planning in India**, Indian Institute of Public Administration, New Delhi, 1977.

Nair, K.R.G. (ed.), **Regional Disparities in India**, Agricole Publishing Academy, New Delhi, 1986.

Nanjundappa, D.M. **Area Planning and Rural Development,** Associated Publishing House, New Delhi,1981.

Pattnaik, N and others, **An Integrated Tribal Development Plan for Keonjhar District in Orissa,** National Institute of Community Development,Hyderabad, 1976.

Planning Commission, **Guidelines for District Planning,** Govt. of India, New Delhi, 1969.

Raj, K.N., **Planning From Below with Reference to District Development and State Planning,** Economic and Political Weekly, VI, Special No. July, 1971.

Rath, S.N., **The Development of the Welfare State in Orissa,** Sultan Chand and Sons, New Delhi, 1977.

Sau, B., **Weaker Sections : Poverty and Development,** New Era Publications, Bhubaneswar, 1985.

Sarup, A., **District Planning for Integrated Development,** Academy of Administration, Mussorie, Vol. XX, No. 1, 1973.

Senapati, N., and Sahu, N. **Orissa District Gazetteers,** Mayurbhanj, Orissa Govt. Press,Cuttack, 1969.

Singh, Baldev, **Regional Planning,** Oxford & IBH, Pub. Co., New Delhi, 1981.

Singh, Ch. Charan, **India's Economic Policy - The Gandhian Blue-Print,** All India Kishan Sammelan, New Delhi, 1979.

Thappar, S.D., **Block-level Planning,** Vikash Publishing House, New Delhi,1980.

Wagle, S.S., **Technique of Planning for Accelerated Economic Growth of under Developed countries,** Vora and company, Bombay.