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CENSUS OF INDIA, 1961

VOL XII—PART IX-A

CENSUS ATLAS

OF

ORISSA

M. AHMED, I.A.S.
Superintendent of Census Operations
Orissa

CENSUS OF INDIA, 1961

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FOREWORD

FEW PEOPLE REALIZE, much less appreciate, that apart from the Survey of India and the Geological Survey, the Census of India had been perhaps the largest single producer of maps of the Indian subcontinent. Intimate collaboration between geographer and demographer began quite early in the modern era, almost two centuries before the first experiments in a permanent decennial Census were made in the 1850's. For example, the population estimates of Fort St. George, Madras, made in 1639 and 1648, and of Masulipatnam and Bombay by Dr. John Fryer around 1672-73 were supported by cartographic documents of no mean order. The first detailed modern maps, the results of Major James Rennell's stupendous Survey of 1767-74, were published in 1778-1780 and Henry Taylor Colebrooke, almost our first systematic demographer, was quick to make good use of them by making estimates of population in the East India Company's Possessions in the 1780's. Upjohn's map of Calcutta City, drawn in 1792-93, reprinted in the Census Report of Calcutta for 1951, gives an idea of the standards of cartographic excellence reached at that period. In the first decade of the nineteenth century, Francis Buchanan Hamilton improved upon Colebrooke's method in which he was undoubtedly helped by the improved maps prepared for the areas he surveyed.

It is possible that the Great Revenue Survey, begun in the middle of the last century, offered the best guarantee of the success of decennial population censuses proposed shortly before the Mutiny of 1857. In the experimental censuses organized between 1865 and 1872 the Survey of India, the Provincial Surveys and Census of India struck an informal but stable partnership which has been fascinatingly described by R. H. Phillimore in his monumental four-volume work on the Historical Records of the Survey of India. This partnership continues to this day. On the eve of each census, the Census of India proceeds by making use of (a) the cadastral surveys prepared by the Provincial (now State) Surveys and (b) the topographical surveys of the Survey of India. In the course of its decennial operation, the Census of India begins by revising and bringing up-to-date the minute jurisdictional changes made during the decade. Next, and equally important, it revises the lists of inhabited and uninhabited villages and of towns and cities. These are placed at the disposal of the Survey of India. Thirdly, at each decade the Census of India itself produces maps of its own which serve to strengthen the study of geography at official and academic levels. These are both numerous and of great range and variety. What is more, they are often unsurpassed for their wealth of authentic regional detail. For proof, if proof were needed, one has only to turn to the geographical maps published in the 1872 Census Reports of North-West Provinces, Cochin, Bengal and the very excellent volume of maps of different Collectorates of the Bombay Presidency, published as Part IV of the 1872 Census Report of Bombay, or the fine taluk maps of Mysore State published in the Census Report of 1891. The high watermark of a skilful fusion of topographical and thematic maps was reached in maps published in the encyclopaedic Linguistic Survey of India and the State Census Reports of 1931 and the special All India Ethnographic Appendix published in 1933. In fact, the particular genius of the Census of India seems to lie as much in the high quality of its themato-topographic maps as in the pure thematic maps so essential for Census analysis and presentation.

The restricted programme in 1941 on account of World War II temporarily restrained the cartographic activities of the Census of India, although several excellent contributions were made. One of the major contributions of the 1951 Census was the excellence of detail achieved in the great bulk of taluk/tehsil maps published in the District Handbooks.

The Census of India has been a discontinuous affair up to 1961. The Census Commissioner for India in 1941 compared it to the mythical phoenix. The Census starts every time with a very limited assignment, but ends up, thanks to the vistas that open up with the progress of the work and the hunger they stimulate, by becoming the most fruitful single source of information about the country.

The seeds of the 1961 Census Atlas Project were unobtrusively shown in para 42 of the Registrar General's first 1961 Census Circular of March 1959 to State Census Superintendents as follows :

> *It will be very useful to have a map for every village and ward of a town showing the broad lay-out of the village and the house numbers shown therein. The map need not be drawn to scale but a map large enough to show the house numbers would be sufficient. A map of this kind, if prepared, will also help the maintenance of house numbers.*

This suggestion was wholly accepted in the First Conference of State Census Superintendents held in September 1959, which authorized State Census Officers "to appoint one or two good draftsmen for the preparation of experimental maps, charts, graphs and histograms for their own use". Note was taken of 'the serious but avoidable blemish' left in some census years on account of 'the lack of good maps and charts'.

That the seeds did not fall on stony ground was evident from the enthusiasm with which the States welcomed the Registrar General's next circular laying down the details to be incorporated in the village maps. It caught their imagination so well that many State Census Superintendents added of their own accord to the details stipulated by the Registrar General's Office. A zest was thus created which whetted the appetite it fed.

By August 1960, several State Census Superintendents had set up their own Map Sections. The experience and confidence gained in the process encouraged a general desire at the Second Census Conference in August 1960 to go in for a much enlarged programme of map production than had been originally proposed. It was no longer a question of selling an idea but of feeding the organization with a project that would be worth working for.

The satisfactory progress of the sorting and tabulation programme placed at the disposal of my colleagues an exciting world of possibilities. On the eve of the Third Census Conference in February 1962, the map project had passed its tentative stage. All Census Superintendents were now thinking of producing enough maps to fill a sizable atlas.

The Registrar General's circular of September 1961 had already anticipated the general desire by proposing that Part IX of the State Census Series should take the form of an atlas. This was followed up by two circulars in November 1961 giving details of the contents of the projected Atlases and the method by which each map was to be produced. This was in turn followed up some time later by a third circular in September 1962 suggesting the levels to which analysis of data should be carried out for the purpose of each map.

Inquiries had, in the meantime, been made of the Survey of India and the National Atlas Organization on the extent to which either would be prepared to share the task with the Census of India. The Director of the National Atlas Organization was good enough to undertake the preparation on 1 : 1M scale of population maps for 1961. Similar maps containing the 1951 data had, meanwhile, been completed which the Government published at the Registrar General's request.

A chance meeting in the middle of July 1959 with Dr. Joseph E. Schwartzberg of the University of Wisconsin proved of great profit to the 1961 project. I am under a personal debt to Dr. Schwartzberg for his very thoughtful and detailed memorandum which he was good enough to send me in September 1959 on the kind of maps that should be incorporated in census volumes. He was even more helpful when I gave him the outline of a full Atlas Project. The Project owes much to the readiness with which he placed himself at my disposal to the detriment, no doubt, of his own work, in November 1962, when he and I, with Miss Sen Gupta joining in towards the end, went over every item and worked out many improvements. The contents of the State Atlases will explain the scope and purpose of the Project and its claims to uniqueness.

The Government of India had, meanwhile, accepted the Census Atlas proposals and sanctioned the staff and funds.

Dr. Miss P. Sen Gupta, Map Officer to the Registrar General, joined at the end of November 1962 and immediately applied herself to several tasks at once. She instilled purpose and dedication into her rapidly expanding staff and in the course of a strenuous three-month seminar trained and equipped the staff from the State Census offices. She followed it up with extensive tours to all State Census offices and helped them to achieve uniformity of quality and presentation.

The 1961 Census Atlas Project is now mainly in the hands of a young, gifted and trained staff in every State. Their greatest contribution may yet prove to be the District and Tehsil maps which have been brought up-to-date with the latest administrative and demographic detail. No less significant will be the village and town maps which have opened up new vistas for the study of comparative rural and urban geography.

I would like to close this short account by quoting an extract from my colleague, Shri M. Ahmed of Orissa, which, if anything, is an understatement of what many of my colleagues cheerfully accepted in order to accomplish a task that was no part of their original assignment and yet on which they poured the ardour of pioneers.

> *Things however did not wait. Man-power was drawn just from the street,.....for not a single qualified draftsman was available on deputation from the State Government in spite of requisitions and personal contact. Among the equipment to start with were some locally purchased drawing and survey instruments and a few cheap items of furniture, accommodated in the temporary barrack with asbestos-sheeted roof, lighted with temporary electric fittings. There was, however, a sufficiency of light points, not only from the ceiling but also under glasstopped tables meant for tracing work. With these lights burning over the head and under the tables during working hours at daytime, and with inadequate provision of fans, the hot roof of asbestos sheets made matters pretty unbearable particularly during summer months. But the atmosphere was already surcharged with enthusiasm and there was the will and earnestness to produce something new. The young recruits magnificently responded to an appeal to earn distinction for themselves by building up things which did not exist.*

New Delhi
12th June, 1964

ASOK MITRA
Registrar General, India

PREFACE

The preparation of this Atlas was taken up with a view to provide an analytical portrait of modern Orissa, even though the undertaking was formidable. It is mainly an account of demographic facts against geographic background dealing with physical characteristics, population structures and economic, industrial, agricultural and many similar aspects that constitute the features of strength or of deficiency of the land and its people. The geographical dimension of the subjects treated furnishes a new approach, promising to be of great avail to those who are engaged in planning for development of the resources of the State, and to industrialists, scholars and students.

The unit of study provided in this Atlas is the State of Orissa with usual break-up into administrative divisions, viz., districts, sometimes going down to the level of police stations. For an enquirer desiring to know what are the detailed patterns of land utilization, irrigation, transport, communication, generation and consumption of electricity or where are the forests of commercial importance, resources of raw materials, location of working mines or how are the people shaping demographically, biologically and economically or what are the advancements in the fields of urbanization, industry, trade and commerce, health and education, such questions can be readily answered with reference to the related maps contained in this Atlas. The visual method of conveying the essential facts about a country is generally more effective than the descriptive one. With such effectiveness, the Atlas assembles a vast array of facts, many of them not hitherto collected, collated or published. These facts are presented in a manner so that their inter-relationships can be easily compared and studied, and the study is further facilitated by reference to the Explanatory Note provided for each map, containing factual analysis of the subject-matter of the map. The series of information embodied in the maps and the notes was gathered with unfailing patience and tenacious determination from the very original sources. More than half the number of maps are based on data available from the Census of India, but in respect of the rest, even the topmost sources were found to have no information on the subject except in the form of primary reports, uncompiled, unscrutinized and unused. A small research team was deputed from this organization to seek co-operation and assistance of the departments concerned and there to build up the required set of facts and figures, which ultimately became the foundation of all such maps.

An Atlas of this type was long overdue and its need was particularly felt since the introduction of the series of Five-Year Development Plans on nation-wide basis. But the formidable character of the undertaking gave little inducement for such a venture by any agency. Ultimately the Census of India decided to take the lead, as in many other untrodden fields of scholastic and cultural contribution, and the Registrar General broached the subject in the all-India Census Conference in 1959. The onerous task he faced was not only to create resources and provide technical guidance for the success of the project, but more effectively to dispel the misgivings and instil confidence in those who were intended to shoulder the burden at the State level, but were found obsessed with a feeling that the responsibility was alien to their talents.

The geographic presentation of all the various facets of the country required some new thinking on Cartography. Attention was devoted to the development of techniques designed to increase the ability of the maps to vividly represent specific ideas. Through choice of screening, hatching and colours, and with the help of symbols, graphs and bars and lastly with the consistency of scales, the Atlas ensures both rapid and detailed comparisons. This could not have been achieved but for the effective technical guidance and practical assistance given by the Registrar General, who personally chalked out the over-all plan and drew up the initial instructions by about November, 1961. Thereafter, the Map Wing of his office headed by Dr. (Miss) P. Sen Gupta, M.A., Ph.D.(London) undertook the preparation and issue of further comprehensive instructions on the procedure of drawing each single map contained

in this volume. There was also a system of practical co-ordination between the Central Map Organization and its counter-part in the State, which provided for scrutiny of the drawings and their rectification wherever necessary.

The maps in the Atlas may be broadly divided into certain sections. As the Table of Contents shows, the maps have been arranged under related subjects with a particular sequence. The main groups are orientation, physical conditions, demographic structures and trends, agricultural, industrial and other economic features and socio-cultural aspects. The maps are drawn in a scale so as to cover the maximum printing space, at the rate of one map per page. The maximum utility of space ensured in this manner has resulted in the scale of the map being apparently arbitrary, viz., 1" = 56 miles. There are a few double-paged maps of the State which similarly cover the maximum printing space available being drawn in a suitable though unconventional scale of 1" = 36 miles approximately. Sometimes twin or triplet maps have been given in smaller size in one single page for the convenience of quick comparison.

The title-panels give indication of the subjects mapped, while the legends are designed to explain the symbols and shadings adopted. The context of the maps are elucidated by reference to the explanatory notes which immediately follow or precede. If more elaborate study is deemed necessary, this may be possible by perusal of the basic literature, if any, as mentioned under "Source" given below the explanatory notes. Wherever such sources are the publications of the Census of India, no mention is made as this is very evident from the nature of particulars contained in the explanatory notes.

In making of the maps, a good many administrative officers have generously given of their time and learning, but the features and particulars that are mapped here go far beyond the level of individual contributions, valuable as these have been. Much of the materials is derived from the publications of the Census of India, 1961, while many other fact-finding Surveys and official Establishments have liberally provided data required for the related maps. Notable among such bodies are the Geological Survey of India, the India Meteorological Department, the Railway Department, the Surveyor General, India, the National Council of Applied Economic Research, the Board of Electricity, Orissa, and a large number of Departmental Establishments of the State Government relating to Engineering, Mines, Factories, Forests, Soil Conservation, Health, Public Instruction, Industry, Agriculture and Police. The co-operation and assistance received from these sources are gratefully acknowledged and are indicated in a separate list specifically naming the Departments or Organizations which kindly provided the required data or otherwise rendered valuable help in the preparation of the maps.

Finally, I wish to express my unstinted appreciation of the sincere and hard work done by the staff of the Map Section of my office. The names of all officers and members of the staff who devoted themselves to the fulfilment of this unique and arduous task are indicated in a panel given separately, out of whom at least two, namely, Shri L. N. Misra and Shri B. B. Mohanty deserve special mention for having borne the brunt of the responsibility. I am also grateful to the Honorary Map Officer, Shri Ahmed A. Shahed for having taken scholarly interest and considerable trouble in scrutinizing the drawings and preparing useful and illuminating Explanatory Notes to the maps contained in this volume. I am also thankful to Shri N. P. Sathia, Retired Deputy Superintendent, Orissa Government Press, for assisting me in course of printing of the book.

Cuttack
December 14, 1964

M. AHMED

PLANNING AND EXECUTION

Planning

A. Mitra, I.C.S., Registrar General, India

Editor

M. Ahmed, I.A.S., Superintendent of Census Operations, Orissa

Cartographical Direction

Dr. (Miss) P. Sen Gupta, M.A., Ph.D. (London), Map Officer, Office of the Registrar General, India

Honorary State Map Officer

Ahmed A. Shahed, M.A. (Geog.)

Collection of Data

(a) Non-Census : Shiva Kinkar Das, Tabulation Officer

(b) Census : Sachindra Kumar Swain, M.Sc. (Statistics), Statistical Assistant

Scrutiny of Data

Jameswar Pal, Statistical Assistant

General Supervision

Lokanath Misra, Statistical Assistant

Cartographer

Bibhuti Bhusan Mohanty, Senior Draftsman

Draftsmen

Mirza Harun Baig
Lambodar Patnaik
Ananta Charan Panda
E. Gurunath Rao
Rangadhar Mohanti
Jogendra Nath Mohanti

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1.	INDIA—Location of Orissa	(i) Map of India—Political, School Atlas, First Edition by the Surveyor General of India (ii) Census of India : Paper No. 1 of 1962—Final Population Totals by the Registrar General, India
2.	Administrative Divisions, 1961	(i) State Map of Orissa 1 : 1,000,000 ; First Edition, 1958 published by the Surveyor General, India (ii) Orissa Administrative Atlas, Census of India, 1961, Vol. XII—Part IX-B, Map No. 2 (iii) Census of India, 1961, Vol. XII, Orissa Part II-A, (General Population Tables) : Table A-1
3.	Changes in Administrative Boundaries, 1936—1961 ..	(i) Report of the Administration Enquiry Committee, 1958, (Govt. of Orissa) (ii) Census Report of Orissa, Part I, 1951
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5.	Geology	(i) Director General, Geological Survey of India, Calcutta (ii) Geology of India by D. N. Wadia (iii) Economic Geology of Orissa by Geological Survey of India, 1949
6.	Minerals	(i) Director of Mines, Orissa (ii) Mining Section of District Collectors' offices (iii) Techno-Economic Survey of Orissa, N.C.A.E.R.
7.	Normal Monthly and Annual Rainfall	India Meteorological Department Memoirs—Volume XXXI—Part III
8.	Rainfall Reliability, 1901—50	Map Officer, Office of the Registrar General of India, New Delhi
9.	Rainfall Regions by Extent of Precipitation and Reliability..	Map Officer, Office of the Registrar General of India, New Delhi
10.	Soils	(i) Director of Soil Conservation, Orissa (ii) Land Utilization in Orissa by Dr. B. N. Sahu
11.	Forests	(i) Report of the Forest Enquiry Committee, Orissa, 1959 (ii) Forests Utilization Officer, Orissa
24.	Birth-Rate, 1960	Vital Statistics of India for 1960 published by the Registrar General, India
25.	Death-Rate, 1960	

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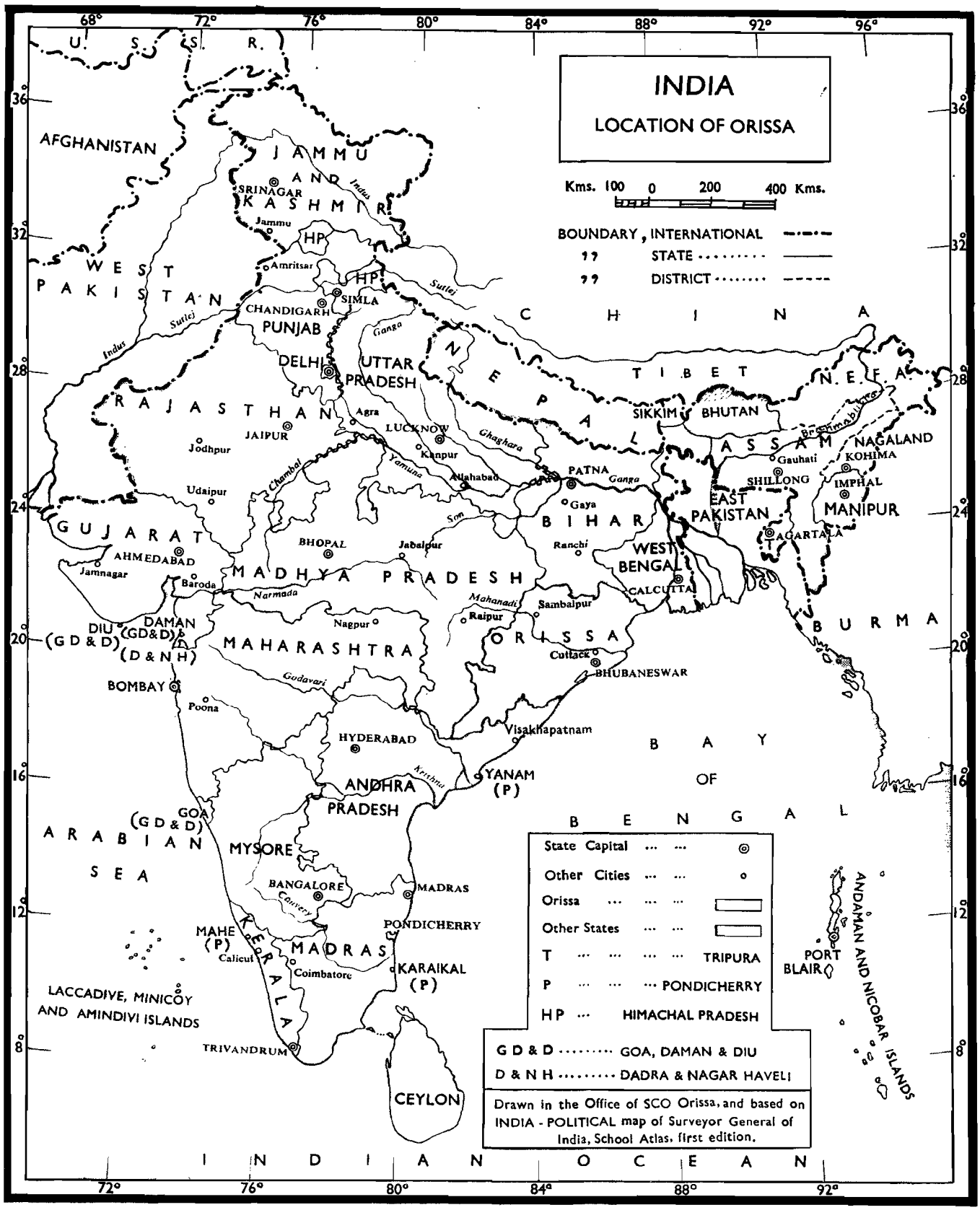
I. ORIENTATION


INDIA
LOCATION OF ORISSA
Kms. 100 0 200 400 Kms.
BOUNDARY, INTERNATIONAL
" STATE
" DISTRICT
U. S. S. R.
AFGHANISTAN
WEST PAKISTAN
JAMMU AND KASHMIR
SRINAGAR
Jammu
Amritsar
HP
CHANDIGARH
SIMLA
PUNJAB
DELHI
UTTAR PRADESH
RAJASTHAN
JAIPUR
Jodhpur
Udaipur
Agra
LUCKNOW
Kanpur
Allahabad
PATNA
Gaya
BIHAR
GUJARAT
AHMEDABAD
Jamnagar
Baroda
BHOPAL
Jabalpur
Ranchi
MADHYA PRADESH
Narmada
Nagpur
Raipur
Sambalpur
DIU (GD&D)
DAMAN (GD&D)
(D&NH)
MAHARASHTRA
BOMBAY
Poona
Godavari
ORISSA
Cuttack
BHUBANESWAR
HYDERABAD
Visakhapatnam
YANAM (P)
ANDHRA PRADESH
Krishna
GOA (GD&D)
ARABIAN SEA
MYSORE
BANGALORE
Cauvery
MADRAS
PONDICHERRY
KARAIKAL (P)
MAHE (P)
Calicut
Coimbatore
KERALA
TRIVANDRUM
LACCADIVE, MINICOY AND AMINDIVI ISLANDS
CEYLON
INDIAN OCEAN
BAY OF BENGAL
CHINA
TIBET
NEPAL
SIKKIM
BHUTAN
N.E.F.A.
ASSAM
Gauhati
SHILLONG
NAGALAND
KOHIMA
IMPHAL
MANIPUR
EAST PAKISTAN
AGARTALA
WEST BENGAL
CALCUTTA
BURMA
PORT BLAIR
ANDAMAN AND NICOBAR ISLANDS
Indus
Sutlej
Ganga
Ghaghara
Yamuna
Chambal
Son
Mahanadi
Brahmaputra
State Capital
Other Cities
Orissa
Other States
T TRIPURA
P PONDICHERRY
HP HIMACHAL PRADESH
G D & D GOA, DAMAN & DIU
D & N H DADRA & NAGAR HAVELI
Drawn in the Office of SCO Orissa, and based on INDIA - POLITICAL map of Surveyor General of India, School Atlas, first edition.

MAP No. 1

INDIA—LOCATION OF ORISSA

The Map of India shows the boundaries of all the States in India with their capital cities and a few important towns. It is primarily intended to specify the location of Orissa within the Union of India, by giving it a tint quite distinct from all other States.

Situated within longitudes 60°7′ 35″ and 97°4′ 47″ East and latitudes 8°4′ 28″ and 37°17′ 53″ North, India extends over an area of 1,228,402 square miles and contained a population of 439,234,771 in the Census of 1961. This accounts for nearly 14·6 per cent of the total world population and 2·4 per cent of the total land area of the world. It is the seventh largest country in the world, being approximately fourteen times as large as the United Kingdom, nine times the size of Japan and a sixth of Russia. It has a land frontier 9,425 miles long and a coast-line extending over 3,535 miles. The length and breadth of the mainland of India from the westernmost tip of Gujarat to the easternmost tip of Assam is 1,875 miles and from the northernmost tip of Kashmir to Cape Comorin is 2,000 miles.

As a single country, India holds the second place in population in the world, the People's Republic of China coming first with an estimated population of 582·5 millions in 1953. The population of India as recorded in the Census of 1961 is 439,234,771. Within the last sixty years (1901—61) India has increased more than 84 per cent in population. A high rate of growth was noticed particularly in the decade ending 1961, which registered an increase of 21·5 per cent.

The total population comprises 226,293,201 males and 212,941,570 females, giving a ratio of 941 females per 1,000 males. There are 2,700 towns, 567,351 inhabited villages and 54,868 uninhabited villages. The density of population is 358 persons per square mile. The percentage of literacy is 23·98. Among three numerically important religions are Hinduism (366·5 millions), Islam (46·9 millions) and Christianity (10·7 millions). Scheduled Castes exceed 64·5 millions and Scheduled Tribes are nearly 30 millions.

The following statement gives the population, area, etc., of the States and Union Territories of India:

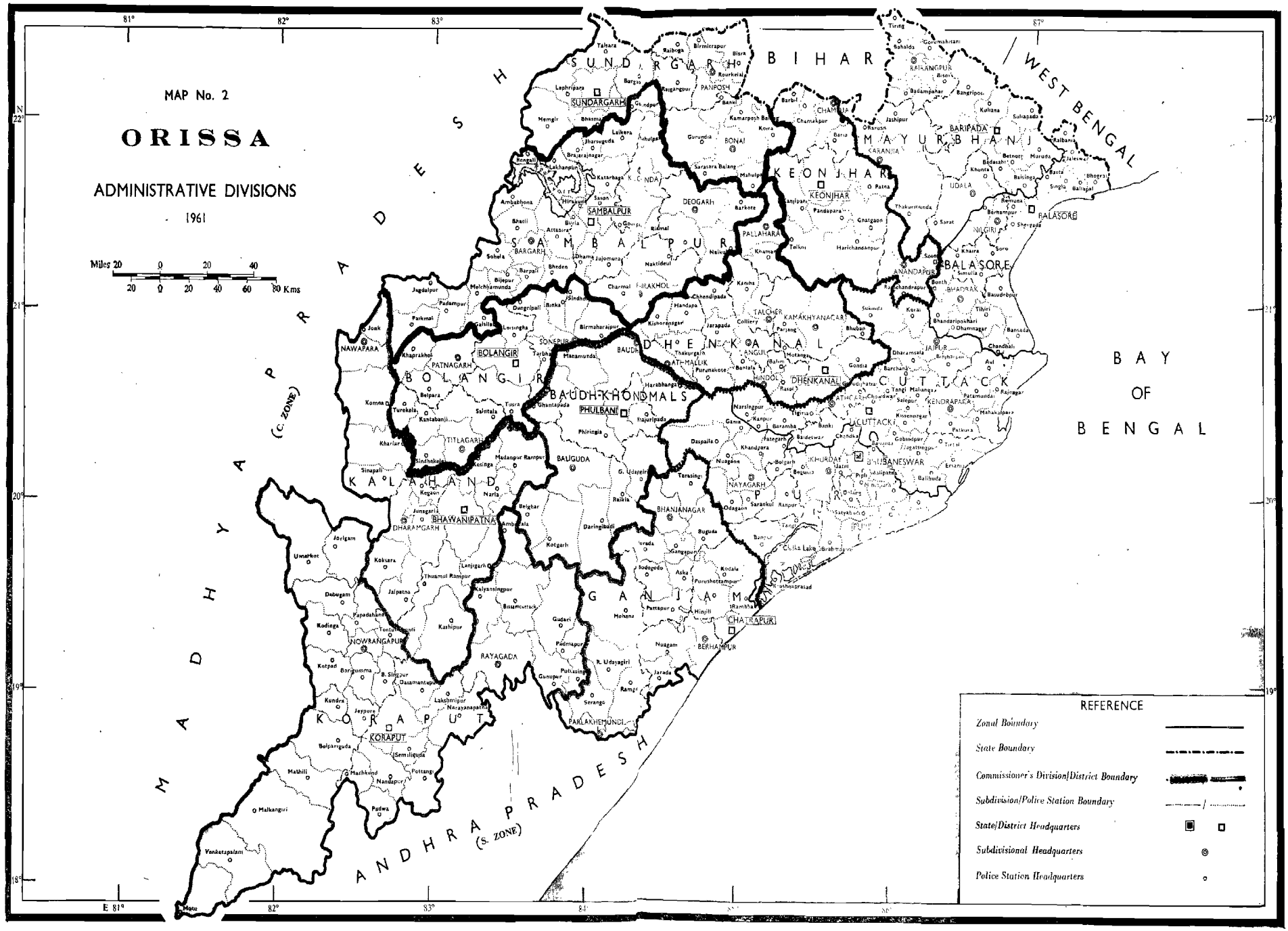
State or Union Territory	Area in sq. miles	Population	Population per sq. mile	Percentage of India's population	Percentage of India's area
INDIA	1,228,402	439,234,771	358	100	100
Uttar Pradesh	113,879	73,746,401	648	16·79	9·27
Bihar	66,936	46,455,610	694	10·58	5·45
Maharashtra	118,280	39,553,718	334	9·00	9·63
Andhra Pradesh	106,053	35,983,447	339	8·19	8·63
West Bengal	34,194	34,926,279	1,021	7·95	2·78
Madras	50,154	33,686,953	672	7·67	4·08
Madhya Pradesh	169,042	32,372,408	192	7·37	13·76
Mysore	73,846	23,586,772	319	5·37	6·01
Gujarat	71,036	20,633,350	290	4·70	5·78
Punjab	47,305	20,306,812	429	4·62	3·85
Rajasthan	131,890	20,155,602	153	4·59	10·74
Orissa	60,172	17,548,846	292	4·00	4·90
Kerala	15,003	16,903,715	1,127	3·85	1·22
Assam	47,257	11,872,772	251	2·70	3·85
Jammu & Kashmir	53,665	3,560,976	66	0·81	4·37

State or Union Territory	Area in sq. miles	Population	Population per sq. mile	Percentage of India's population	Percentage of India's area
UNION TERRITORIES AND OTHER AREAS					
Delhi	573	2,658,612	4,640	0·61	0·05
Himachal Pradesh	10,702	1,351,144	126	0·31	0·87
Tripura	4,116	1,142,005	277	0·26	0·34
Manipur	8,628	780,037	90	0·18	0·70
Nagaland	6,366	369,200	58	0·08	0·52
Pondicherry	181	369,079	2,040	0·08	0·01
North East Frontier Agency	31,438	336,558	11	0·08	2·56
Sikkim	2,818	162,189	58	0·04	0·23
Andaman and Nicobar Islands	3,215	63,548	20	0·01	0·26
Dadra and Nagar Haveli	191	57,963	303	0·01	0·02
Laccadive, Minicoy and Amindivi Islands	11	24,108	2,241	0·01	Negligible
Goa, Daman and Diu	1,431	626,667	438	0·14	0·12

Location of Orissa

The State of Orissa is located in the east coast of India, and is contained between 17°48′ and 22°34′ North latitudes and 81°24′ and 87°29′ East longitudes. Orissa is bounded in the north by Bihar, in the west by Madhya Pradesh, in the south by Andhra Pradesh and in the north-east by West Bengal. It has the Bay of Bengal to the south-east, washing the entire coast-line of 482 kilometres or 301 miles, extending from the boundary of Midnapore district in West Bengal at a point nine miles to the east of the river Subarnarekha to the boundary of Srikakulam district in Andhra Pradesh about fifteen miles south of Gopalpur town. At this point, the territories of Orissa recede from the coast in a widening angle, yielding a long stretch of coastal belt to its southern neighbour, Andhra Pradesh.

Source — (i) Map of India—Political, School Atlas, First Edition by the Surveyor General of India
(ii) Census of India : Paper No. 1 of 1962—Final Population Totals by the Registrar General, India


MAP No. 2
ORISSA
ADMINISTRATIVE DIVISIONS
1961
Miles 20 0 20 40
20 0 20 40 60 80 Kms
BIHAR
WEST BENGAL
MADHYA PRADESH
(C. ZONE)
ANDHRA PRADESH
(S. ZONE)
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
BHADRAK
JAJPUR
DHENKANAL
CUTTACK
BOLANGIR
BAUDH-KHONDMALS
KALAHANDI
BHAWANIPATNA
PHULBANI
TITLAGARH
BOLANGIR
PATNAGARH
NAWAPARA
SONEPUR
BAUDH
KANTAMAL
BAUGUDA
DHARAMGARH
BHANJANAGAR
GANJAM
CHATRAPUR
BERHAMPUR
PARLAKHEMUNDI
RAYAGADA
NOWRANGPUR
KORAPUT
KORAPUT
JEYPORE
NARAYANAPATNA
MALKANGIRI
VENKATAPALAM
PADWA
MACHKUND
SEMILIGUDA
BARIPADA
RAIRANGPUR
KARANJIA
UDALA
BALASORE
NILGIRI
ANANDAPUR
BHADRAK
JAJPUR
CHANDBALI
KENDRAPARA
BHUBANESWAR
KHURDA
PURI
CHILKA LAKE
TALCHER
KAMAKHYANAGAR
ANGUL
HINDOL
DHENKANAL
BARAMBA
NARASINGPUR
CUTTACK
NAYAGARH
ODAGAON
KHANDPARA
BANKI
REFERENCE
Zonal Boundary
State Boundary
Commissioner's Division/District Boundary
Subdivision/Police Station Boundary
State/District Headquarters
Subdivisional Headquarters
Police Station Headquarters

MAP No. 2

ADMINISTRATIVE DIVISIONS, 1961

The map delineates the administrative set up of the State of Orissa. Besides giving the boundary of the State and of the Zone, it shows the boundaries of Divisional Commissioners' *Divisions*, *Districts*, *Subdivisions* of Districts and Police Stations.

The boundaries of different administrative units have been drawn with lines of different thickness and pattern as indicated in the legend. For the sake of visual effect, the names of districts and of the Headquarters of districts and the boundaries of Divisional Commissioners' Divisions have been shown in red. The district boundaries are shown in blue lines and the water surfaces in blue screening.

The State of Orissa forms part of the Eastern Zone of India along with the States of West Bengal, Bihar, Assam and the Union Territories of Tripura, Manipur, Nagaland and NEFA.

Orissa is divided into three Divisional Commissioners' Divisions. The Central Division with Headquarters at Cuttack comprises 4 districts, namely, Cuttack, Puri, Balasore and Mayurbhanj; the Southern Division with Headquarters at Berhampur comprises 4 districts, namely, Ganjam, Koraput, Baudh-Khondmals and Kalahandi, and the Northern Division with Headquarters at Sambalpur comprises the remaining five districts, namely, Sambalpur, Bolangir, Sundargarh, Dhenkanal and Keonjhar. The names of divisions and districts, area in sq. miles, population, density of population, number of villages and towns are indicated in the statement below:

State/District	Area in sq. miles	Population	Population per sq. mile	No. of villages	No. of towns
ORISSA	60,171·8	17,548,846	292	52,125	62
CENTRAL DIVISION	14,782·1	7,545,725	510	19,658	19
Cuttack	4,210·0	3,060,320	727	6,373	7
Puri	4,043·3	1,865,439	461	5,037	5
Balasore	2,507·0	1,415,923	565	4,325	5
Mayurbhanj	4,021·8	1,204,043	299	3,923	2
SOUTHERN DIVISION	23,983·0	4,894,882	204	19,269	21
Ganjam	4,725·0	1,872,530	396	4,264	10
Koraput	9,919·0	1,498,271	151	6,856	7
Baudh-Khondmals	4,282·0	514,427	120	4,852	1
Kalahandi	5,057·0	1,009,654	200	3,297	3
NORTHERN DIVISION	21,406·7	5,108,239	239	13,198	22
Sambalpur	6,764·6	1,508,686	223	3,736	7
Bolangir	3,411·6	1,068,686	313	2,622	5
Sundargarh	3,788·0	758,617	200	1,632	4
Dhenkanal	4,226·0	1,028,935	243	3,140	4
Keonjhar	3,216·5	743,315	231	2,068	2

Source — (i) State Map of Orissa 1 : 1,000,000 ; First Edition, 1958, published by the Surveyor General, India
(ii) Orissa Administrative Atlas, Census of India, 1961, Vol. XII—Part IX-B, Map No. 2
(iii) Census of India, 1961, Vol. XII, Orissa Part II-A (General Population Tables): Table A-1

MAP No. 3

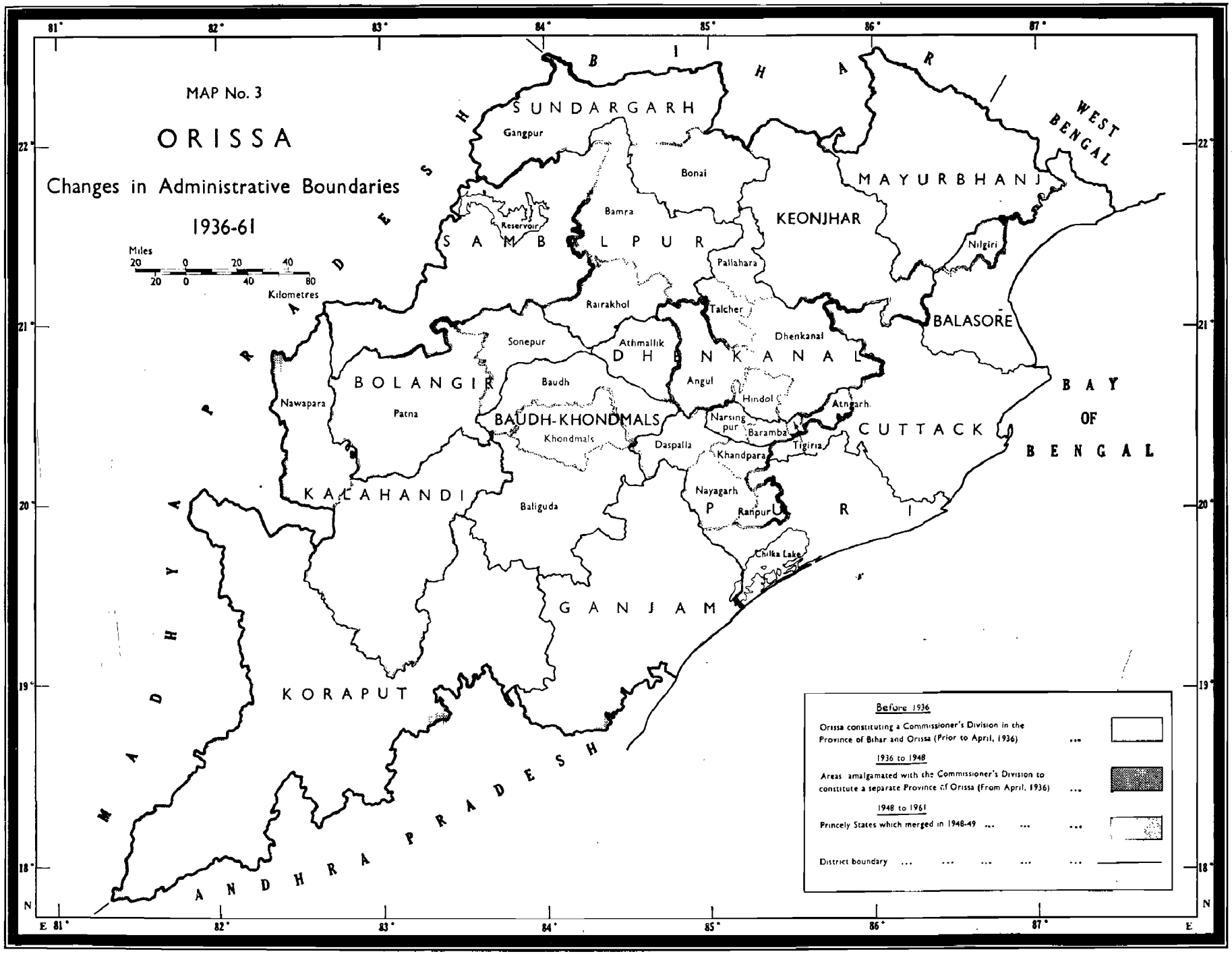
CHANGES IN ADMINISTRATIVE BOUNDARIES, 1936—1961

In the early period of the British rule, Orissa constituted a Commissioner's Division in the Bengal Presidency. In 1912, Orissa and Bihar were separated from Bengal to constitute the separate Province of Bihar and Orissa which continued as such till 1936. On the 1st of April that year, Orissa assumed the status of a separate province and comprised six districts, namely, Cuttack, Puri, Balasore, Sambalpur, Ganjam and Koraput. Angul (with Khondmals), which existed previously as a district, lost its entity and was apportioned between Cuttack and Ganjam districts. The Province thus constituted had an area of 32,198 square miles taken from three different provinces, namely, (i) Orissa Division of the Province of Bihar and Orissa as it was constituted in the year 1912, (ii) a portion of Ganjam district of the Madras Presidency which covered the entire Ganjam Agency tracts and the taluks of the Ganjam Plains, excluding Chicacole, Ichhapur, Somepet and Tekkali. Another portion taken from the Madras Presidency was a considerable area from the Vizagapatam Agency which formed the district of Koraput and (iii) the Khariar zamindari and a portion of the Padampur tract of the Central Provinces constituted as Nawapara subdivision. All these territories together comprised the geographical limits of Orissa from 1936 to 1947.

No territorial changes in the constitution of the State or districts took place for over ten years thereafter. In the years 1948 and 1949, all the princely States of Orissa merged with the rest of Orissa. This administrative change was legalised on the 1st of August, 1949 when 24 ex-States were formally merged with the Province under the States Merger (Governor's Provinces) Order, 1949, increasing the area of the State to what it is now. The ex-States which thus merged are Athgarh, Tigiria, Baramba, Narsingpur, Nilgiri, Nayagarh, Daspalla, Khandpara, Ranpur, Bamra, Rairakhol, Dhenkanal, Talcher, Pallahara, Athmallik, Hindol, Keonjhar, Baudh, Patna, Sonepur, Gangpur, Bonai, Kalahandi and Mayurbhanj.

The ex-States of Athgarh, Tigiria, Baramba and Narsingpur were joined with Cuttack district; Nilgiri with Balasore district; Nayagarh, Daspalla, Khandpara and Ranpur with Puri district; and Bamra and Rairakhol with Sambalpur district. The Angul subdivision of Cuttack district was separated from that district. This subdivision and the Feudatory States of Dhenkanal, Talcher, Pallahara, Athmallik and Hindol were constituted into one district, namely, Dhenkanal. The Khondmals and the Baliguda agency areas of Ganjam district were taken out and put together with the ex-State of Baudh to form the district of Baudh-Khondmals. The Nawapara subdivision was separated from Sambalpur district and was amalgamated with the ex-State of Kalahandi to form another district named Kalahandi. The two ex-States of Keonjhar and Mayurbhanj formed each a separate district with their names as such. The ex-States of Sonepur and Patna were formed into one district, namely, Bolangir, while the ex-States of Gangpur and Bonai together formed the present Sundargarh district. Thus 13 districts were formed after the merger of the ex-princely States by the time the Census of 1951 was taken. No changes took place in the State or district boundaries during the decade 1951-61.

Source — (i) Report of the Administration Enquiry Committee, 1958 (Govt. of Orissa)
(ii) Census Report of Orissa, Part I, 1951


MAP No. 3
ORISSA
Changes in Administrative Boundaries
1936-61
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
Gangpur
Bonai
Bamra
Reservoir
SAMBALPUR
KEONJHAR
MAYURBHANJ
Nilgiri
Pallahara
Rairakhol
Talcher
BALASORE
Sonepur
Athmallik
DHENKANAL
Dhenkanal
BOLANGIR
Baudh
Angul
Hindol
Atngarh
Nawapara
Patna
BAUDH-KHONDMALS
Khondmals
Narsingpur
Baramba
CUTTACK
Daspalla
Tigiria
Khandpara
KALAHANDI
Baliguda
Nayagarh
PURI
Ranpur
Chilka Lake
GANJAM
KORAPUT
Before 1936
Orissa constituting a Commissioner's Division in the Province of Bihar and Orissa (Prior to April, 1936) ...
1936 to 1948
Areas amalgamated with the Commissioner's Division to constitute a separate Province of Orissa (From April, 1936) ...
1948 to 1961
Princely States which merged in 1948-49 ... ...
District boundary ... ...
22° 21° 20° 19° 18° N
81° 82° 83° 84° 85° 86° 87° E

II. PHYSICAL CONDITIONS

MAP No. 4

PHYSIOGRAPHY

The study of physical features of a country is important as these features affect various aspects of the life and activity of the people. The physical set-up of Orissa is interesting as it contains several ranges from the seacoast line to high peaks exceeding 5,000 feet in height.

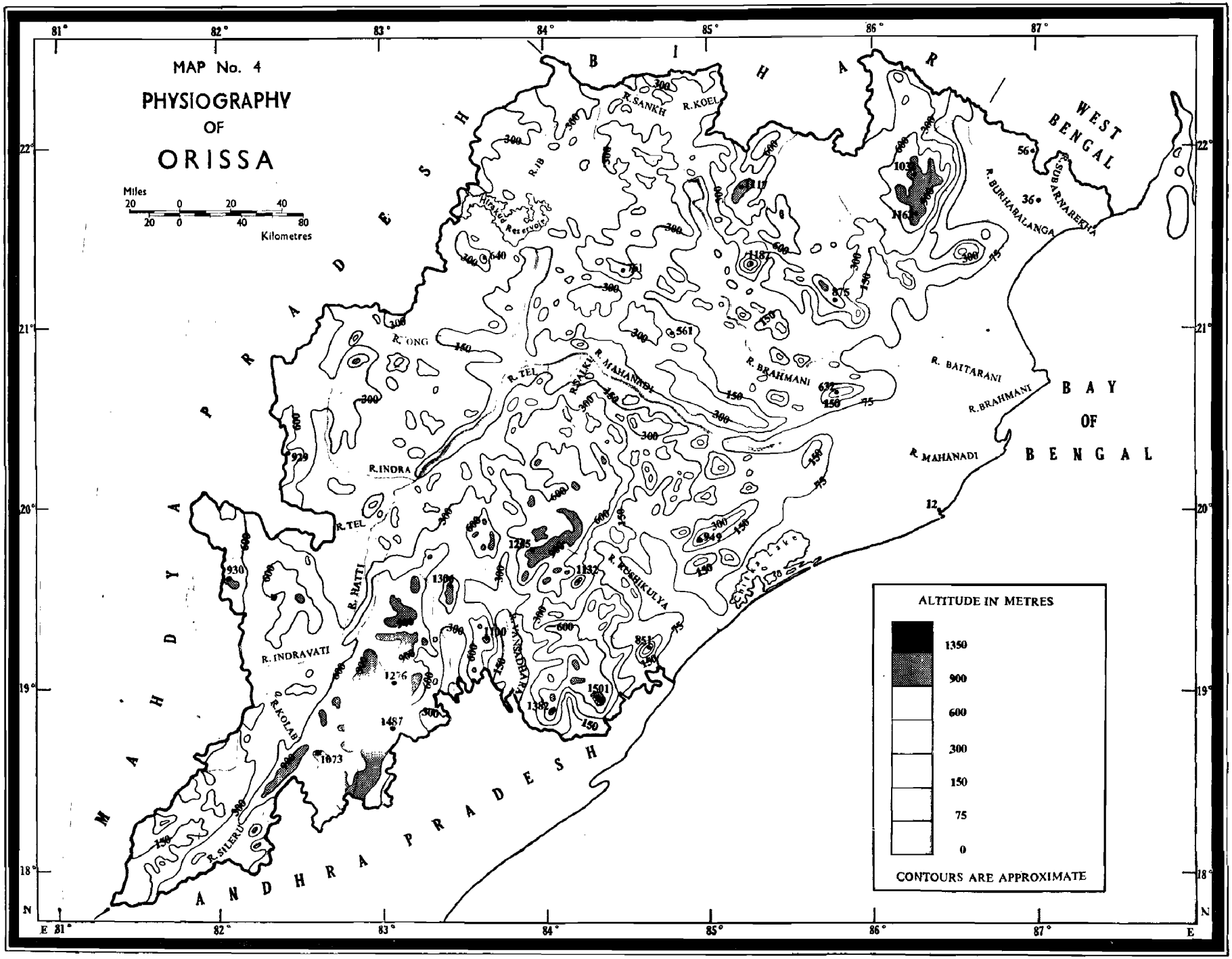
The varying heights of the surface of the country have been divided into six ranges and shown in respective contour lines as well as in shades of hatching as indicated in the legend.

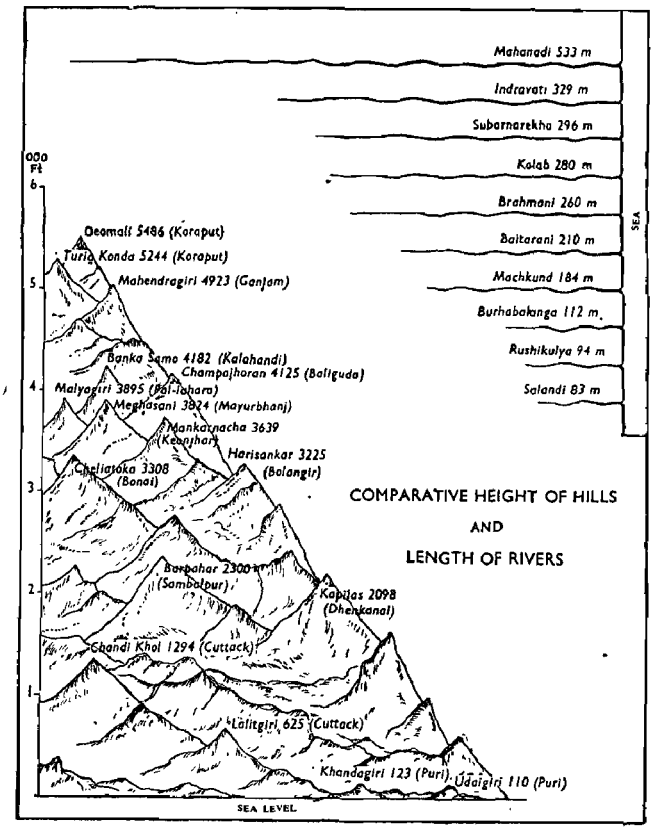
Orissa consists of an extensive plateau in the interior with a foreground of wide coastal plain. The surface of the plateau slopes down gently towards the Bay of Bengal into which the great rivers of Orissa fall. The principal rivers of the central tract, namely, the Mahanadi, the Brahmani and the Baitarani cut wide valleys across the plateau and bring down much sedimentary matters, forming the delta area comprising Puri, Cuttack and Balasore districts. The coast-line shows signs of progradation by the development of lagoons and spits. About 16 miles to the south of Puri town, lies the Chilka lake, which is the widest lagoon of India. The inland plateau is constituted of an interesting combination of denuded hills, sharp ridges and mature valleys. The territory of the State may be broadly divided into four distinct regions, each with a different characteristic, namely, the Northern Plateau, the Central River Basin, the Eastern Hills and the Coastal Plains.

The Northern Plateau covering Mayurbhanj, Keonjhar and Sundargarh districts and Pallahara subdivision of Dhenkanal district is an undulating upland frequently intersected by hill ranges and has a general slope from north to south. It is a continuation of the Chhotnagpur plateau of Bihar and is drained by channels which flow from hills to rivers. Towards north and east of this tract are found hill ranges in larger numbers, the notable ones being the Malaygiri (3,896 ft) in Pallahara subdivision, the Mankarnacha (3,664 ft) in Keonjhar district and the Meghasani (3,824 ft). in Mayurbhanj district. The average elevation in the central section of the plateau is 3,000 ft forming the most important watershed of the rivers Baitarani and Brahmani.

The Central River Basins comprise the watershed areas of the principal rivers of the State and lie between the northern plateau and the Eastern Hills. This tract mainly covers the districts of Bolangir, Sambalpur and Dhenkanal and contains some of the fertile parts of the State. Isolated hills rising abruptly from the plains are a frequent sight in this tract. The Mahanadi-Tel basin which is in the north-western part of the State is quite extensive, covering about two-thirds of Sambalpur and Bolangir districts and one-third of Kalahandi district. There are three other river valleys, almost parallel to each other in the central portion of the State, namely, Mahanadi, Brahmani and Baitarani. They are populous and agriculturally prosperous.

The Eastern Hills, which constitute the last lap of the great line of the Eastern Ghats of India, lie to the south and the south-west of the central river basins, stretching for about 155 miles in NE—SW direction through Koraput, Kalahandi, Khondmals and Ganjam. They comprise wide open upland plateaus fringed by forests and hills which have the highest peaks in the State, outstanding among them being Deomali (5,486 ft), Turia Konda (5,244 ft), Polamakani Parbat (5,201 ft), Meyamali Parbat (4,921 ft) and Karnapadi Konda (4,879 ft). Most part of the Eastern Hills has an elevation of over 3,000 ft acting as the watershed of two sets of rivers, one set flowing directly to the Bay of Bengal, namely, the Rushikulya, the Nagavali and the Vamsadhara, and the


MAP No. 4
PHYSIOGRAPHY
OF
ORISSA
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
R. SANKH
R. KOEL
R. IB
HIRAKUD Reservoir
R. SUBARNAREKHA
R. BURHABALANGA
R. BAITARANI
R. BRAHMANI
R. MAHANADI
R. ONG
R. TEL
R. SALKI
R. MAHANADI
R. INDRA
R. HATTI
R. INDRAVATI
R. KOLAB
R. SILERU
R. KUSHIKULYA
R. VANSADHARA
ALTITUDE IN METRES
1350
900
600
300
150
75
0
CONTOURS ARE APPROXIMATE
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

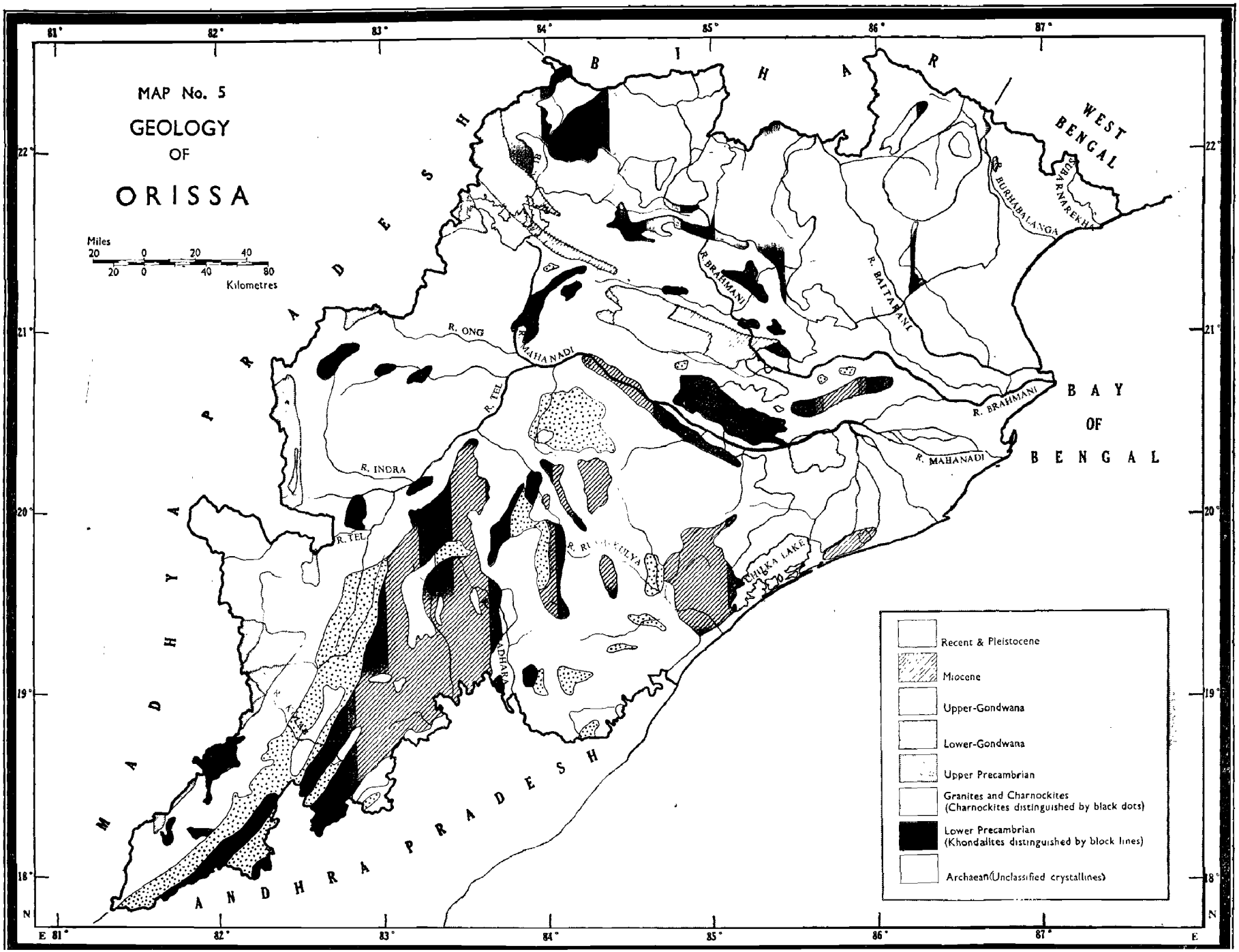


other set feeding the Godavari and the Mahanadi systems. The hill-slopes have thick and valuable forest growth.

The Coastal Plains comprise most part of the districts of Balasore, Cuttack and Puri and a portion of Ganjam, with an extensive alluvial tract in between the hills in the west and salt tracts in the east. A littoral zone runs along the shore of the Bay of Bengal and is intersected by many sluggish and brackish streams affected by tidal waters from the sea. The area is generally sandy in Balasore and Puri but is swampy and marshy in Cuttack district. Behind this line is the alluvial plain with many rivers and canals watering extensive fertile paddy lands.

The principal rivers are the Mahanadi, the Brahmani and the Baitarani, all running almost parallel from north-west to south-east. There are also some smaller rivers, namely, the Salandi, the Burabalang and the Subarnarekha, flowing over the northern part of the State and the Rushikulya, the Vamsadhara, the Nagavali, the Indravati, the Kolab and the Machkund draining the districts of Ganjam and Koraput in the south. The Mahanadi is the largest among them with a total length of 533 miles, about half of which lies in Madhya Pradesh. It drains a basin of 51,000 square miles and discharges during highest floods 1·6 million cusecs or nearly as much as the Ganges.

Source — (i) State Map of Orissa, First Edition, 1 : 1,000,000, 1958, Surveyor General, India
(ii) Map No. 2 of Techno-Economic Survey of Orissa, N.C.A.E.R.
(iii) Orissa Administrative Atlas, Census of India, 1961, Vol. XII—Part IX-B


MAP No. 5
GEOLOGY
OF
ORISSA
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
R. ONG
R. MAHANADI
R. TEL
R. INDRA
R. BRAHMANI
R. BAITARANI
R. BURHABALANGA
R. SUBARNAREKHA
CHILKA LAKE
Recent & Pleistocene
Miocene
Upper-Gondwana
Lower-Gondwana
Upper Precambrian
Granites and Charnockites
(Charnockites distinguished by black dots)
Lower Precambrian
(Khondalites distinguished by block lines)
Archaean (Unclassified crystallines)

MAP No. 5

GEOLOGY

The geological survey of the present Orissa State, which includes several former princely States, was started since the very inception of the Geological Survey of India, and the first Memoir of such Survey brought out in 1856 included a detailed description of the Talcher Coalfield now in Dhenkanal district. Reconnaissance Survey of most portions of the Eastern Ghat area and the Bonai-Keonjhar region was done in the early part of the present century. Subsequently detailed mapping was conducted over several areas of the State and is still in progress. On the basis of information available, the following general geological sequence of the territories covered by the State of Orissa has been worked out :—

RECENT	...	Alluvium and wind blown sand
PLEISTOCENE	...	Older alluvium and Laterite
MIOCENE	...	Baripada Beds
GONDWANA SYSTEM		
Upper	...	Athgarh stage and Mahadeva series
Lower	...	Talcher and Damuda (Barakar and Kamthi) series
PRECAMBRIAN		
Upper	...	Formations of Chhatisgarh and Bastar Basins
Lower	...	Granites and Charnockites
		Kolhan Series, Khondalite series, Iron-ore series (South of Brahmani R.), etc. (North of Brahmani R.)
ARCHAEAN		Unclassified crystallines

Archaean

The unclassified crystallines include granites, gneisses and other magnetitic rocks, the stratigraphical position of which is uncertain.

Precambrian

Lower—The formations of this group may fall under two main heads (1) those occurring south of Brahmani river, constituting the Eastern Ghats and adjoining areas and (2) those occurring north of Brahmani river in the Bonai-Keonjhar and Simlipal areas.

(i) Rocks of the Khondalite series consisting of garnet-sillimanite-graphite schists, quartzites and calc-granulites are the oldest group of rocks. The name Khondalite is used for the typical garnet-sillimanite-graphite schist. Granites and probably acid Charnockites had intruded the Khondalite series resulting in the development of migmatites and various types of hybrid rocks, of which sillimanite 'diabrochite' and leptynite are the most prevalent types of rocks. Some basic and ultrabasic intrusives also occur in this region.

A few outcrops of schistose rocks belonging to the Sukma and Bengpal series occur along the western border in the S.W. corner of the State.

(ii) Rocks of the Iron-ore series and Dhanjori series are composed of metamorphosed sediments and associated basic volcanic rocks.

Singhbhum granite and Bonai granite intrude the rocks of the Iron-ore series. Another group of sedimentary rocks, known as the Kolhan series, younger in age to all the above groups of rocks, also occurs in this region.

Upper—The easternmost extensions of the formations of the Chhatisgarh and Bastar basins, consisting mostly of limestones, shales and quartzites, crop out along the western margin of the State in detached patches.

Gondwana System

The rocks of the Gondwana system consisting of shales, sandstones and grits were deposited in faulted basins and troughs under riverine or lacustrine environments. The lower Gondwanas are coal-bearing.

Lower—The lower Gondwana rocks of Ib river coalfield have been divided into Talcher, Barakar and Kamthi (Himgir) series while those of the Talcher coalfield into Talcher and Damuda series. The Talcher series consists of glacial boulder beds and olive green shales indicating the existence of cold climate in that period. The Barakar and Damuda formations are coal-bearing.

Upper—Rocks of the Mahadeva series occur in the western part of Talcher coalfield while those of Athgarh stage occur near Cuttack. The Athgarh stage is considered to be of Rajmahal age, which is younger to the Mahadeva series.

Miocene

A group of limestones, sandstones and clays occurring in the bed of Burabalang river, about 2 miles south of Baripada town, is termed as Baripada beds. Their occurrence has been traced several miles southwards along the river course and similar beds were also encountered in well borings, but their aerial extent has not been determined. Water worn specimens of a lamellibranch referable to the genus Paphia have been found on the foreshore at Puri.

Pleistocene and Recent

Older alluvium occurs at several places along the coastal tract. Large deposits of laterite (and also bauxite) occur as capping over Khondalite hills. Such laterite is of 'in situ' origin while the laterite occurring at lower levels is of 'detrital' origin, having been transported downward from higher altitudes.

The coastal tract of Balasore, Cuttack and Puri districts is covered mostly by deltaic sediments of Mahanadi, Brahmani and other rivers, which were formed during recent times. The narrow strip of coastal alluvium in Ganjam district also belongs to this age.

Source — (i) Director General, Geological Survey of India, Calcutta
(ii) Geology of India by D. N. Wadia
(iii) Economic Geology of Orissa by Geological Survey of India, 1949

MAP No. 6

MINERALS

The mineral resources of Orissa are rich and extensive. The map shows the location of important known mineral deposits and of mines working at present. The very highly mineralised region covers the districts of Mayurbhanj, Keonjhar, Sundargarh, Sambalpur, Bolangir, Kalahandi and Koraput. The total area covered by mineral concessions is about 300 square miles in which nearly 200 mines are working at present to exploit different minerals.

Out of a large number of mineral occurrences, the important ones, numbering 18, are shown in the map, namely, iron, coal, manganese, chromite, limestone, dolomite, fireclay, china-clay, graphite, kyanite, kaolin, vanadium, sandstone, quartzite, bauxite, lead, copper, asbestos and mica. The minerals which are now being worked are encircled in red in the map.

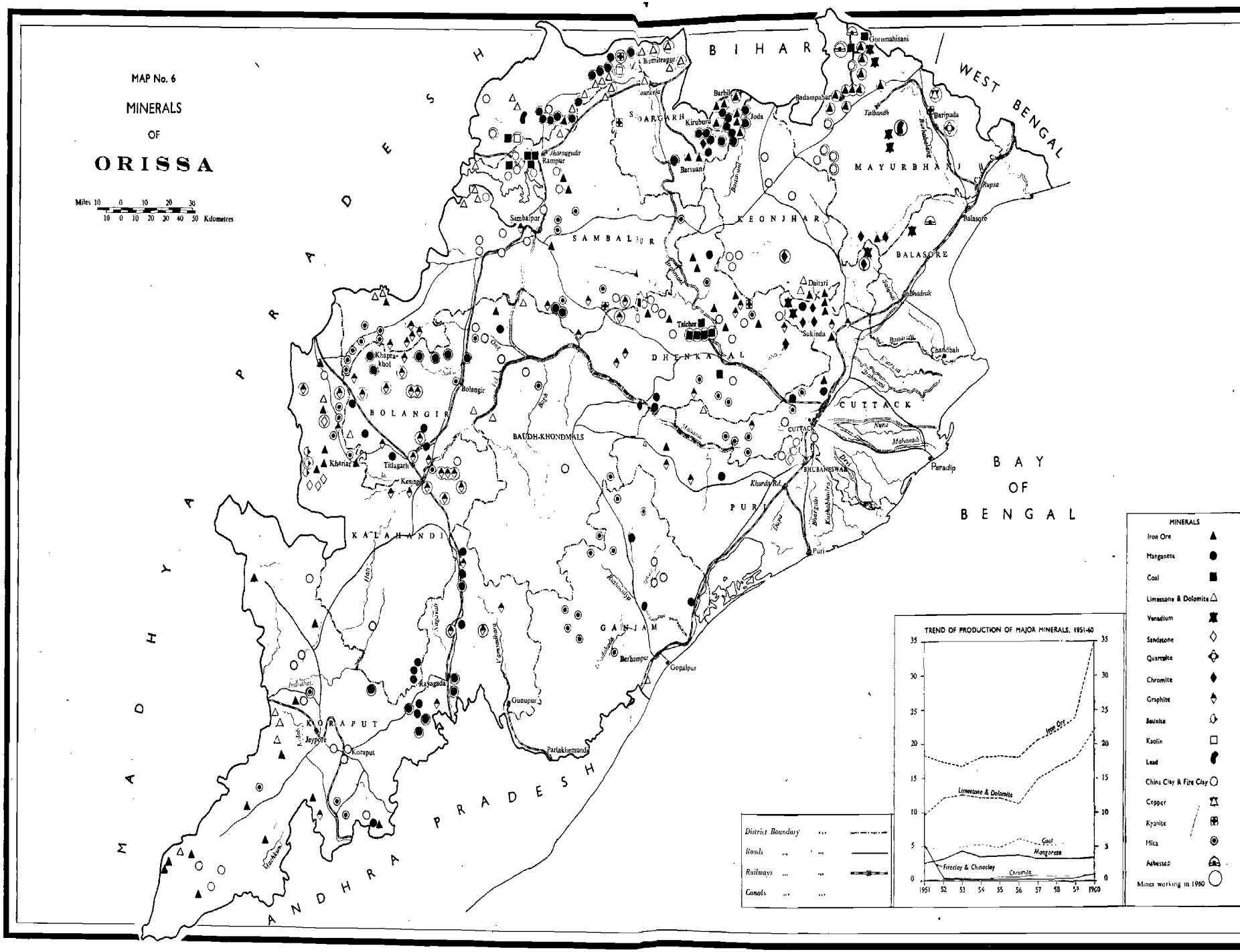
Since the introduction of the Five-Year Plans in the last decade, there has been considerable development of mining industry. The output of minerals increased from Rs. 4·52 crores in 1950-51 to Rs. 6·4 crores in 1956-57 and finally to Rs. 8·98 crores in 1960-61. The rapid increase was due to large-scale development of iron-ore mining for internal consumption at Rourkela and for exports to foreign countries, primarily to Japan. There was also increase in manganese mining due to the requirements of the ferro-manganese industry at Joda and Rayagada.

Iron-ore—There are almost inexhaustible reserves of iron-ore deposit, most of which contain 60 per cent of iron content, located in Sundargarh, Keonjhar and Mayurbhanj districts. The Bonai range alone contains 1,000 million tons while the rest of Orissa may have another 7,000 million tons, which is equivalent to about one-third of the total iron-ore reserves in India. High grade iron-ores containing over 60 per cent of iron content have been discovered recently in the Tomka-Daitari mines near Sukinda. Apart from large-scale export of iron-ore to Japan, a large quantity of the ores is consumed internally in the Hindustan Steel Plant at Rourkela and in the Tata Iron and Steel Factory at Jamshedpur. The quantity of production in 1960 stood at 34·9 lakh tons.

Coal—There are large reserves of low-grade coal estimated at 140 million tons at Rampur in Sambalpur district and 150 million tons at Talcher. The present annual production is 8·4 lakh tons but the National Coal Development Corporation have a project to produce 20 lakh tons annually by the end of Third Five-Year Plan. This coal is required for the Textile and Paper mills within the State as well as for locomotives, but not for Steel Factories as it is non-coking in quality. When the 250 M.W. Thermal Station at Talcher starts working, local consumption will increase considerably.

Manganese—The reserves are estimated at 20 million tons, most of which exist in Keonjhar, Sundargarh and Bolangir districts. Some deposits of this mineral have also been found recently in Koraput and Kalahandi districts. The total quantity produced used to be exported previously but the present policy is to manufacture ferro-manganese for export rather than to export manganese ore in crude form. The present production which is about 3·4 lakh tons meets the requirements of the ferro-manganese plants at Joda and at Rayagada and of the steel plants at Jamshedpur and Rourkela.

Chromite—This mineral is found in Sukinda (Cuttack district) and in Keonjhar and Dhenkanal. The total reserves are estimated at 12 lakh tons. Orissa is the leading producer of chromite in India and supplies over 90,000 tons per year which covers nine-tenths of the total Indian production. Internal consumption is made to some extent


MAP No. 6
MINERALS
OF
ORISSA
Miles 10 0 10 20 30
10 0 10 20 30 40 50 Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
MAYURBHANJ
KEONJHAR
SAMBALPUR
BALASORE
DHENKANAL
CUTTACK
BOLANGIR
BAUDH-KHONDMALS
PURI
KALAHANDI
GANJAM
KORAPUT
Gorumahisani
Barmitrapur
Barbil
Badampahar
Kiruburu
Jodn
Baripada
Jharsuguda
Rampur
Barsuan
Sambalpur
Balasore
Daitari
Talcher
Sukinda
Chandbali
Khaprakhol
Bolangir
Kharial
Titlagarh
Kesinga
Cuttack
Bhubaneswar
Paradip
Puri
Khurda Rd.
Berhampur
Gopalpur
Kasipada
Gunupur
Jeypore
Koraput
Parlakhemundi
TREND OF PRODUCTION OF MAJOR MINERALS, 1951-60
Iron Ore
Limestone & Dolomite
Coal
Manganese
Fireclay & Chinaclay
Chromite
1951 52 53 54 55 56 57 58 59 1960
District Boundary
Roads
Railways
Canals
MINERALS
Iron Ore
Manganese
Coal
Limestone & Dolomite
Vanadium
Sandstone
Quartzite
Chromite
Graphite
Bauxite
Kaolin
Lead
China Clay & Fire Clay
Copper
Kyanite
Mica
Asbestos
Mines working in 1960

by the cement factory at Rajgangpur, while most part of the production is sent outside.

Limestone and Dolomite—The principal limestone and dolomite deposits are found in Sundargarh, Koraput and Sambalpur districts. The limestone deposits are estimated at 100 million tons in Koraput, 70 million tons in Dungri (Sambalpur) and 60 million tons in Sundargarh. The dolomite reserves in Sundargarh are extensive, estimated at over 250 million tons. The annual production of limestone and dolomite is of the order of 22 lakh tons, which is utilized by the ferro-manganese plant at Joda, the cement factory at Rajgangpur and the steel plants in the eastern region of India.

Fireclay—Fireclay is produced to an extent of 90,000 tons in the Belpahar area (Sambalpur district). The main consumer is the refractory plant at Belpahar.

China-clay—The production is of the order of 30,000 tons, being mined near Jashipur (Mayurbhanj) and in some localities of Keonjhar, Cuttack, Puri and Koraput districts. Apart from meeting the internal requirements of the refractory plant at Belpahar, the ceramic factory at Barang and the cement factory at Rajgangpur, some quantities are despatched outside the State, mostly to Calcutta and Bombay.

Graphite—There are irregular veins of graphite in Koraput, Kalahandi, Bolangir and Sambalpur districts from which about 1,000 tons of graphite are produced and despatched to a factory at Rajahmundry.

Bauxite—There are extensive deposits estimated at over 8 lakh tons occurring in Sambalpur, Bolangir and Kalahandi districts. This mineral is not yet mined.

The statement below gives the quantity of important minerals produced in Orissa during a period of 10 years from 1951 to 1960 :

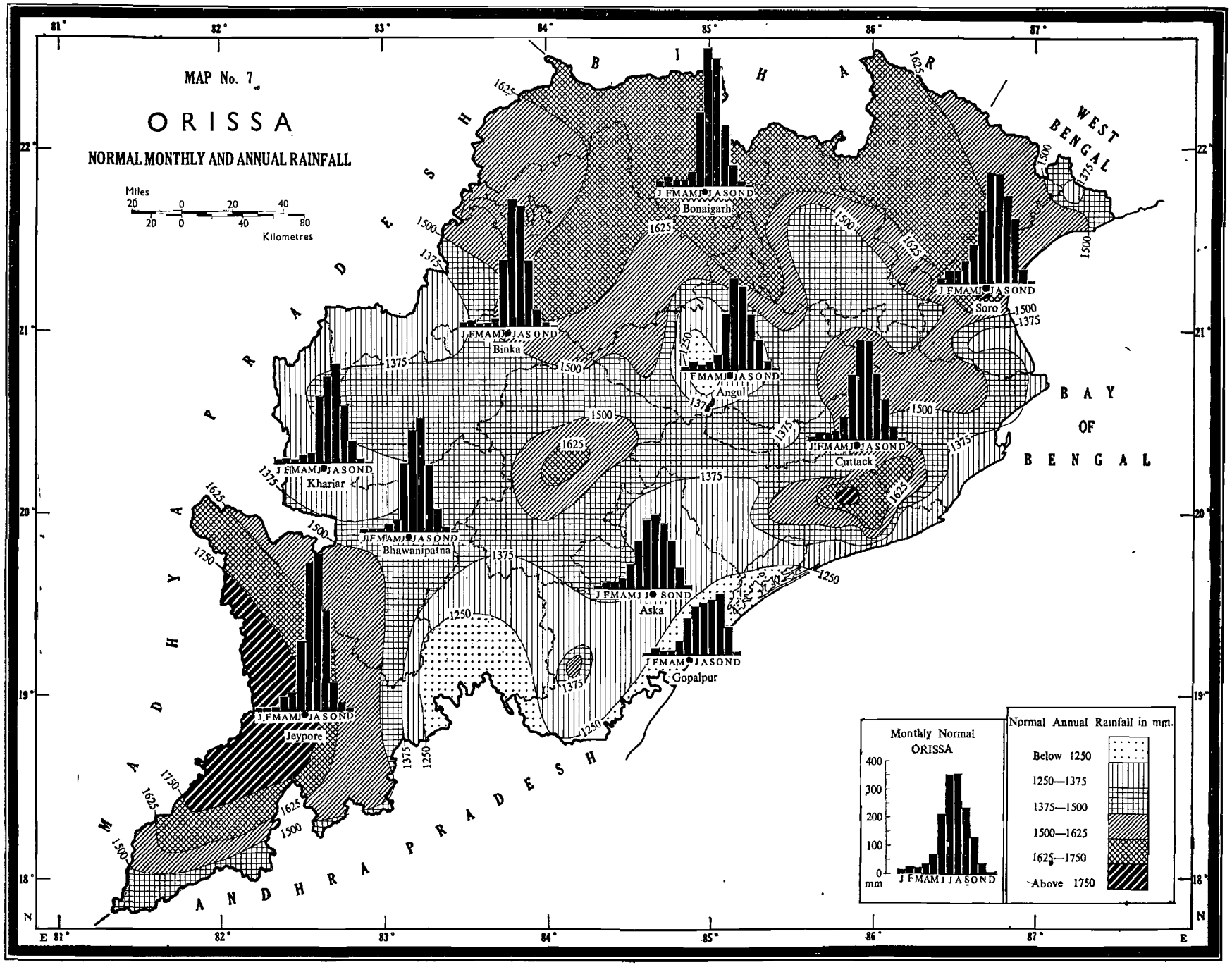
STATEMENT SHOWING PRODUCTION IN TONS OF IMPORTANT MINERALS IN ORISSA DURING DECADE 1951-60

Mineral	Total production in 1951-60	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Iron ...	2,07,23,360	18,23,309	17,25,172	16,65,753	17,94,185	18,22,973	17,97,010	20,48,259	21,78,510	23,76,453	34,91,736
Coal ...	55,42,148	4,81,816	4,58,112	4,90,077	5,26,486	4,82,099	6,13,920	5,23,372	5,20,599	6,03,926	8,41,741
Manganese ...	33,99,432	2,52,298	3,08,860	4,31,678	3,46,874	3,64,134	3,72,415	3,29,699	3,30,297	3,20,867	3,42,310
Chromite ...	4,61,204	1,598	16,906	31,389	14,015	45,013	49,735	71,941	61,915	75,265	93,427
Limestone and Dolomite ...	1,42,05,710	9,72,987	12,08,844	12,52,508	12,17,781	12,10,292	11,30,221	15,00,096	16,67,410	18,19,013	22,26,558
Fireclay ...	7,18,113	5,14,887	18,691	11,674	10,499	11,383	10,097	13,136	23,537	29,477	74,732
China-clay ...	1,18,571	3,723	4,424	5,610	7,986	6,700	9,610	8,661	15,573	21,387	34,947
Graphite ...	9,407	719	1,169	381	804	917	635	923	1,405	1,340	1,114
Kyanite ...	2,391	630	1,167	14	138	219	223	Nil	Nil	Nil	Nil
Kaolin ...	15,081	—	—	—	—	—	382	1,738	5,555	3,950	3,456

Source— (i) Director of Mines, Orissa.

(ii) Mining Section of District Collectors' Offices.

(iii) Techno-Economic Survey of Orissa, N.C.A.E.R.


MAP No. 7
ORISSA
NORMAL MONTHLY AND ANNUAL RAINFALL
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Bonaigarh
Soro
Binka
Angul
Cuttack
Khariar
Bhawanipatna
Aska
Gopalpur
Jeypore
J F M A M J J A S O N D
Monthly Normal
ORISSA
mm
Normal Annual Rainfall in mm.
Below 1250
1250—1375
1375—1500
1500—1625
1625—1750
Above 1750

MAP No. 7

NORMAL MONTHLY AND ANNUAL RAINFALL

The State is the convenient point of convergence of monsoon currents of the Bay of Bengal and the Arabian Sea. Most of the districts receive rainfall from the Bay of Bengal branch of the S-W Monsoon, but the Eastern Ghat region receives the bulk of rainfall from the Arabian Sea branch, which reaches this part after passing over the Indian Peninsula. The coastal districts lie on the track of storms which frequently cross inland from the Bay of Bengal during the period of S-W Monsoon and move in the north-westerly direction. A few squalls of N-E Monsoon appear over the Eastern Hills during this period. The normal annual rainfall in the State is 1,482·2 mms., but during the decade 1951-60 the average annual rainfall was slightly lower than normal, namely, 1,412·3 mms. The average number of rainy days per year is 72, most of which occur between the middle of June with the advent of monsoon and the end of September. Nearly 77 per cent of the annual total rainfall is recorded during this period. July and August receive the highest rainfall, recording nearly 24 per cent of the total annual rainfall each month.

In the map, diagrams of normal monthly rainfall of 10 selected stations in the State have been drawn. These stations are Soro, Cuttack, Aska, Gopalpur, Jeypore, Bhawanipatna, Khariar, Binka, Bonai and Angul. The selected stations give a fair idea of precipitation in the respective regions. For example, the pattern of rainfall in a seacoast locality, such as Gopalpur is very much different from that of Bonaigarh, which is in the interior and in the close vicinity of hills and mountains. The difference in rainfall between dry months and wet months is very conspicuous in inland stations.

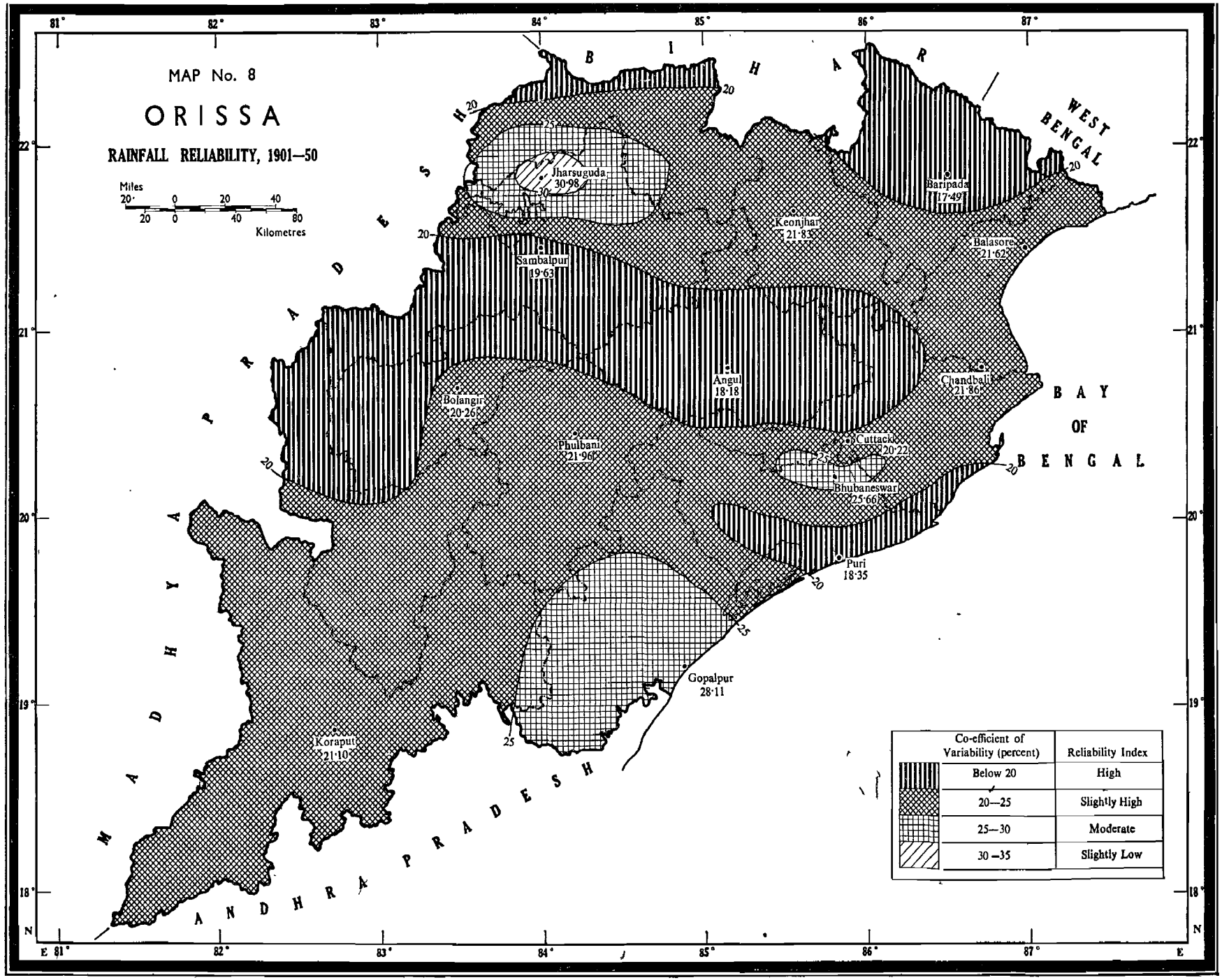
The map also shows the normal annual rainfall in different regions. Isohyets have been drawn at intervals of 125 mms. (nearly 5 inches) of rainfall, so as to show six ranges from below 1,250 mms. to above 1,750 mms. per year. The highest rainfall region occurs in the south-western part of Koraput district. Next in order is the northern portion of the State adjoining the borders of Bihar. The coastal tract has moderate rainfall.

The statement below gives the normal annual and monthly rainfall of the districts of Orissa :

ANNUAL AND MONTHLY NORMALS OF RAINFALL
(Based on records from 1901 to 1950)
(Figures in millimetres)

State/District		Annual Normal	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
ORISSA	...	1,482·2	14·0	25·9	21·4	35·3	70·8	213·2	351·6	335·6	236·5	131·6	39·9	6·4
Kalahandi	...	1,378·2	11·5	15·4	13·6	23·7	33·7	228·3	343·5	384·6	220·9	81·9	17·9	3·2
Koraput	...	1,521·8	6·7	11·3	16·2	53·4	75·0	205·8	351·1	380·3	262·1	116·5	35·8	7·6
Sambalpur	...	1,527·0	14·3	24·4	16·4	17·6	30·9	218·7	469·6	430·9	224·3	61·6	14·7	3·6
Bolangir	...	1,443·5	13·9	18·2	13·9	18·7	29·1	233·7	391·7	407·1	232·0	65·6	15·9	3·7
Baudh-Khondmals	...	1,597·1	13·0	27·6	25·1	35·5	66·0	239·1	390·8	373·8	260·3	127·2	31·8	6·9
Ganjam	...	1,295·6	10·8	22·2	21·3	42·3	76·8	169·2	221·6	242·4	229·6	179·8	68·6	11·0
Sundargarh	...	1,647.6	19·9	36·7	19·3	20·1	41·1	250·9	480·2	458·2	223·9	75·9	16·1	5·3
Dhenkanal	...	1,421·1	15·5	30·8	18·7	28·8	59·5	208·9	382·0	333·0	220·6	93·6	25·2	4·5
Puri	...	1,449·1	14·2	26·2	19·7	26·8	67·2	207·0	310·8	300·3	244·7	167·0	57·9	7·3
Keonjhar	...	1,534·5	22·2	38·0	23·0	43·3	88·9	209·5	391·8	335·3	233·0	112·7	31·7	5·1
Cuttack	...	1,501·3	13·7	27·5	20·8	34·2	86·5	222·3	351·8	315·8	229·2	147·4	46·7	5·4
Mayurbhanj	...	1,648·2	21·9	35·5	29·8	47·3	96·7	235·2	426·4	375·5	232·3	113·6	27·4	6·6
Balasore	...	1,568·4	17·1	30·6	34·3	53·1	105·1	218·2	332·6	313·8	243·1	171·0	42·3	7·2

Source—Memoirs of the India Meteorological Department, Volume XXXI, Part III.


MAP No. 8
ORISSA
RAINFALL RELIABILITY, 1901—50
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Jharsuguda 30·98
Baripada 17·49
Keonjhar 21·83
Balasore 21·62
Sambalpur 19·63
Angul 18·18
Chandbali 21·86
Bolangir 20·26
Phulbani 21·96
Cuttack 20·22
Bhubaneswar 25·66
Puri 18·35
Gopalpur 28·11
Koraput 21·10
Co-efficient of Variability (percent)
Reliability Index
Below 20
High
20—25
Slightly High
25—30
Moderate
30—35
Slightly Low

MAP No. 8

RAINFALL RELIABILITY, 1901—50

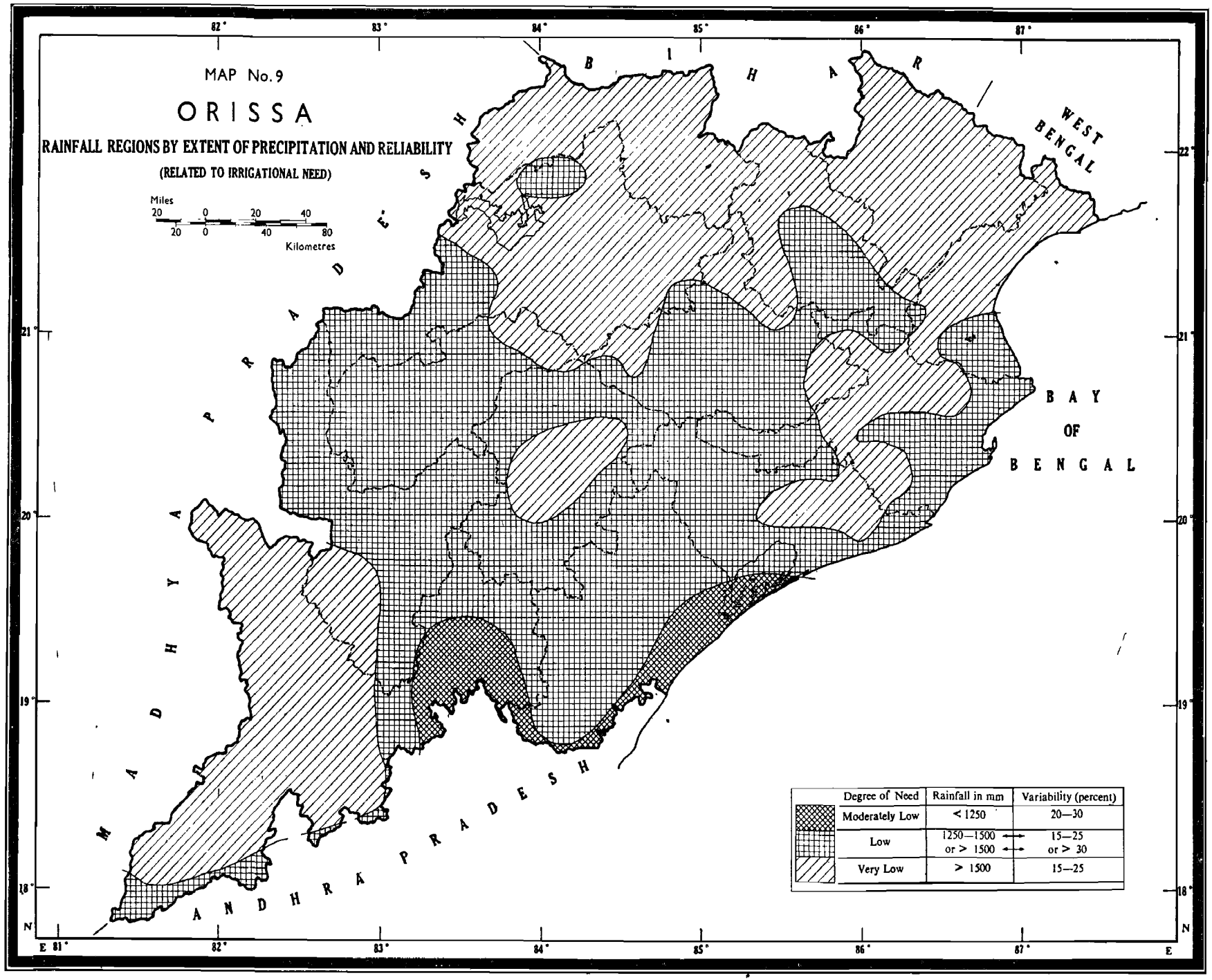
The extent of reliability of rainfall in a particular region is measured by what may be called the Co-efficient of Variability of annual rainfall. In fact, Variability is inverse to Reliability. The region which shows high variability in the quantity of rainfall during a year is a region of low reliability. The degree of reliability, as calculated according to an approved formula, is shown in the map by 4 gradations, namely, below 20, 20 to 25, 25 to 30 and 30 to 35. Accordingly, there are four regions of rainfall reliability as mentioned below :

1. Region of low reliability, i.e., in a pocket in Sambalpur district around Jharsuguda (Coefficient of Variability is greater than 30%)
2. Region of slightly low reliability is coastal plain of Ganjam district and a part of Puri district (Coefficient of Variability 25—30%)
3. Region of medium reliability is plateau area in the south and in the north (Co-efficient of Variability between 20—25%)
4. Region of high reliability is the northern skirt of Mahanadi valley and north-eastern part of Mayurbhanj plateau, whole of Dhenkanal district, major part of Sambalpur district and western part of Cuttack district (Co-efficient of Variability below 20%)

The following statement gives the Coefficient of Variability of 14 rain-recording stations of Orissa :

Station	Mean rainfall in inches	Standard deviation in inches	Coefficient of Variability
Balasore	61·11	13·21	21·62
Chandbali	62·16	13·59	21·86
Bolangir	57·63	11·67	20·26
Cuttack	60·30	12·19	20·22
Angul	50·38	9·16	18·18
Gopalpur	43·94	12·35	28·11
Keonjhar	54·88	11·98	21·83
Koraput	63·22	13·34	21·10
Baripada	65·02	11·37	17·49
Phulbani	59·74	13·12	21·96
Bhubaneswar	58·76	15·08	25·66
Puri	53·79	9·87	18·35
Jharsuguda	60·32	18·69	30·98
Sambalpur	63·33	12·43	19·63

Source — Office of the Registrar General, India


MAP No. 9
ORISSA
RAINFALL REGIONS BY EXTENT OF PRECIPITATION AND RELIABILITY
(RELATED TO IRRIGATIONAL NEED)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
82°
83°
84°
85°
86°
87°
E
81°
22°
21°
20°
19°
18°
N
Degree of Need | Rainfall in mm | Variability (percent)
Moderately Low | < 1250 | 20—30
Low | 1250—1500 or > 1500 | 15—25 or > 30
Very Low | > 1500 | 15—25

MAP No. 9

RAINFALL REGIONS BY EXTENT OF PRECIPITATION AND RELIABILITY

(Related to Irrigational Need)

This map has been drawn by super-imposing the Annual Rainfall Map (Map No. 7) upon the map of Rainfall Reliability (Map No. 8).

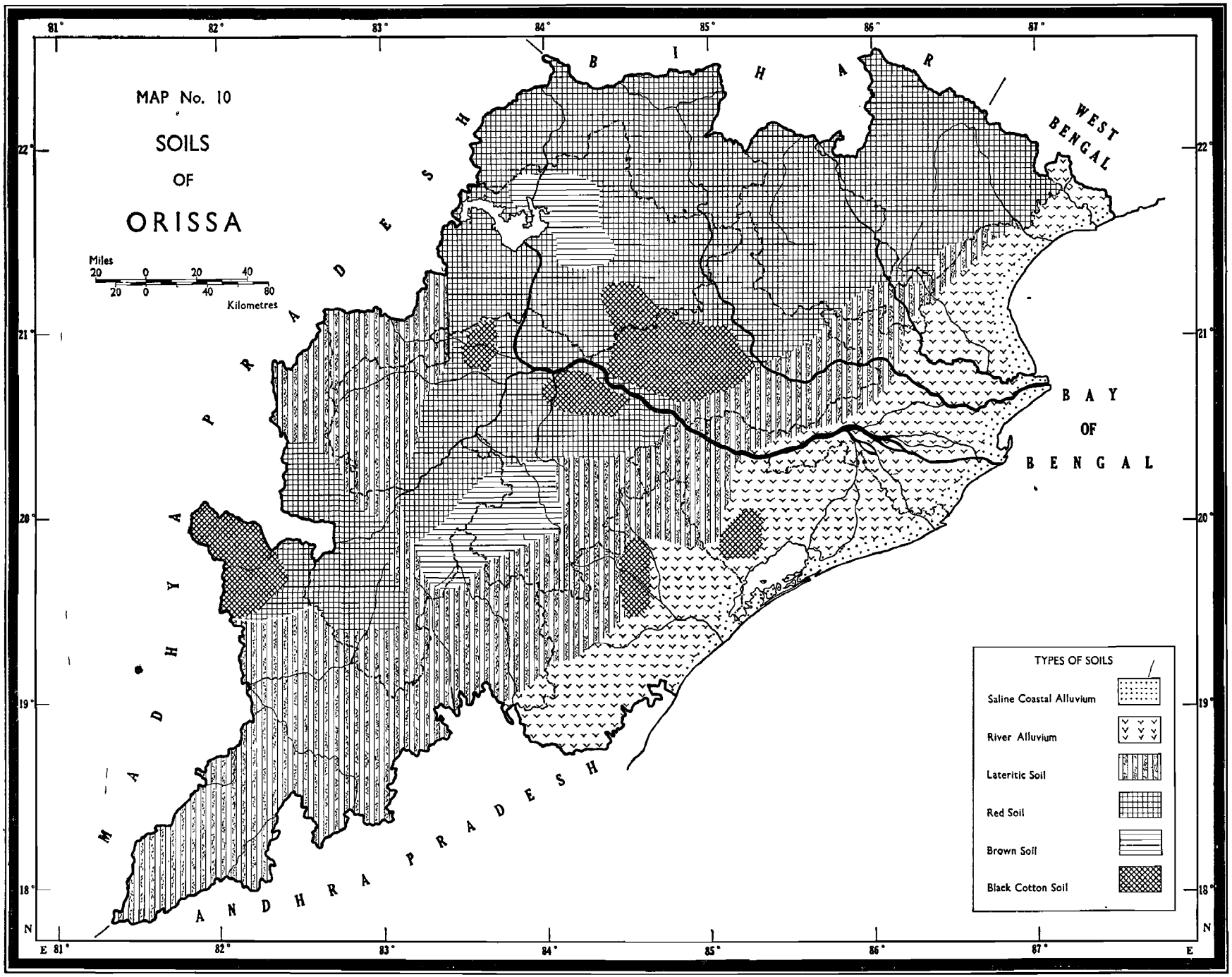
The regions are delineated according to their irrigational need with their respective indices of reliability and normal annual rainfall. This map depicts three regions with different degrees of irrigational need—

(i) Very low need (rainfall 1,500—2,000 mm : Coefficient of Variability 15—25),

(ii) Low need (rainfall 1,250—1,500 mm : Coefficient of Variability 15—25) ; and

(iii) Moderately low need (rainfall 1,000—1,250 mm : Coefficient of Variability 25—35).

Under category (i) fall the western part of Koraput plateau, the northern plateau comprising Sambalpur district, part of Bolangir district, Sundargarh district, part of Mayurbhanj district, part of Dhenkanal district and coastal plain from Balasore district to Cuttack district. Here the irrigational need is very low. Under category (ii) falls the area comprising the whole of Mahanadi basin and part of Dhenkanal and Puri districts. Here the irrigational need is low. Under category (iii) falls the coastal part of Ganjam district. Here the irrigational need is medium.


MAP No. 10
SOILS
OF
ORISSA
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E
TYPES OF SOILS
Saline Coastal Alluvium
River Alluvium
Lateritic Soil
Red Soil
Brown Soil
Black Cotton Soil

MAP No. 10

SOILS

Soils, broadly speaking, are the surface layers of earth and are formed by the constituents of the rocks underlying them, combined with some environmental matters. A study of distribution of soils is important in the context of planning of agricultural production, and of development of natural resources.

The types of soil occurring in Orissa may be divided into six categories, as mentioned below :

(i) Saline Coastal Alluvium
(ii) River Alluvium
(iii) Lateritic soil
(iv) Red soil
(v) Brown soil
(vi) Black cotton soil

Saline Coastal Alluvium—All along the seacoast-line starting from north Balasore and stretching up to the south of the Chilka, a narrow belt of saline soil with marshy patches exists. It consists of fine sand and soft clay with a saline admixture. The soil is unfit for erection of heavy buildings except in stretches of firm sandy tracts as in Puri, Gopalpur and Chandipur (Balasore). It can hardly grow any crop other than cocoanut because of its salinity.

River Alluvium—All the coastal districts, namely, Balasore, Cuttack, Puri and Ganjam, have rich deltaic alluvial soil with large content of clay. The northernmost district has sandy loam in the alluvium while the rest of the zone has stiff clay. The zone has some of the richest agricultural lands in the State.

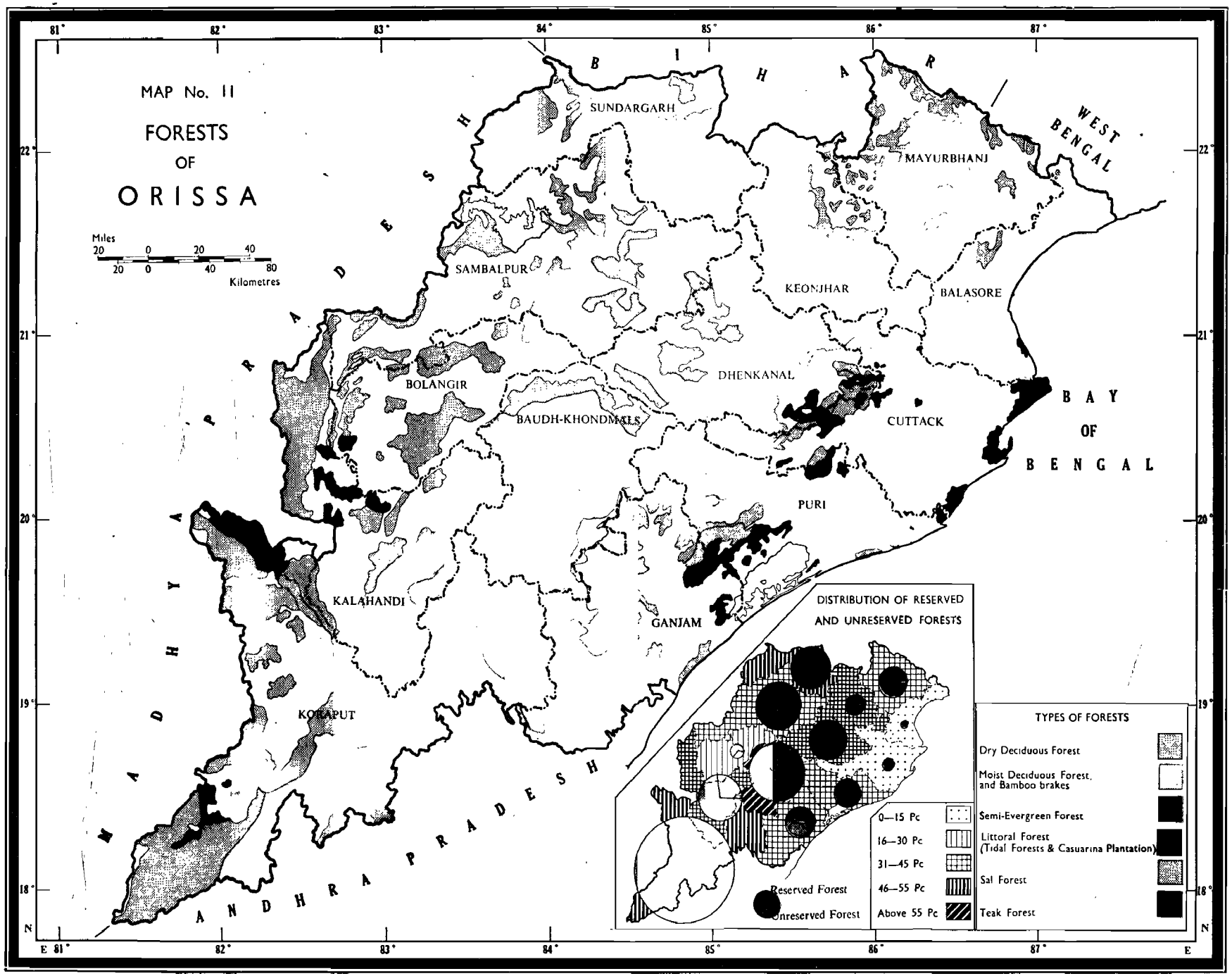
Lateritic soil—A long stretch extending from the south-west corner of Koraput to the northern portion of Balasore district with a width varying from 30 to 60 miles or more contains lateritic soil. A considerable portion of the Eastern Ghats region is covered by this soil. It is not considered good for agricultural purposes as it is poor in plant nutrients. But it is good for construction purposes particularly heavy-type buildings.

Red soil—The central table-land comprising the Mahanadi-Tel basin as well as the whole of northern portion of the State from Sundargarh to Mayurbhanj contains red soil. This soil is poor for plant life but is good for building purposes. There are deposits of iron-ores, manganese, limestone and other minerals, as a result of which many large scale factories have sprung up in the locality.

Brown soil—Brown soil is found in Baliguda subdivision and a portion of Rayagada subdivision and Kalahandi sadar subdivision, where there are thick reserved forests. There is dense growth of bamboo and various trees of moist deciduous type, including sal.

Black cotton soil—This soil is found in a number of patches in the Central belt on either side of the river Mahanadi and in the northern part of Koraput district. The soil cracks when exposed to hot sun and is, therefore, not suitable for masonry buildings unless special care is taken at the foundation stage. Cotton is the main crop of this soil.

Source — (i) Director of Soil Conservation, Orissa
(ii) Land Utilization in Orissa by Dr. B. N. Sahu


MAP No. 11
FORESTS
OF
ORISSA
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
MAYURBHANJ
KEONJHAR
BALASORE
BOLANGIR
DHENKANAL
BAUDH-KHONDMALS
CUTTACK
PURI
KALAHANDI
GANJAM
KORAPUT
DISTRIBUTION OF RESERVED AND UNRESERVED FORESTS
Reserved Forest
Unreserved Forest
0—15 Pc
16—30 Pc
31—45 Pc
46—55 Pc
Above 55 Pc
TYPES OF FORESTS
Dry Deciduous Forest
Moist Deciduous Forest, and Bamboo brakes
Semi-Evergreen Forest
Littoral Forest (Tidal Forests & Casuarina Plantation)
Sal Forest
Teak Forest
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 11

FORESTS

Orissa is one of the most thickly forested States of India. Forests in India cover 22 per cent of the total geographical area, while in Orissa, the proportion is nearly double. covering 25,358 square miles out of the total land area of 60,172 square miles which amounts to 42 per cent. But in fact most of the unreserved forests and undemarcated protected forests are rocky surfaces with sparse or little vegetation which, though officially listed under forest areas, have insignificant value from functional or productive point of view. The area covered by wooded forests may not exceed 15,000 square miles or 25 per cent of the geographical area of the State.

The distribution of forests within the State is uneven. The coastal region where the density of population is high has no forests, except small patches of littoral vegetation. Even in the Inland tracts there are many extensive localities which are thickly populated and have no forests, as seen in the plains portion of Mayurbhanj, Dhenkanal, Sundargarh, Sambalpur, Bolangir and Kalahandi districts. Similarly, forests have disappeared from portions of Koraput, Ganjam and Baudh-Khondmals where podu cultivation is practised. There are, however, other tracts of vast expanse in these districts which have thickly wooded hills containing valuable forests.

The following statement gives the area of forests, Reserved and Unreserved, in each district of the State, in square miles. Minor adjustments have been made in the area of Forest Divisions as given in the Report of the Forest Enquiry Committee, so as to make them consistent with the approved area of Revenue districts:

District	Total area	Forest area	Reserved forests	Un-reserved forests	Percentage of forest area to total area of district
Cuttack	4,210·0	508·41	302·86	205·55	12·1
Balasore	2,507·0	241·73	79·97	161·76	9·6
Puri	4,043·3	1,415·75	659·94	755·81	35·0
Sambalpur	6,764·6	2,428·12	1,575·46	852·66	35·9
Ganjam	4,725·0	1,640·21	767·93	872·28	34·7
Koraput	9,919·0	5,521·51	—	5,521·51	55·7
Dhenkanal	4,226·0	2,004·53	1,088·87	915·66	47·4
Baudh-Khondmals	4,282·0	3,016·87	435·59	2,581·28	70·5
Bolangir	3,411·6	722·10	462·48	259·62	21·2
Sundargarh	3,788·0	2,083·88	751·47	1,332·41	55·0
Kalahandi	5,057·0	2,468·65	696·26	1,772·39	48·8
Mayurbhanj	4,021·8	1,712·46	1,269·49	442·97	42·6
Keonjhar	3,216·5	1,593·99	592·56	1,001·43	49·6
Total for Orissa	60,171·8	25,358·21	8,682·88	16,675·33	42·1

The forests may be broadly classified under three main types, namely,

(i) Northern tropical semi-evergreen,

(ii) Northern tropical moist deciduous,

(iii) Northern tropical dry deciduous.

Northern tropical semi-evergreen forests— They occur in small areas, usually not far away from the seacoast, mostly in the districts of Ganjam, Puri, Cuttack and Dhenkanal.

Northern tropical moist deciduous forests—These forests are more extensive and occur in continuation of semi-evergreen type. They are found spreading over from the southern extremity of Koraput to a central belt of Mayurbhanj passing in a haphazard manner through Ganjam, Puri, Cuttack and Dhenkanal.

Northern tropical dry deciduous forests—This type of forest occurs further west where the conditions are appreciably dry. The central tracts of the State as well as the north and the western portions of Koraput, Kalahandi, Bolangir and Sambalpur are covered with these forests.

Subsidiary types—In addition to the above main types of forests, there exist some subsidiary types with limited occurrence due to varying local climatic and biotic factors. The chief among them are—

(a) Littoral forests occurring in a narrow strip along the seacoasts of Cuttack and Balasore districts.

(b) Sal—The sal forests which are a subtype of moist deciduous forests occur extensively from south-west to north-east of the State passing through all the districts which lie in this belt. Bolangir district and the western parts of Kalahandi and Sambalpur districts are not covered by sal forests. Sal timber constitutes about 75 per cent of the total timber production in the State.

(c) Teak—It is a sub-type of dry deciduous forest. Occurrence of teak is limited to Koraput and Kalahandi districts.

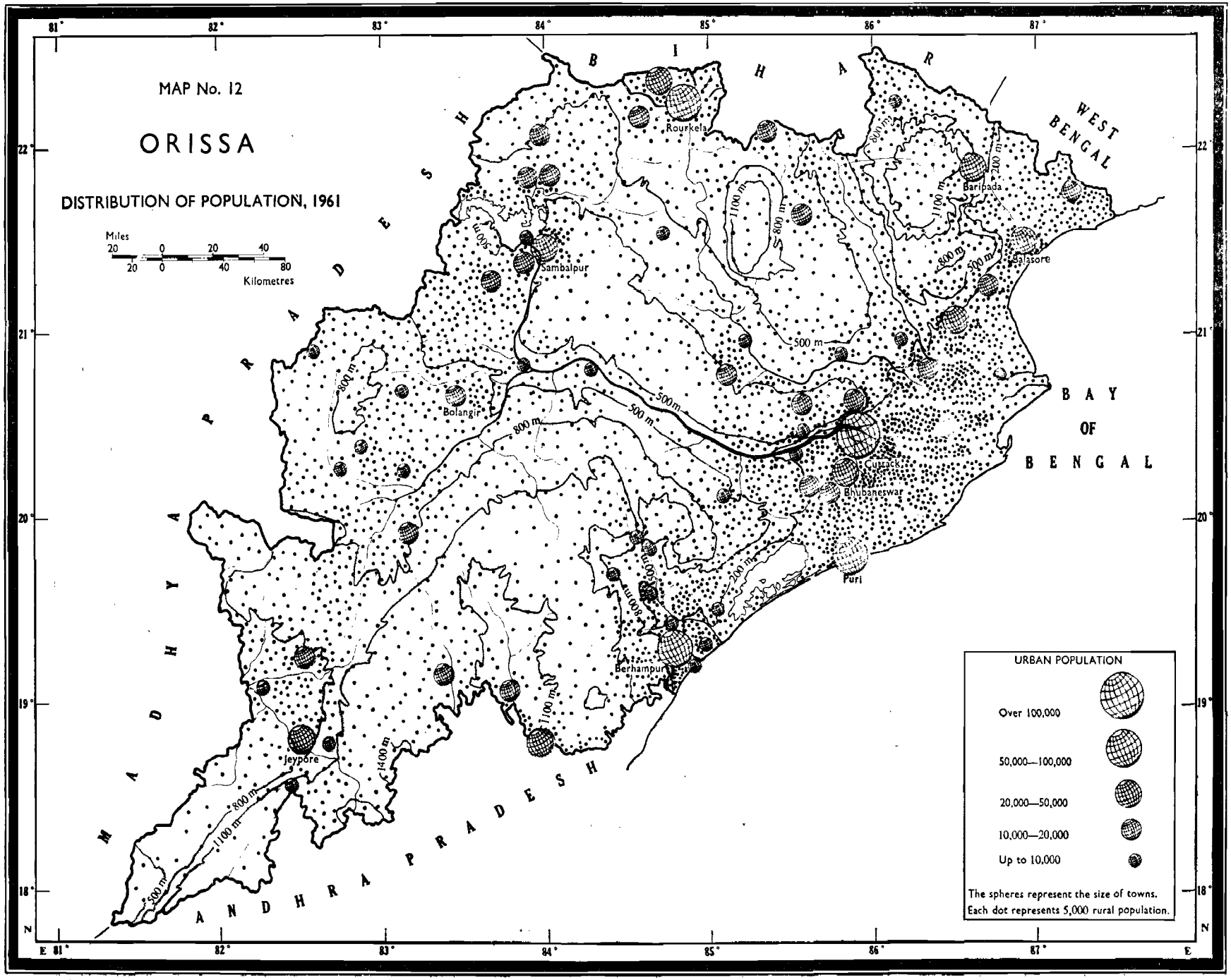
The forests yield a variety of products of which timber, poles and firewood are important. The average yield of timber is about 114 lakh cubic feet out of which 42 lakh cubic feet is consumed within the State and the rest is exported outside. Out of nearly 75 timber species, only a few, namely, sal, teak, asan, kurum, bija, bandhan, sisoo and kongra find a ready market. The average yield of firewood is estimated to be about 10 crore cubic feet annually.

Among minor forest products, the important ones are bamboo, kendu leaf, tussar, cocoons, lac, myrobalans, cane, arrowroot, tamarind, mahua flower, broom grass, sabai grass, gums and resin, khair and sunari bark.

Source — (i) Report of the Forest Enquiry Committee, Orissa, 1959

(ii) Data supplied and drawing scrutinized by Forest Utilisation Officer, Orissa (letter No. 1884, dated 11-6-1963)

III. DEMOGRAPHIC STRUCTURE AND TRENDS


MAP No. 12
ORISSA
DISTRIBUTION OF POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Rourkela
Baripada
Balasore
Sambalpur
Bolangir
Cuttack
Bhubaneswar
Puri
Berhampur
Jeypore
500 m
800 m
1100 m
1400 m
200 m
URBAN POPULATION
Over 100,000
50,000—100,000
20,000—50,000
10,000—20,000
Up to 10,000
The spheres represent the size of towns.
Each dot represents 5,000 rural population.
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 12

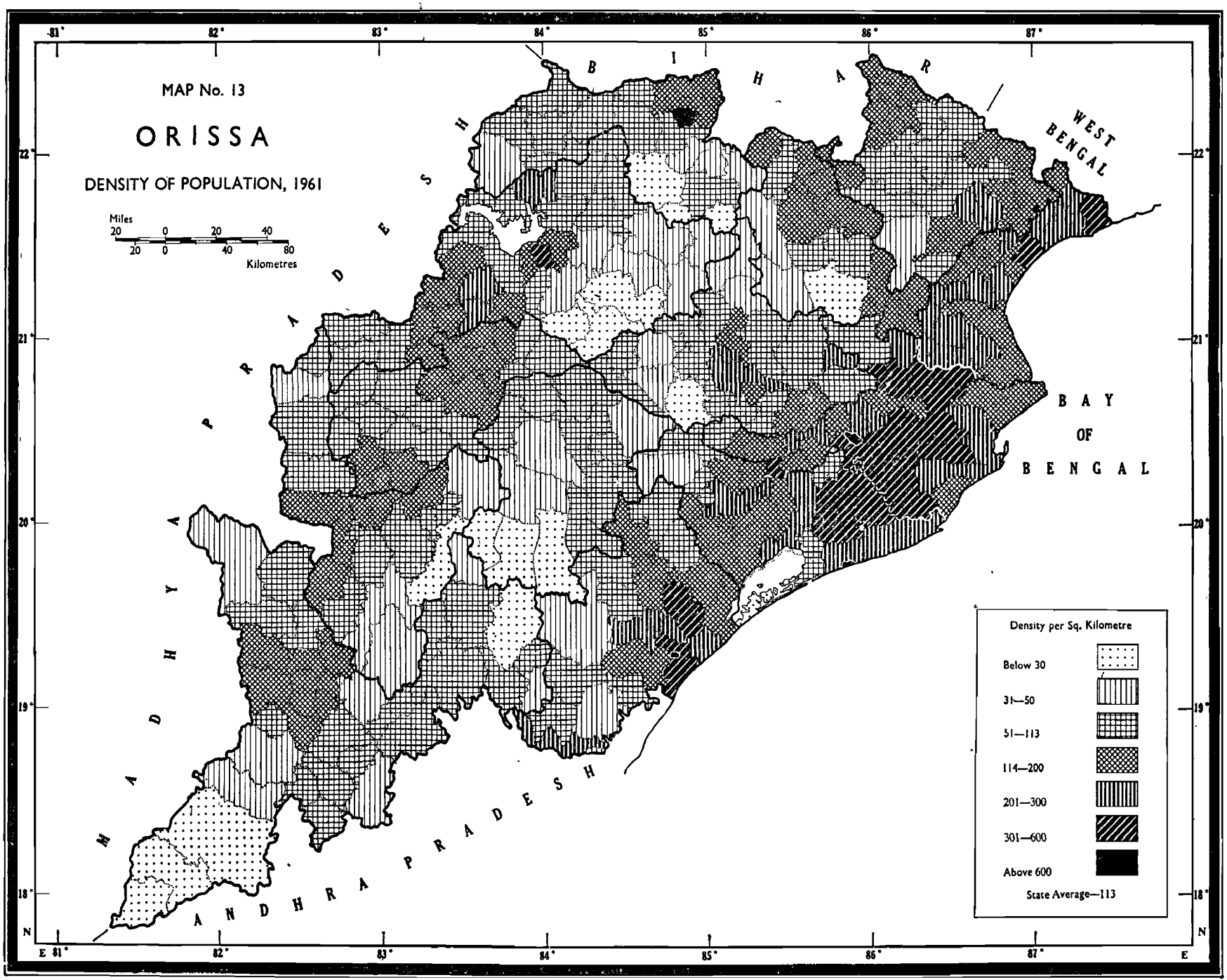
DISTRIBUTION OF POPULATION, 1961

The map gives a picture of the distribution of population, both rural and urban. The rural population is represented by one black dot for 5,000 persons, while the extent of urban population is indicated by red spheres of varying sizes corresponding to the bulk of the population of each town. The map further enables the study of distribution of population against the back-ground of physiography, particularly the river basins and the hill contours.

The coastal areas are thickly populated. The richness of the soil formed by alluvial loam deposited in the deltaic region by a large number of rivers accounts for the heavy concentration of population in this region. Most of the towns are concentrated in the coastal districts of Balasore, Cuttack, Puri and Ganjam and also along the northwestern fringe, particularly in Sundargarh and Sambalpur districts. Development of several large scale industries and mining activities have resulted in the establishment of the towns in the northwestern part.

The concentration of rural population is also marked in the above-mentioned regions, namely, in the coastal belt from Berhampur to Balasore and in the northwestern portion of the State from Jeypore to Rourkela. The Hirakud Dam with its extensive canal system has contributed to the agricultural prosperity in a portion of this belt.

The sparsely populated areas form the central belt of the State extending from south of Koraput to central portion of Keonjhar and Mayurbhanj, passing through the table-lands of Ganjam and Baudh-Khondmals and portions of Dhenkanal, Sambalpur and Sundargarh. In this belt agriculture is comparatively less prosperous on account of poor soil conditions and industries have not developed due to lack of exploitation of natural resources and absence of proper communication facilities.


MAP No. 13
ORISSA
DENSITY OF POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Density per Sq. Kilometre
Below 30
31—50
51—113
114—200
201—300
301—600
Above 600
State Average—113
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 13

DENSITY OF POPULATION, 1961

The map shows the variation in density of population per square kilometre, calculated for each police station and displayed in seven different shades ranging from low to very high to depict the variation. It brings out significant regional differences.

The average density of population in Orissa is 292 persons per square mile, as against 358 for India. Among the States in India, Kerala has the highest density, namely, 1,127 followed by West Bengal which has 1,021, and the States which are at the bottom are Rajasthan having 153 and Jammu and Kashmir having 66 persons per square mile. The density of population in Orissa is below the average for India. In terms of square kilometre, the density of the State is 113 persons.

The disparity in high and low density in different localities of the State is striking. Examining the position with regard to rural areas only, it appears that Gobindpur PS in Cuttack district has 533 persons as against only 13 persons per sq. km. in Motu PS of Koraput district.

The fertile coastal districts of Balasore, Cuttack, Puri and Ganjam are quite thickly populated in contrast with the sparsely populated areas of Koraput, Kalahandi, Baudh-Khondmals and portions of Sambalpur district. Density of population roughly corresponds to the fertility of agricultural lands and facilities for irrigation. Another factor responsible for increasing the density of population is the industrial development now taking place in many localities of the northern districts. The industrial towns have high density. Even the rural areas surrounding such towns have thick population, sometimes extending to 500 persons per sq. km. In short, the density is high in agriculturally prosperous areas of the coastal region and in industrially developed localities in the north, while the density is low in south, west and central parts of the State, particularly the portion through which runs the Eastern Ghats.

The following statement gives the density of population in the districts of Orissa:

State/ District	Area in sq. km.	Population	Density per sq. km.
ORISSA	155,844·9	17,548,846	113
Kalahandi	13,097·6	1,009,654	77
Koraput	25,690·1	1,498,271	58
Sambalpur	17,520.3	1,508,686	86
Bolangir	8,836·0	1,068,686	121
Baudh-Khondmals	11,090·4	514,427	46
Ganjam	12,237·8	1,872,530	153
Sundargarh	9,810·9	758,617	77
Dhenkanal	10,945·4	1,028,935	94
Puri	10,472·3	1,865,439	178
Keonjhar	8,330·7	743,315	89
Cuttack	10,903·9	3,060,320	281
Mayurbhanj	10,416·4	1,204,043	116
Balasore	6,493·1	1,415,923	218

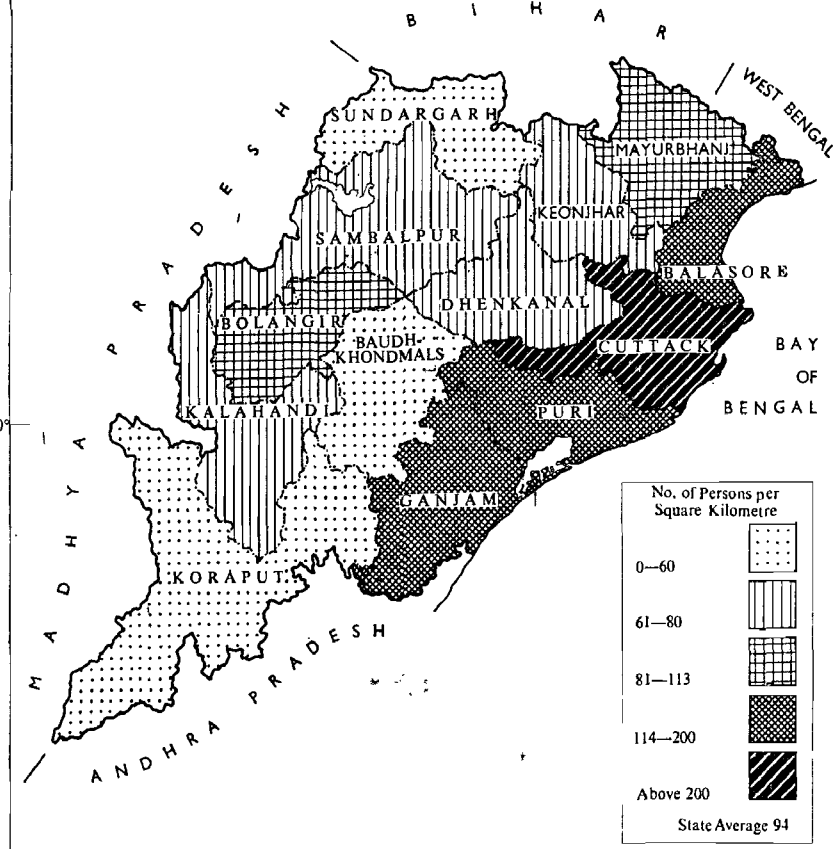
MAP No. 14

ORISSA

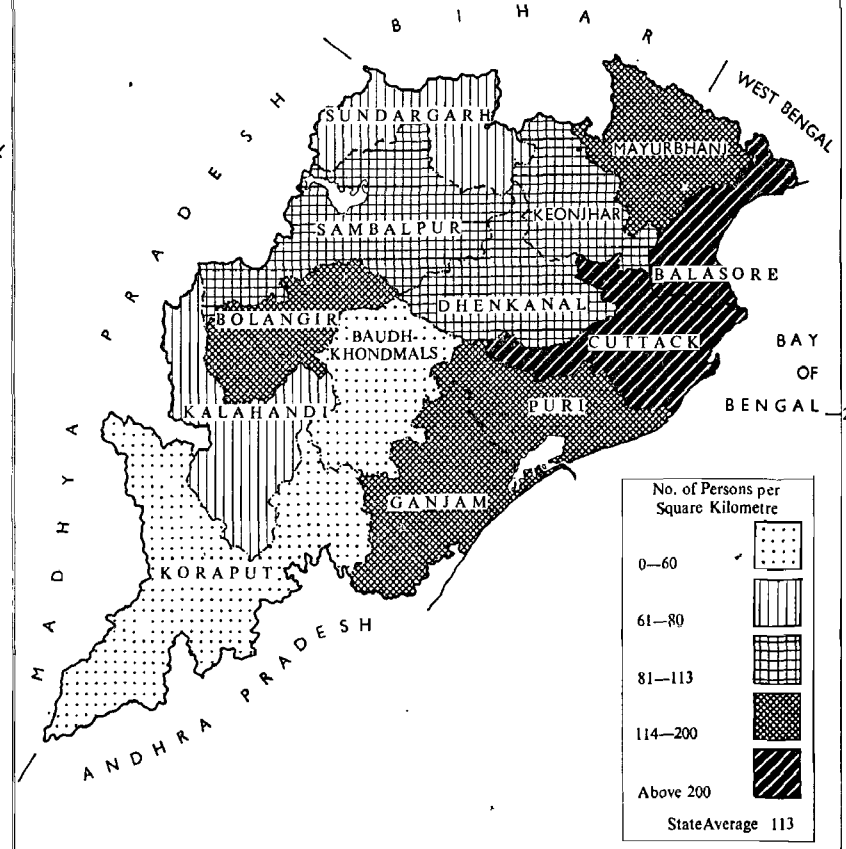
CHANGING PATTERN OF DENSITY OF POPULATION, 1951—61

Miles 32 0 32 64
32 0 32 64 96 128 Kilometres

Density of Population, 1951



Density of Population, 1961



MAP No. 14

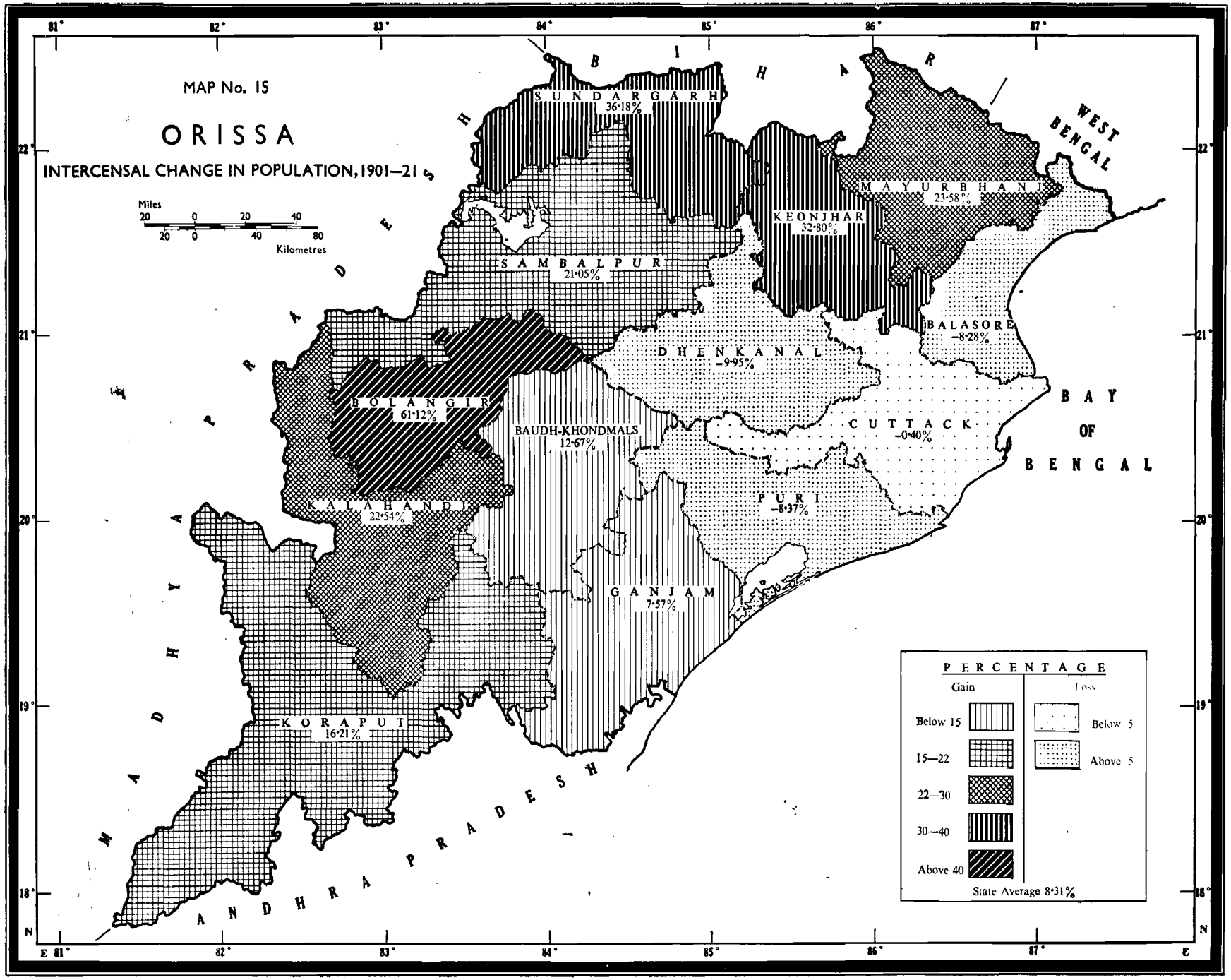
CHANGING PATTERN OF DENSITY OF POPULATION, 1951—61

The density of population of a region is indicated by the ratio between population and area. This twin map depicts the changes in the districtwise density of population between 1951 and 1961. Five different shades have been used to grade the density, ranging from low to high.

Orissa has a lower density of population than the national average. In the year 1951, the State average was 94 persons per sq. km. which improved to 113 persons per sq. km. in 1961 as against the national average of 116 and 138 persons per sq. km. in 1951 and 1961 respectively. During the decade, the overall pattern of the distribution of population in the State has changed. As will appear from the maps, noticeable changes in the density of population have occurred in the districts of Sambalpur, Bolangir, Sundargarh, Dhenkanal, Keonjhar, Mayurbhanj and Balasore. During 1951, Sundargarh had very low density, viz., 0—60 persons per sq. km. whereas by 1961 the density increased to 61—80 mark. Sambalpur, Dhenkanal and Keonjhar districts saw a change in the density of population which increased from low (61—80) to medium (81—113) range. Bolangir and Mayurbhanj districts achieved the density of 114—200 range in 1961, which was 81—113 in 1951. Balasore district, similarly, had an increase in the density from 114—200 persons per sq. km. over 200 persons per sq. km. The rest of the six districts continued to have the same density as it was a decade back. The lowest density of 41 persons per sq. km. in Baudh-Khondmals in 1951 increased to 46 persons in 1961, while the highest density of 232 persons per sq. km. in the district of Cuttack increased to 281 persons per sq. km. The low increase in the density of districts, Baudh-Khondmals, Koraput and Kalahandi, may be attributed to lack of adequate economical development.

The statement below gives the changes in the density of population during the decade 1951-61 :

State/ District	Area in sq. km.	Population (in thousands)		Density per sq. km.	
		1951	1961	1951	1961
ORISSA	155,844·9	14,645·9	17,548·8	94	113
Kalahandi	13,097·6	858·7	1,009·6	66	77
Koraput	25,690·1	1,269·5	1,498·2	49	58
Sambalpur	17,520·3	1,301·8	1,508·6	74	86
Bolangir	8,836·0	917·8	1,068·6	104	121
Baudh-Khondmals	11,090·4	456·8	514·4	41	46
Ganjam	12,237·8	1,624·8	1,872·5	133	153
Sundargarh	9,810·9	552·2	758·6	56	77
Dhenkanal	10,945·4	839·2	1,028·9	77	94
Puri	10,472·3	1,572·2	1,865·4	150	178
Keonjhar	8,330·7	588·4	743·3	71	89
Cuttack	10,903·9	2,529·2	3,060·3	232	281
Mayurbhanj	10,416·4	1,028·8	1,204·0	99	116
Balasore	6,493·1	1,106·0	1,415·9	170	218


MAP No. 15
ORISSA
INTERCENSAL CHANGE IN POPULATION, 1901—21
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
36·18%
MAYURBHANJ
23·58%
KEONJHAR
32·80%
SAMBALPUR
21·05%
BALASORE
–8·28%
DHENKANAL
–9·95%
BOLANGIR
61·12%
BAUDH-KHONDMALS
12·67%
CUTTACK
–0·40%
KALAHANDI
22·54%
PURI
–8·37%
GANJAM
7·57%
KORAPUT
16·21%
PERCENTAGE
Gain
Loss
Below 15
15—22
22—30
30—40
Above 40
Below 5
Above 5
State Average 8·31%
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 15

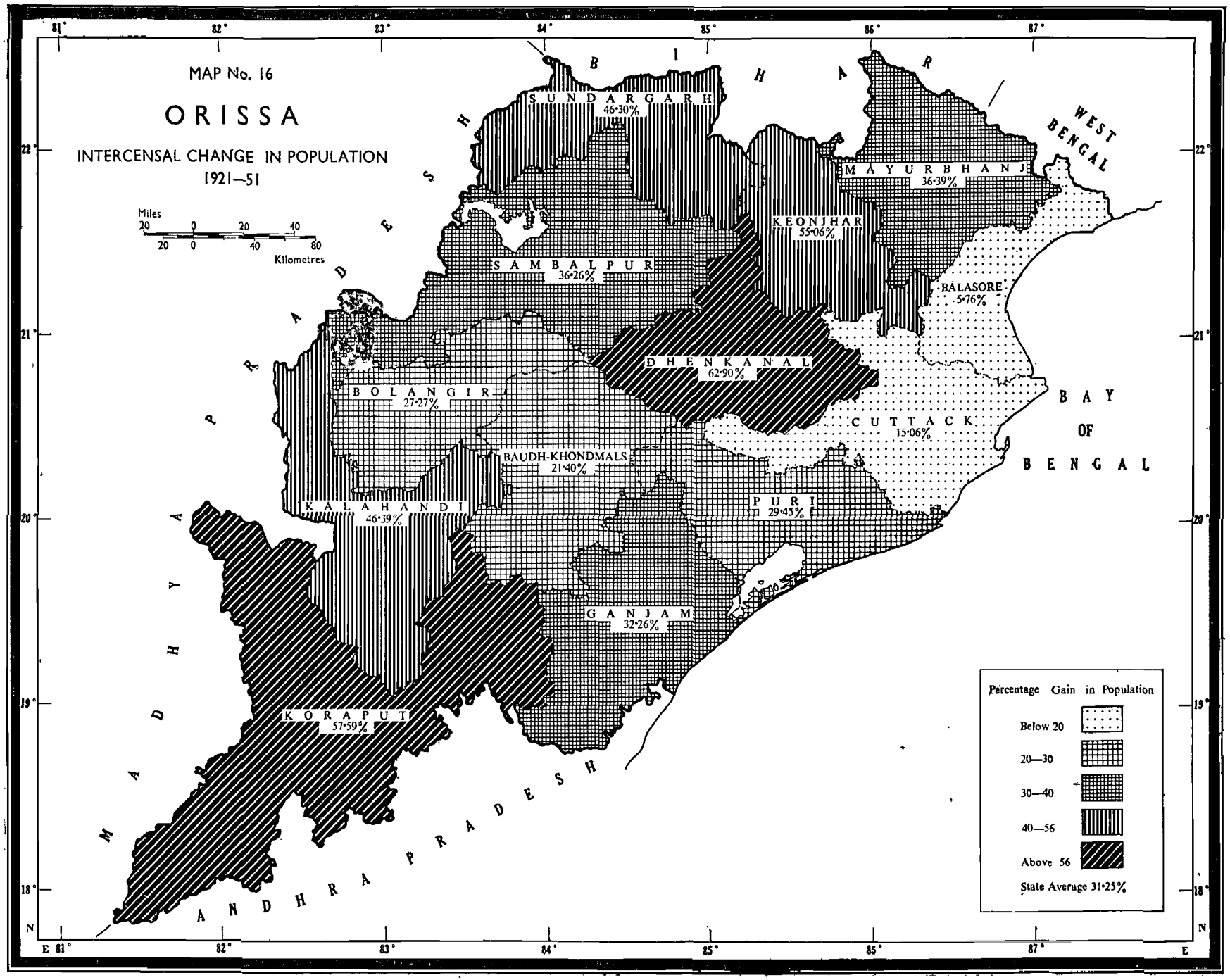
INTERCENSAL CHANGES IN POPULATION, 1901—21

The map represents the change that affected the size of population in districts between the years 1901 and 1921. The increase or decrease of population has been shown in the form of percentage change. The year 1921 was selected, because it marks an important juncture in the population growth in Orissa. Prior to that year, the growth was sporadic, characterised by wide variations in rate, and was particularly affected by the disastrous epidemic, influenza of 1918, which carried away nearly a third of Orissa's population. After the year 1921, a period of markedly fast growth of population sets in.

The percentage gain in population of some districts has been shown in five different hatchings in black from high to low whereas the loss of population suffered by other districts is shown in red screen in two shades. Thus in all, there are seven different ranges above and below the State average.

The intercensal change in population of Orissa between 1901 and 1921 is (+) 8·31 per cent which is the average of the gains and losses accruing to different districts during the period of 20 years. The gains range from (+) 7·57 per cent in case of Ganjam to (+) 61·12 per cent in case of Bolangir while the losses vary from (–) 0·4 per cent in case of Cuttack to (–) 9·95 per cent in case of Dhenkanal. There are four districts, viz., Dhenkanal, Puri, Balasore and Cuttack, which constitute the losing zone. The remaining nine districts show gain (in percentage) in varying scale as shown in the statement below:

State/ District	Population (in thousands)		Percentage of change
	1901	1921	
ORISSA	10,302·9	11,158·5	+ 8·31
Kalahandi	478·7	586·6	+22·54
Koraput	693·1	805·5	+16·21
Sambalpur	789·2	955·4	+21·05
Bolangir	447·6	721·2	+61·12
Baudh-Khondmals	334·0	376·3	+12·67
Ganjam	1,141·9	1,228·4	+ 7·57
Sundargarh	277·1	377·4	+36·18
Dhenkanal	572·0	515·1	– 9·95
Puri	1,325·5	1,214·5	– 8·37
Keonjhar	285·7	379·4	+32·80
Cuttack	2,207·0	2,198·1	– 0·40
Mayurbhanj	610·3	754·3	+23·58
Balasore	1,140·1	1,045·7	– 8·28


MAP No. 16
ORISSA
INTERCENSAL CHANGE IN POPULATION
1921—51
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
46·30%
MAYURBHANJ
36·39%
KEONJHAR
55·06%
SAMBALPUR
36·26%
BALASORE
5·76%
DHENKANAL
62·90%
BOLANGIR
27·27%
CUTTACK
15·06%
BAUDH-KHONDMALS
21·40%
KALAHANDI
46·39%
PURI
29·45%
GANJAM
32·26%
KORAPUT
57·59%
Percentage Gain in Population
Below 20
20—30
30—40
40—56
Above 56
State Average 31·25%
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 16

INTERCENSAL CHANGE IN POPULATION, 1921—51

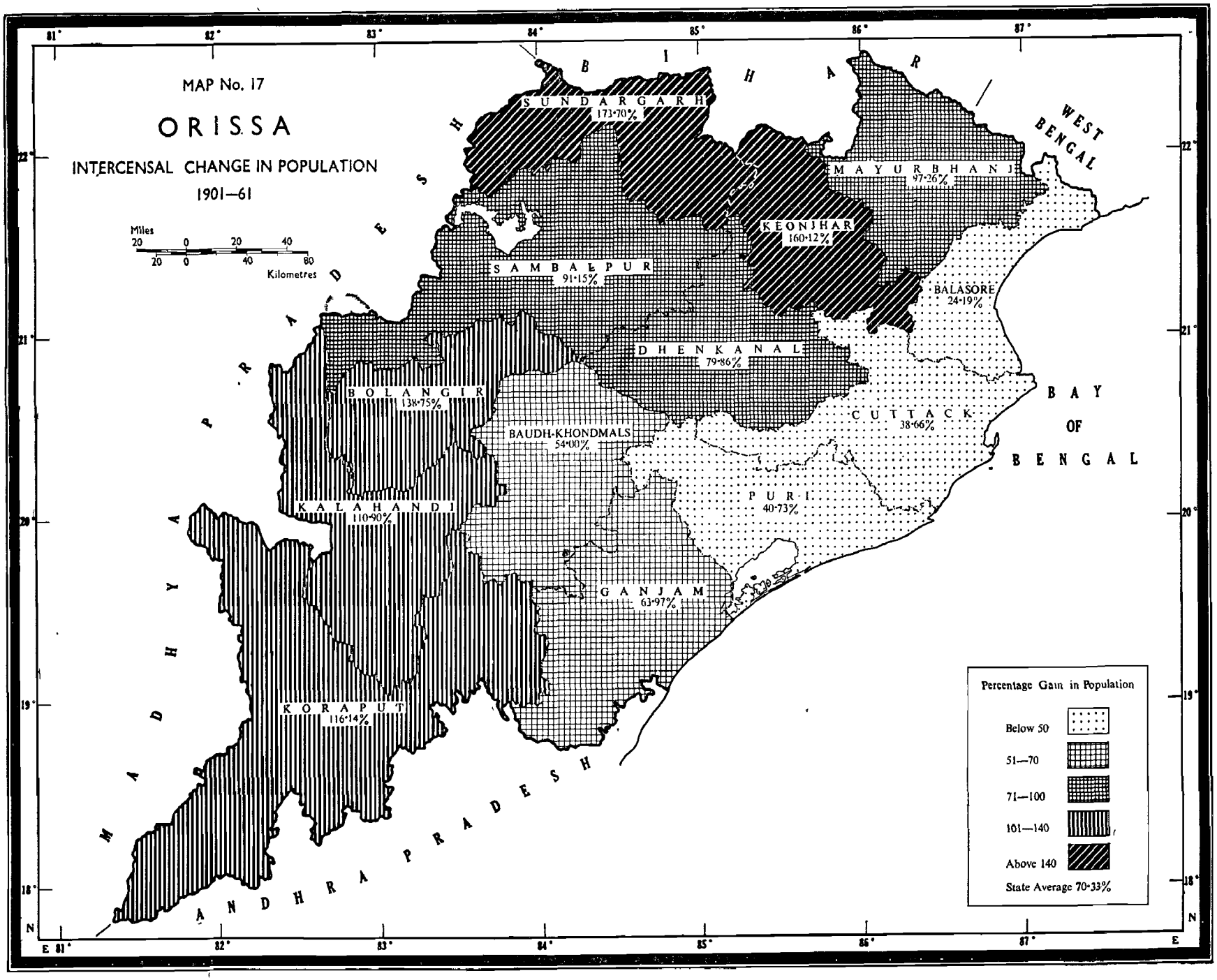
This map brings out the districtwise changes in the population, calculated in terms of percentage of gain during the period 1921—51. During this period there is no decrease of population in any district. On the other hand, there was unprecedented increase in most of the districts. Five different shades have been used to display the growth of population. The districts have been shaded from low to high corresponding to the increase.

The intercensal change in population of Orissa between 1921 and 1951 is measured in terms of percentage at (+) 31·25. During this period the position of all the districts improved by heavy gain of population, the highest being (+) 62·90 per cent in case of Dhenkanal. Other districts which are above (+) 45 per cent are Koraput, Keonjhar, Kalahandi and Sundargarh. The lowest gains were made by Balasore (+) 5·76 per cent and Cuttack (+) 15·06 per cent. It appears that Balasore had not adequately recovered from the after-effects of the devastating influenza epidemic of the previous decade and mortality from various other causes including scarcity of foodgrains.

A study of this map in continuation of Map No. 15 is interesting.

The statement below gives the percentage gain in population of different districts during the period of 30 years from 1921 to 1951:

State/ District	Population (in thousands)		Percentage of change
	1921	1951	
ORISSA	11,158·5	14,645·9	+31·25
Kalahandi	586·6	858·7	+ 46·39
Koraput	805·5	1,269·5	+ 57·59
Sambalpur	955·4	1,301·8	+ 36·26
Bolangir	721·2	917·8	+ 27·27
Baudh-Khondmals	376·3	456·8	+ 21·40
Ganjam	1,228·4	1,624·8	+ 32·26
Sundargarh	377·4	552·2	+46·30
Dhenkanal	515·1	839·2	+62·90
Puri	1,214·5	1,572·2	+29·45
Keonjhar	379·4	588·4	+55·06
Cuttack	2,198·1	2,529·2	+15·06
Mayurbhanj	754·3	1,028·8	+36·39
Balasore	1,045·7	1,106·0	+ 5·76


MAP No. 17
ORISSA
INTERCENSAL CHANGE IN POPULATION
1901—61
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
173·70%
MAYURBHANJ
97·26%
KEONJHAR
160·12%
SAMBALPUR
91·15%
BALASORE
24·19%
DHENKANAL
79·86%
BOLANGIR
138·75%
CUTTACK
38·66%
BAUDH-KHONDMALS
54·00%
PURI
40·73%
KALAHANDI
110·90%
GANJAM
63·97%
KORAPUT
116·14%
Percentage Gain in Population
Below 50
51—70
71—100
101—140
Above 140
State Average 70·33%
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 17

INTERCENSAL CHANGE IN POPULATION, 1901—61

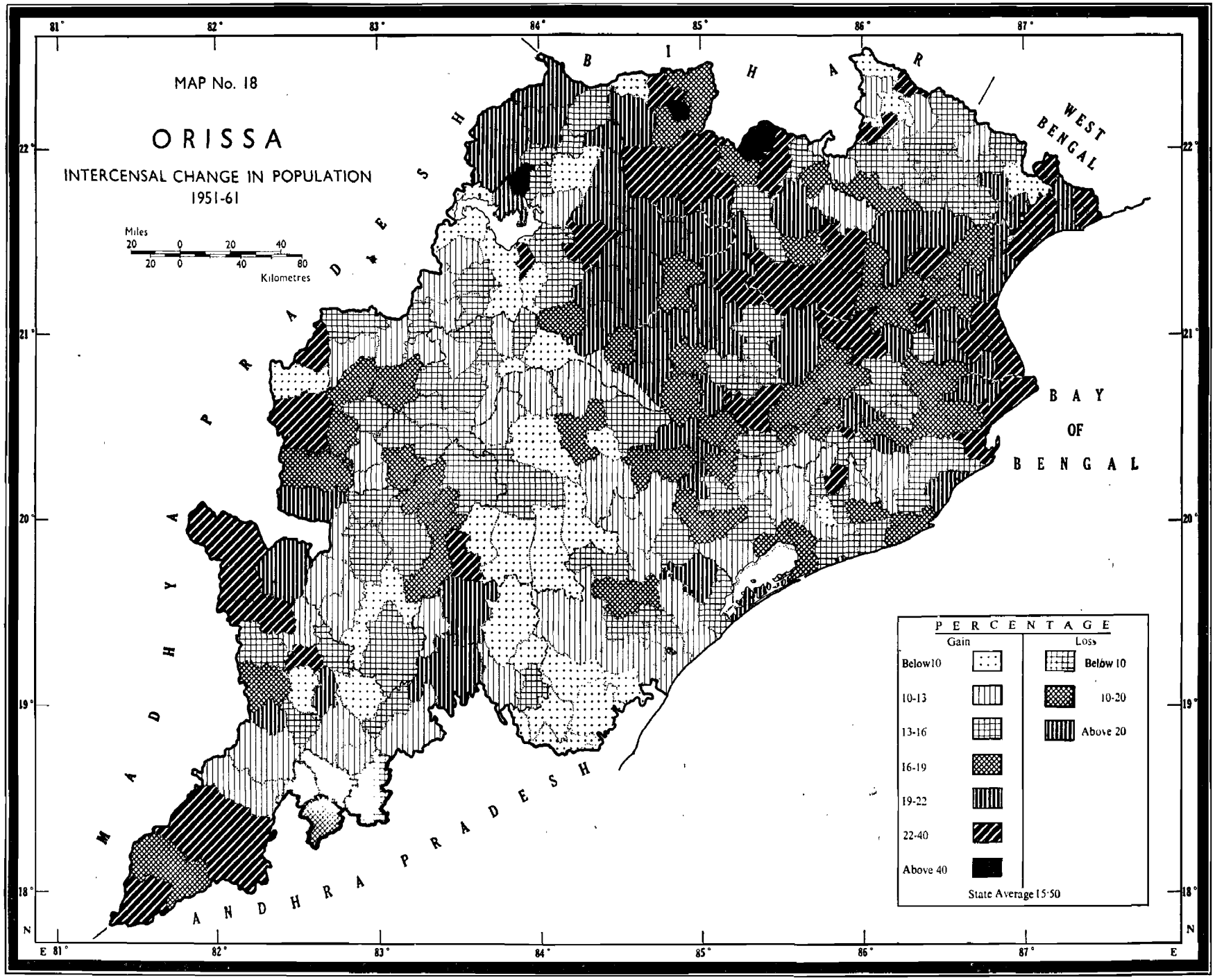
This map, akin to the preceding two maps (Map Nos. 15 and 16), brings out the district-wise changes in the population, calculated in terms of percentage of gain during the span of 60 years, from 1901 to 1961. During this period there is no decrease of population in any district. On the other hand, there has been notable increase in most of the districts. The percentage increase has been grouped into five ranges, viz., below 50 per cent, 51—70 per cent, 71—100 per cent, 101—140 per cent and over 140 per cent, and these ranges have been hatched in shades corresponding to the percentage increase from low to high.

The intercensal change in population of Orissa during these 60 years is calculated in terms of percentage at 70·33. There has been some extent of increase in all the districts, the lowest being in the district of Balasore (24·19%) and the highest in the district of Sundargarh (173·70%). In case of Sundargarh, the high increase is due to the industrial development during the last decade, particularly relating to mining industry and steel factory. The districts of Balasore, Cuttack and Puri gained the lowest percentage of increase, while heavy gains were made, next to Sundargarh, by Keonjhar (160·12%) and Bolangir (138·75%) districts. The increase in the districts of Balasore, Cuttack, Puri, Ganjam and Baudh-Khondmals were below the State average which is 70·33 per cent.

A study of this map in continuation of Map Nos. 15 and 16 gives a better appreciation of the intercensal changes in population.

The statement below gives the percentage gain in population of different districts during the long period of 60 years from 1901 to 1961:

District	Population (in thousands)		Percentage of gain
	1901	1961	
Sundargarh	277·1	758·6	173·70
Keonjhar	285·7	743·3	160·12
Bolangir	447·6	1,068·6	138·75
Koraput	693·1	1,498·2	116·14
Kalahandi	478·7	1,009·6	110·90
Mayurbhanj	610·3	1,204·0	97·26
Sambalpur	789·2	1,508·6	91·15
Dhenkanal	572·0	1,028·9	79·86
State Average			70·33
Ganjam	1,141·9	1,872·5	63·97
Baudh-Khondmals	334·0	514·4	54·00
Puri	1,325·5	1,865·4	40·73
Cuttack	2,207·0	3,060·3	38·66
Balasore	1,140·1	1,415·9	24·19


MAP No. 18
ORISSA
INTERCENSAL CHANGE IN POPULATION
1951-61
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE
Gain
Loss
Below10
10-13
13-16
16-19
19-22
22-40
Above 40
Below 10
10-20
Above 20
State Average 15·50
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

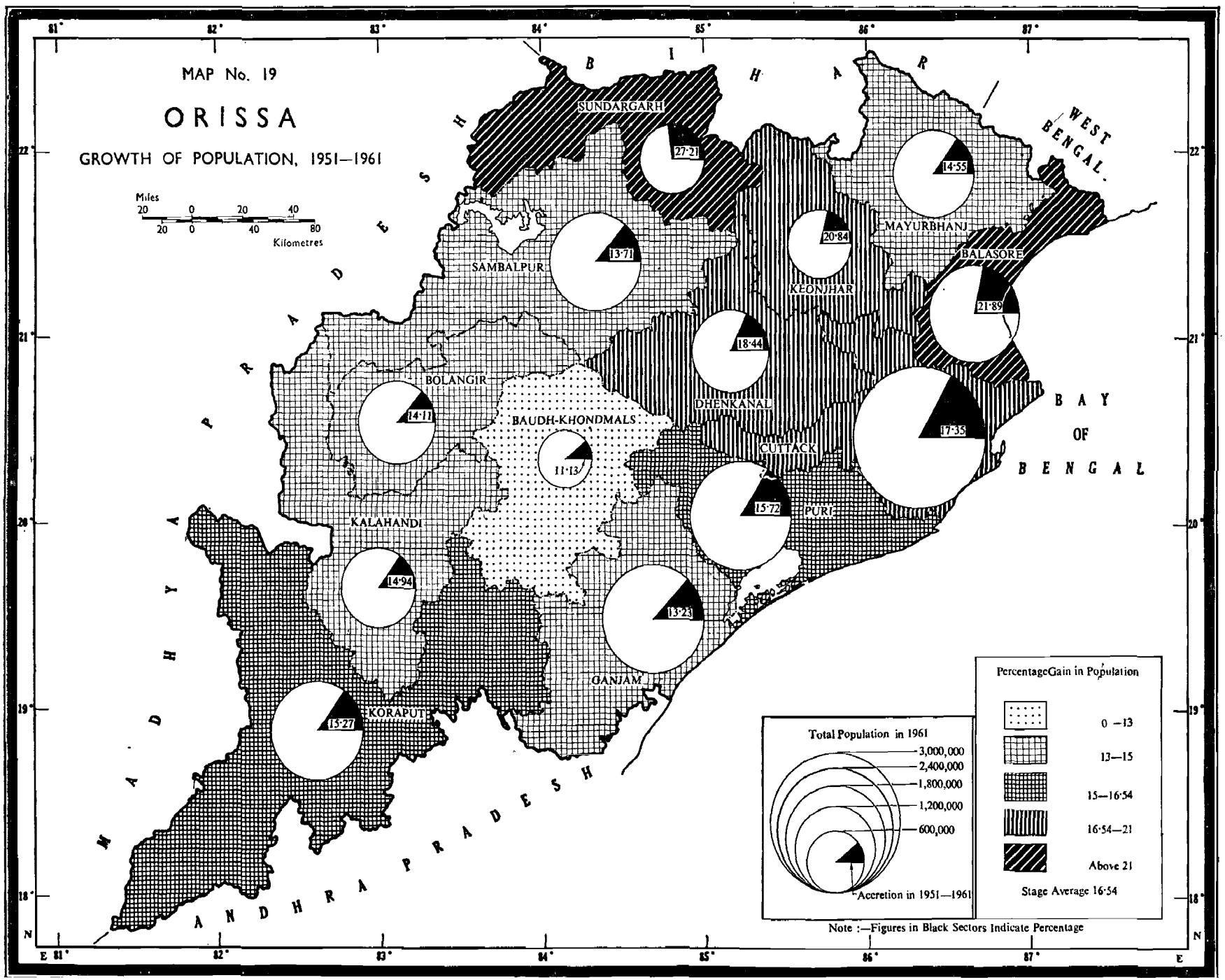
MAP No. 18

INTERCENSAL CHANGE IN POPULATION, 1951–61

(PS-wise)

The map depicts the change in population during the decade 1951-61. The population growth has been calculated for all the police stations in percentage. The increase of population is grouped into seven ranges, viz., below 10 per cent, 10—13 per cent, 13—16 per cent, 16—19 per cent, 19—22 per cent, 22—40 per cent and above 40 per cent, from very low to very high accordingly. The police stations falling under these groups are hatched in black corresponding to their percentage increase of population. The police stations which lost population during the decade are hatched in red shades from low to high, viz., up to 10 per cent, 10 to 20 per cent and above 20 per cent.

There has been some extent of gain in population in all the police stations excepting the police stations of Lakhanpur in the district of Sambalpur and Padwa, Dasamantapur, Machkund, Pottangi and Nandapur in Koraput district where the loss is (–) 21·76 per cent, (–) 13·04 per cent, (–) 5·23 per cent, (–) 4·52 per cent, (–) 2·22 per cent and (–) 0·03 per cent respectively. The police stations of Rourkela, Barbil and Brajarajnagar have the maximum increase with 480·18 per cent, 122·14 per cent and 71·97 per cent respectively. The police stations having the lowest increase are Gudari (2·04%) in Koraput district, Rengali (2·26%) in Sambalpur district, Raiboga (3·94%) in Sundargarh district and Attabira (4·27%) in Sambalpur district. In general the police stations in the districts of Balasore, Keonjhar, Sundargarh and parts of Dhenkanal and Mayurbhanj districts have experienced a high level increase of population during the decade. On the other hand, most of the police stations in the districts of Koraput, Baudh-Khondmals, Bolangir and Sambalpur have undergone comparatively low increase of population.


MAP No. 19
ORISSA
GROWTH OF POPULATION, 1951—1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
27·21
SAMBALPUR
13·71
MAYURBHANJ
14·55
BALASORE
21·89
KEONJHAR
20·84
DHENKANAL
18·44
BOLANGIR
14·11
BAUDH-KHONDMALS
11·13
CUTTACK
17·35
PURI
15·72
KALAHANDI
14·94
GANJAM
13·23
KORAPUT
15·27
Total Population in 1961
3,000,000
2,400,000
1,800,000
1,200,000
600,000
Accretion in 1951—1961
PercentageGain in Population
0 —13
13—15
15—16·54
16·54—21
Above 21
Stage Average 16·54
Note :—Figures in Black Sectors Indicate Percentage
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 19

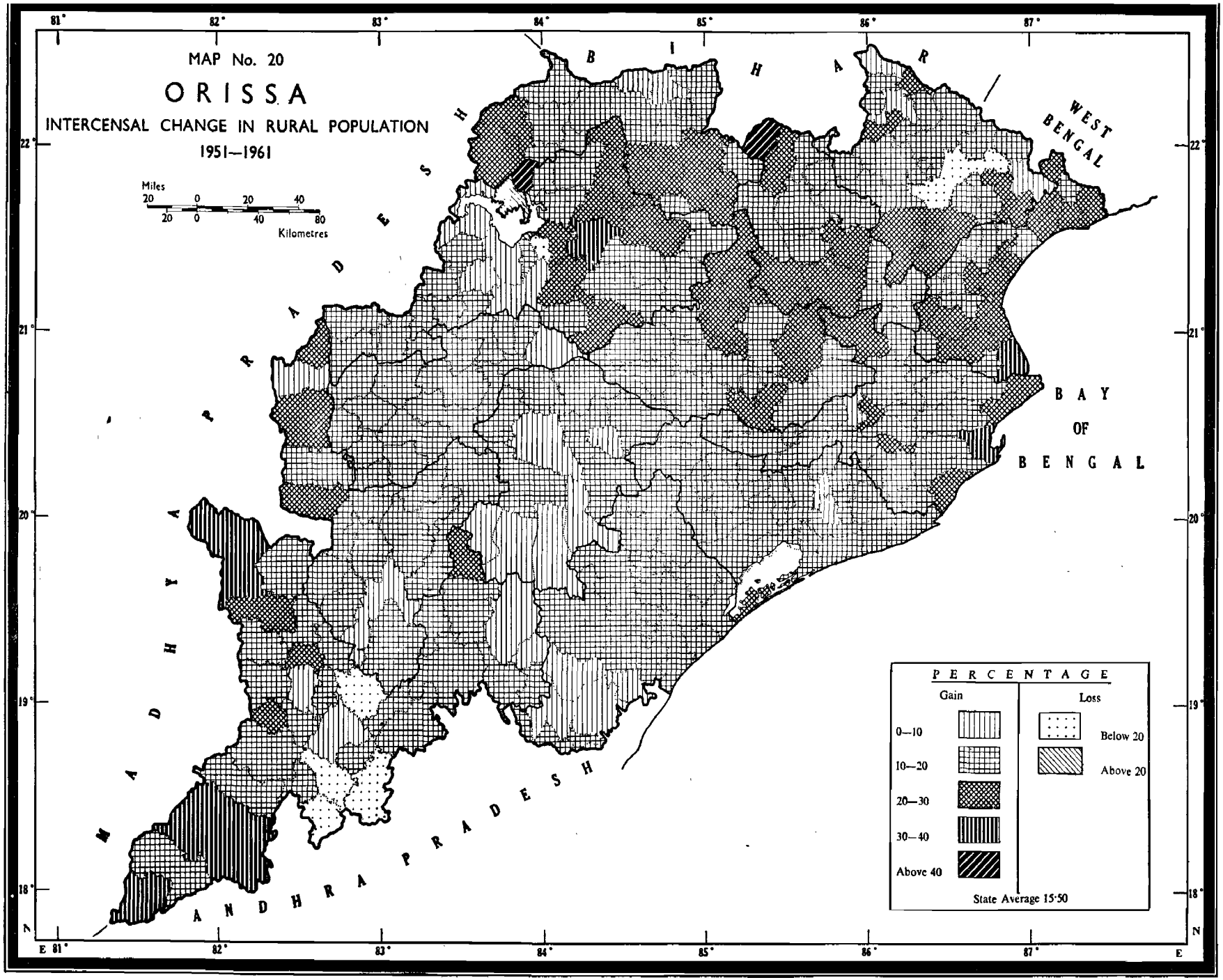
GROWTH OF POPULATION, 1951—61

The map represents the growth of population in the districts of Orissa between the two Censuses of 1951 and 1961. The growth of population in all the districts has been measured in percentage and hatched in five different shades ranging from low to high. The ranges of percentage increase is 0—13 per cent, 13—15 per cent, 15—16·54 per cent, 16·54 per cent to 21 per cent and above 21 per cent. The increase in population between 1951—61 is further shown by pie-diagrams. Taking 1961 population as 100 per cent, the sectors drawn in each pie-circle and shaded in black are proportionate to the percentage increase of population in 1961 over that of 1951.

The population of Orissa increased from 146·4 lakhs in 1951 to 175·4 lakhs in 1961. The rate of population growth during the decade in terms of percentage is 16·54, which is well below the all-India average of 17·78 per cent. The lowest increase in the district of Baudh-Khondmals (11·18%) while the highest increase is in the district of Sundargarh (27·21%). The districts surpassing the State average are Sundargarh (27·21%), Dhenkanal (18·44%), Keonjhar (20·84%), Cuttack (17·35%) and Balasore (21·89%). The increase in the rest of the 8 districts is below 16·54 per cent, the State average.

The statement below gives the growth of population during the decade 1951-61. The districts have been arranged in descending order of percentage increase, with a demarcation to indicate the State average:

District	Population (in thousands)		Percentage increase
	1961	1951	
Sundargarh	758·6	552·2	27·21
Balasore	1,415·9	1,106·0	21·89
Keonjhar	743·3	588·4	20·84
Dhenkanal	1,028·9	839·2	18·44
Cuttack	3,060·3	2,529·2	17·35
State Average			16·54
Puri	1,865·4	1,572·2	15·72
Koraput	1,498·2	1,269·5	15·27
Kalahandi	1,009·6	858·7	14·94
Mayurbhanj	1,204·0	1,028·8	14·55
Bolangir	1,068·6	917·8	14·11
Sambalpur	1,508·6	1,301·8	13·71
Ganjam	1,872·5	1,624·8	13·23
Baudh-Khondmals	514·4	456·8	11·18

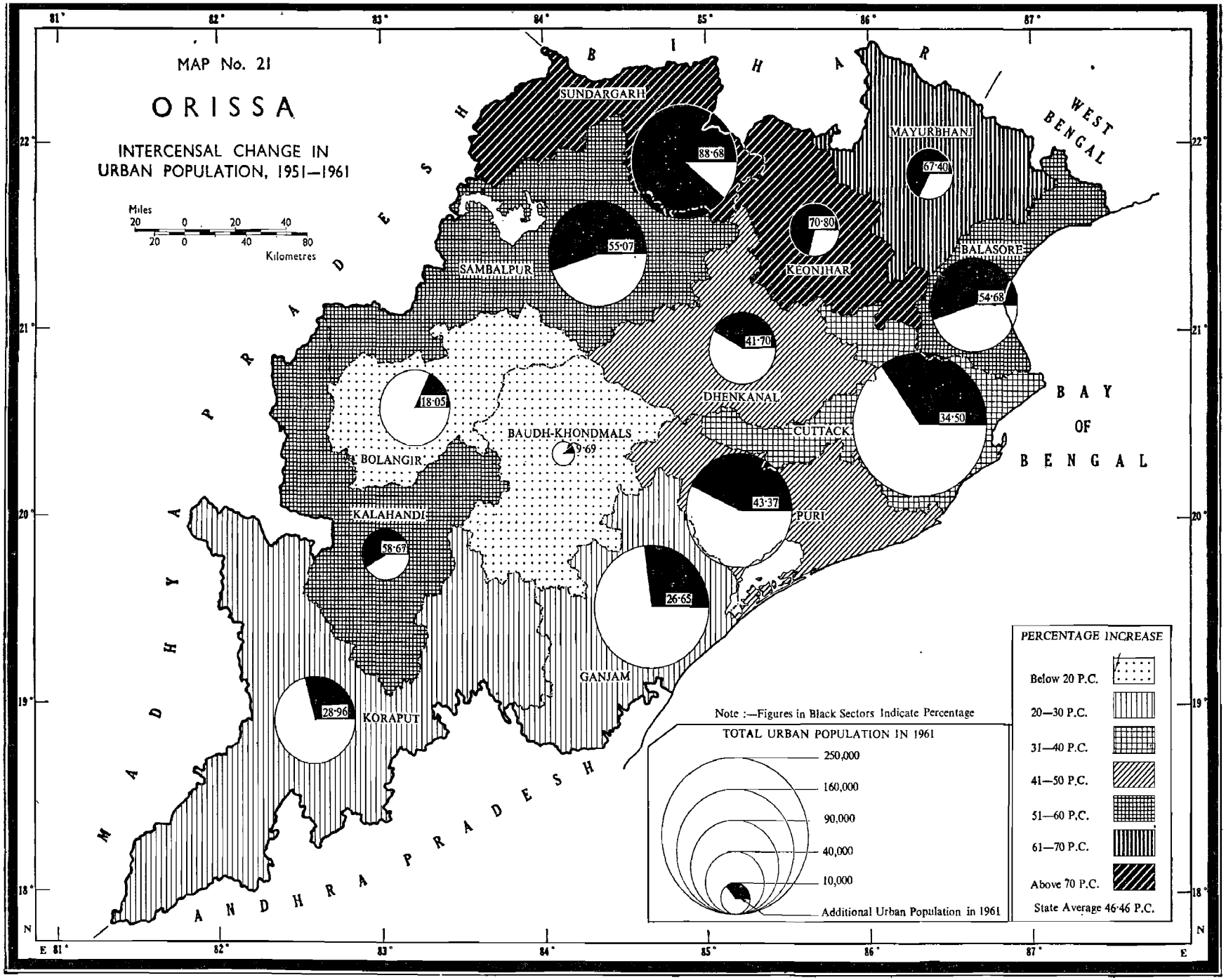

MAP No. 20
ORISSA
INTERCENSAL CHANGE IN RURAL POPULATION
1951—1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE
Gain
Loss
0—10
10—20
20—30
30—40
Above 40
Below 20
Above 20
State Average 15·50
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 20

INTERCENSAL CHANGE IN RURAL POPULATION, 1951–61

The map depicts the change in rural population from 1951 to 1961. The increase of rural population in different police stations has been calculated on percentage basis and divided into 5 different groups from 0—10 per cent, 10—20 per cent, 20—30 per cent, 30—40 per cent and above 40 per cent. These 5 ranges from low to high percentage have been hatched in black in respective areas. The police stations affected by decrease of rural population have been shown in red, in two ranges, firstly below 20 per cent and secondly 20 per cent and above.

The highest gain in rural population is found in the police stations of Barbil (139·65%) and Brajarajnagar (68·87%) because of rise in labour requirements in mines and factories. The lowest gains are made by the police stations of Gudari 2·04 per cent (Koraput district), Rengali 2·26 per cent (Sambalpur district), Birmitrapur 2·58 per cent (Sundargarh district) and Jatni 2·44 per cent (Puri district), probably because of *status quo* in economic and progressive fields. On the other hand, the maximum decrease of population is seen in the police stations of Hirakud (25·37%) and Lakhanpur (21·76%). The main reason for such heavy decrease of rural population in these localities may be attributed to the evacuation that was made when the Hirakud dam and the reservoir were constructed The lowest loss in population is found in Nandapur police station in Koraput district, amounting to 0·03 per cent only.


MAP No. 21
ORISSA
INTERCENSAL CHANGE IN URBAN POPULATION, 1951—1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
MAYURBHANJ
KEONJHAR
BALASORE
DHENKANAL
CUTTACK
BAUDH-KHONDMALS
BOLANGIR
KALAHANDI
PURI
GANJAM
KORAPUT
88·68
55·07
67·40
70·80
54·68
41·70
34·50
18·05
9·69
43·37
58·67
26·65
28·96
Note :—Figures in Black Sectors Indicate Percentage
TOTAL URBAN POPULATION IN 1961
250,000
160,000
90,000
40,000
10,000
Additional Urban Population in 1961
PERCENTAGE INCREASE
Below 20 P.C.
20—30 P.C.
31—40 P.C.
41—50 P.C.
51—60 P.C.
61—70 P.C.
Above 70 P.C.
State Average 46·46 P.C.
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 21

INTERCENSAL CHANGE IN URBAN POPULATION, 1951–61

The map brings out the extent of increase in urban population in each of the districts during the decade 1951-61. The total urban population of each district in 1961 is shown by circles proportionate to the bulk of the urban population. There has been no decrease of urban population in any district. The increase of urban population in 1961, over that of 1951 is represented by black sectors inside the circles. Such increase has been worked out taking 1961 population as 100 and by finding the difference between population of 1961 and 1951. The percentage increase above and below the State average has been shown in the districts concerned in seven different shades from high to low.

Cuttack district has the largest urban population, namely, 208,597, while Baudh-Khondmals has the lowest, namely, 6,088. But the highest increase in urban population during the decade is achieved by Sundargarh which is 88·68 per cent. The lowest increase of 9·69 per cent is seen in the district of Baudh-Khondmals. The spectacular increase in Sundargarh is attributed to the growth of industrial centres like Rourkela, Rajgangpur and Birmitrapur. On the other hand, the geographical situation and topography of the district of Baudh-Khondmals, most parts of which are covered with masses of thickly-wooded hills, intersected by deep ravines and unbridged hill streams, having no proper communication facilities, has resulted in extremely poor growth of urban population in that district.

The statement below gives the urban population of all the districts with percentage increase during the decade 1951-61:

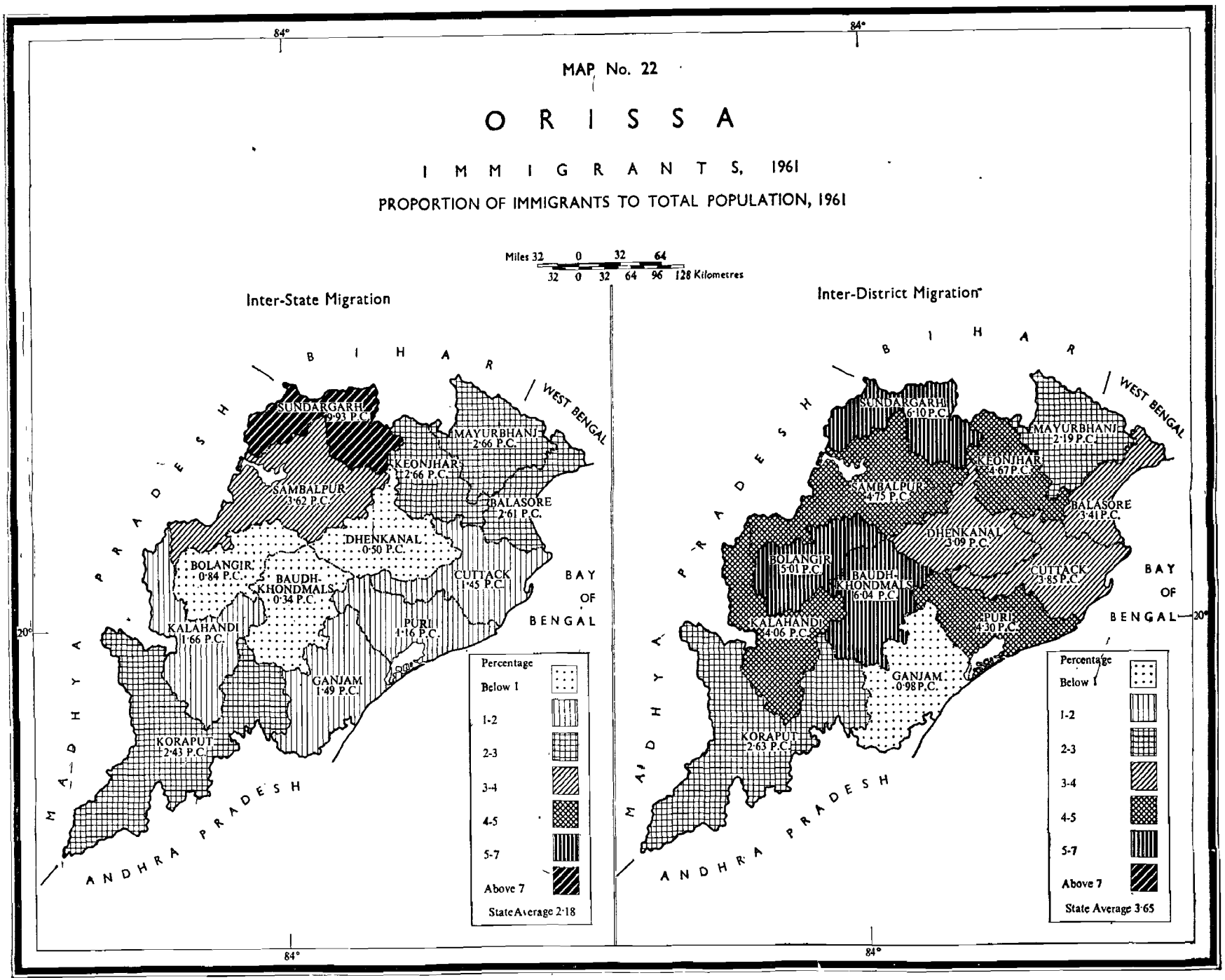
District	Urban population in		Increase during 1951-61
	1951	1961	
Sundargarh	15,367	135,760	88·68%
Keonjhar	9,343	31,964	70·80%
Mayurbhanj	9,277	28,420	67·40%
Kalahandi	11,807	28,573	58·67%
Sambalpur	51,838	115,375	55·07%
Balasore	41,646	91,905	54·68%
State Average			46·46%
Puri	75,544	133,406	43·37%
Dhenkanal	27,456	47,088	41·70%
Cuttack	136,630	208,597	34·50%
Koraput	54,658	76,971	28·96%
Ganjam	114,313	155,844	26·65%
Bolangir	40,693	49,659	18·05%
Baudh-Khondmals	5,498	6,088	9·69%

MAP No. 22

O R I S S A

I M M I G R A N T S, 1961

PROPORTION OF IMMIGRANTS TO TOTAL POPULATION, 1961



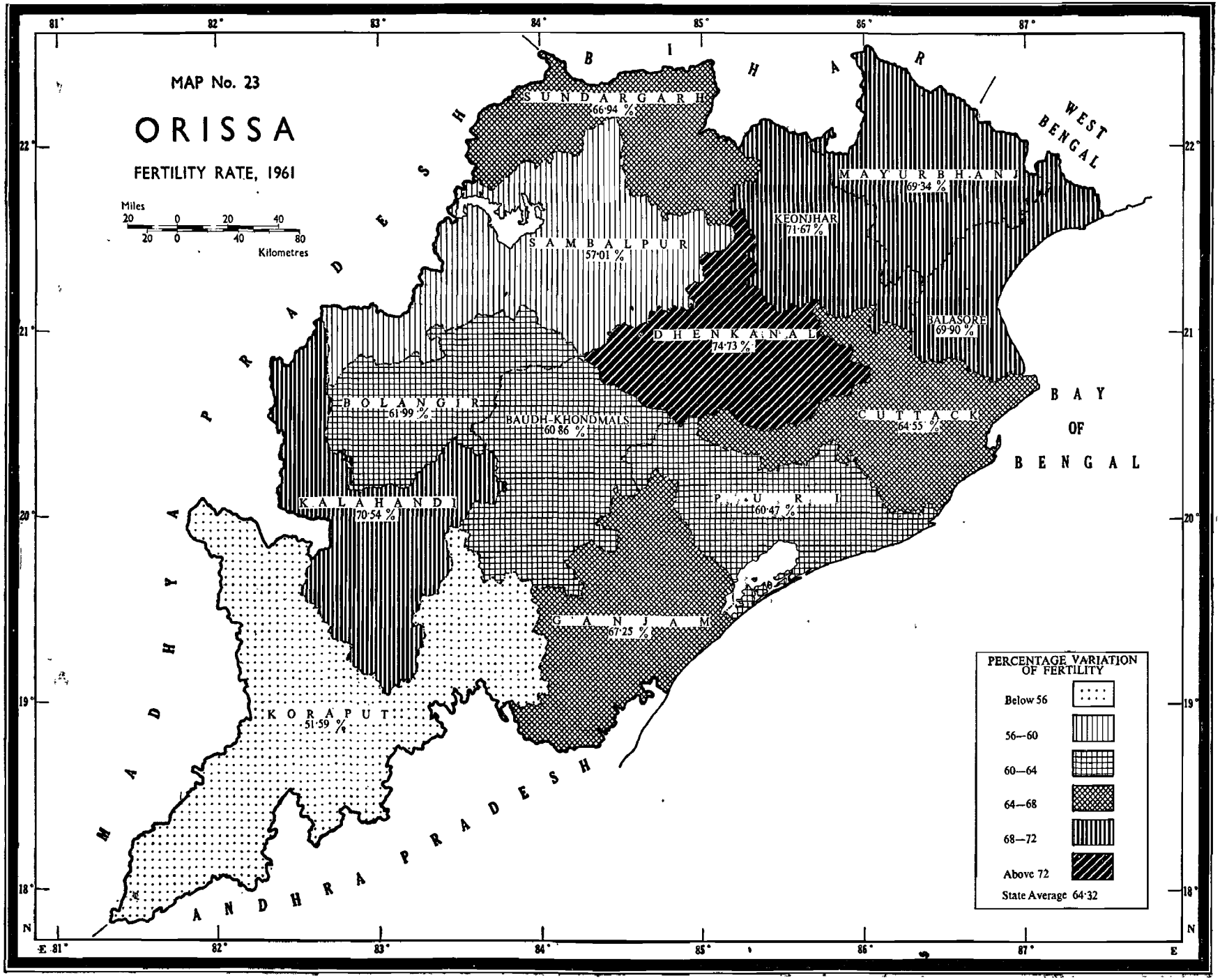
MAP No. 22

IMMIGRANTS

This twin map depicts the percentage of immigrants among the total population of districts in 1961. For purpose of this map, immigrants are divided into two categories, namely, inter-State or those coming from outside the State, and inter-district or those coming to a particular district from any other district within the State. The map on the left relates to the volume of inter-State immigration and the one to the right to inter-district immigration. The inward flow of migration has been calculated on percentage basis and divided into 7 ranges, from very low to very high, namely, 0 to 1, 1 to 2, 2 to 3, 3 to 4, 4 to 5, 5 to 7 and above 7 per cent.

The proportion of immigrants is the highest in Sundargarh district in both the maps, while it is the lowest in Baudh-Khondmals, Dhenkanal and Bolangir in the first map and in Ganjam in the second map. Heavy migration into the district of Sundargarh is attributed to the industrial growth in the district. The statement below gives the percentage of inter-State and inter-district immigrants:

State/ District	Population in 1961	Inter-State immigrants		Inter-District immigrants	
		No.	Percentage	No.	Percentage
ORISSA	17,548,846	381,869	2·18	640,675	3·65
Kalahandi	1,009,654	16,807	1·66	40,952	4·06
Koraput	1,498,271	36,476	2·43	39,358	2·63
Sambalpur	1,508,686	54,631	3·62	71,591	4·75
Bolangir	1,068,686	9,015	0·84	53,590	5·01
Baudh-Khondmals	514,427	1,757	0·34	31,054	6·04
Ganjam	1,872,530	27,955	1·49	18,425	0·98
Sundargarh	758,617	75,336	9·93	46,287	6·10
Dhenkanal	1,028,935	5,126	0·50	31,840	3·09
Puri	1,865,439	21,709	1·16	80,265	4·30
Keonjhar	743,315	19,764	2·66	34,679	4·67
Cuttack	3,060,320	44,239	1·45	117,914	3·85
Mayurbhanj	1,204,043	32,085	2·66	26,397	2·19
Balasore	1,415,923	36,969	2·61	48,323	3·41


MAP No. 23
ORISSA
FERTILITY RATE, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 66·94 %
SAMBALPUR 57·01 %
KEONJHAR 71·67 %
MAYURBHANJ 69·34 %
BALASORE 69·90 %
DHENKANAL 74·73 %
BOLANGIR 61·99 %
BAUDH-KHONDMALS 60·86 %
CUTACK 64·55 %
KALAHANDI 70·54 %
PURI 60·47 %
GANJAM 67·25 %
KORAPUT 51·59 %
PERCENTAGE VARIATION OF FERTILITY
Below 56
56—60
60—64
64—68
68—72
Above 72
State Average 64·32
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E

MAP No. 23

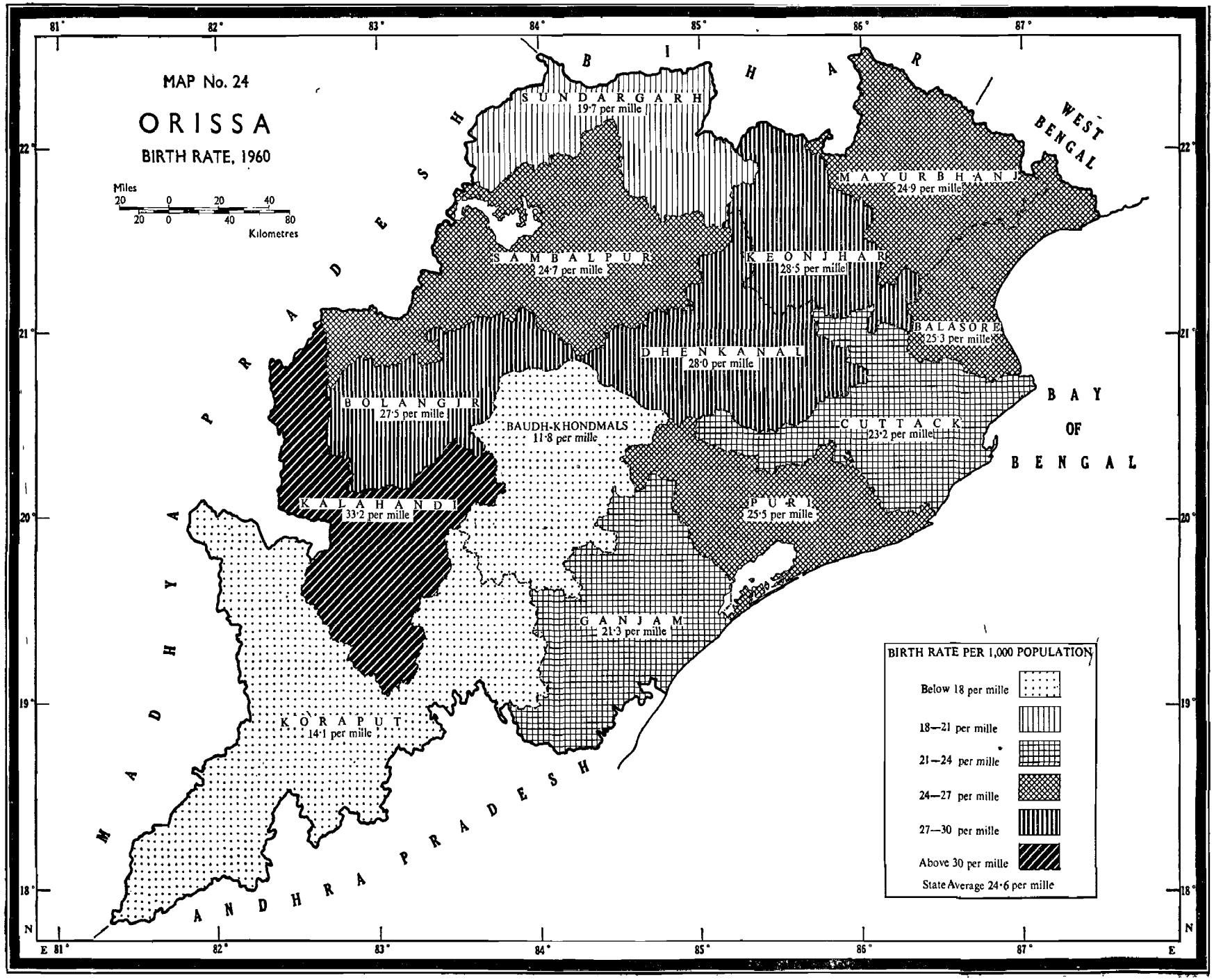
FERTILITY RATE, 1961

The map displays the proportion of children in the age-group 0—4 to the number of women in the age-group 15—44 or in other words, the fertility rate in the districts of Orissa. A ratio between the number of children up to the age of 4 years and the number of women in the age-group of 15—44 is calculated for each district separately. This ratio is expressed in percentage, ranging from low to very high, viz., below 56 per cent, 56—60 per cent, 60—64 per cent, 64—68 per cent, 68—72 per cent and above 72 per cent. The districtwise percentage of children (0—4) to the number of women in the age-group 15—44 is grouped into six ranges, above and below the State average (64·32 per cent). The districts have been hatched in the choropleth technique corresponding to the percentages.

In the State there are 2,486,967 children in the age-group 0 to 4, while the number of women in the reproductive span of life (namely, age-group 15—44) is 3,866,745. The State average stands at 64·32 per cent. The lowest rate of fertility is noticed in Koraput district (51·59 per cent) whereas Dhenkanal district has the highest fertility rate (74·73 per cent). The districts of Koraput, Sambalpur, Bolangir, Baudh-Khondmals and Puri have lower rate of fertility than the State average.

The following statement gives the fertility rate in percentage in the districts of Orissa:

District	Percentage of fertility
Dhenkanal	74·73
Keonjhar	71·67
Kalahandi	70·54
Balasore	69·90
Mayurbhanj	69·34
Ganjam	67·25
Sundargarh	66·94
Cuttack	64·55
State Average	64·32
Bolangir	61·99
Baudh-Khondmals	60·86
Puri	60·47
Sambalpur	57·01
Koraput	51·59


MAP No. 24
ORISSA
BIRTH RATE, 1960
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
19·7 per mille
MAYURBHANJ
24·9 per mille
SAMBALPUR
24·7 per mille
KEONJHAR
28·5 per mille
BALASORE
25·3 per mille
DHENKANAL
28·0 per mille
BOLANGIR
27·5 per mille
BAUDH-KHONDMALS
11·8 per mille
CUTTACK
23·2 per mille
KALAHANDI
33·2 per mille
PURI
25·5 per mille
GANJAM
21·3 per mille
KORAPUT
14·1 per mille
BIRTH RATE PER 1,000 POPULATION
Below 18 per mille
18—21 per mille
21—24 per mille
24—27 per mille
27—30 per mille
Above 30 per mille
State Average 24·6 per mille
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 24

BIRTH-RATE, 1960

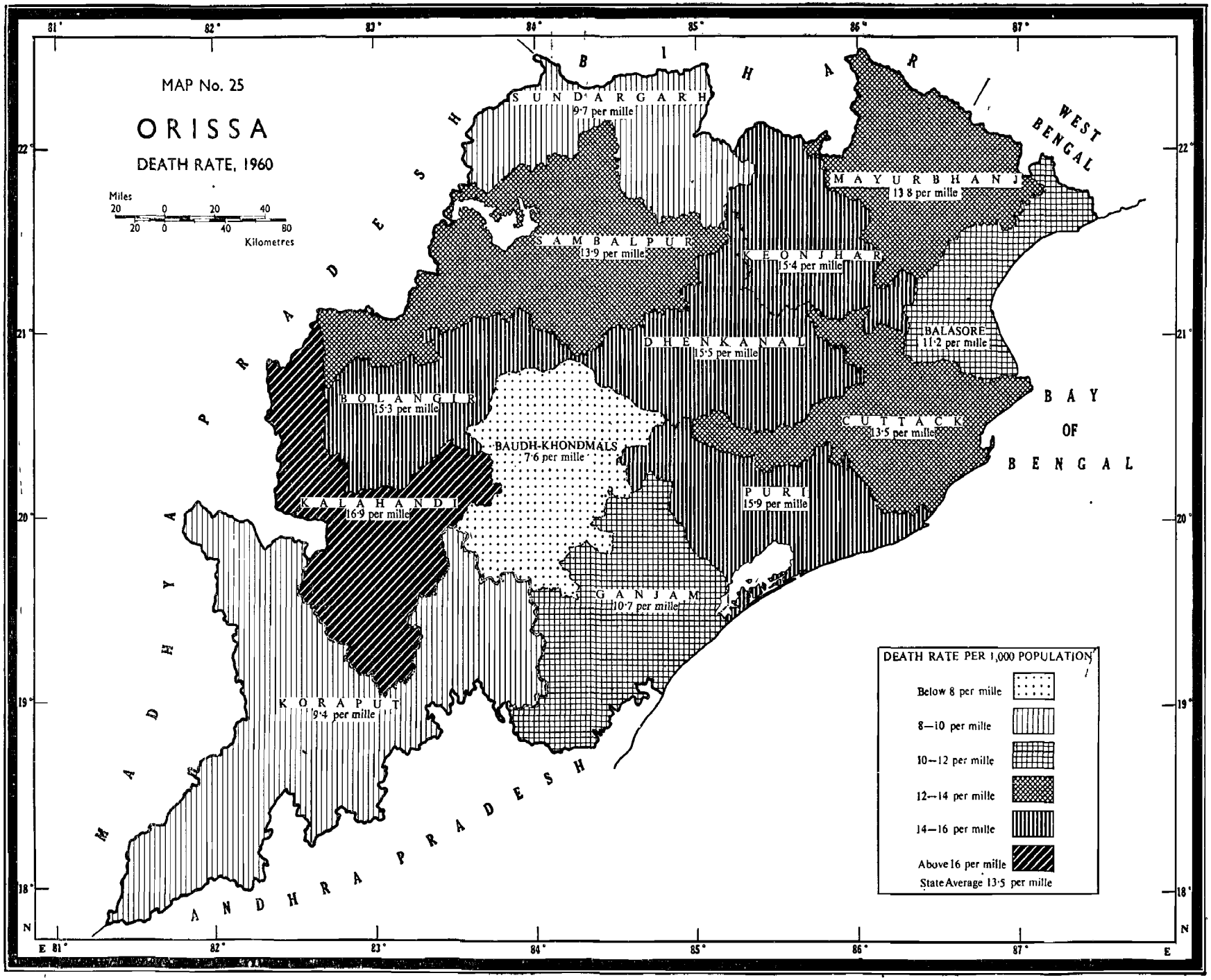
The map shows the rate of birth in the districts of Orissa in 1960. The rate of birth is expressed as the number of children born per thousand of population in the calendar year. The rates have been grouped into six divisions, namely, below 18, 18 to 21, 21 to 24, 24 to 27, 27 to 30 and above 30 per mille, and hatched in different shades in black from low to high.

The birth-rate has been presented in the map districtwise for the year 1960. The rate of birth is obtained by working out the ratio between the number of births during the year and the mid-year population of the Registration area. The lowest birth-rate has been recorded in the district of Baudh-Khondmals at 11·8, while the highest birth-rate has been reported from Kalahandi district which is 33·2 per mille. Keonjhar, Dhenkanal and Bolangir districts are next in order with a birth-rate of 28·5, 28·0 and 27·5 per thousand population respectively. The State average is 24·6 per mille. There are 5 districts, namely, Cuttack, Ganjam, Sundargarh, Koraput and Baudh-Khondmals which have a lower rate of birth than the State average.

The recorded vital statistics are known to be substantially incomplete almost everywhere in the State. The registration system is loose and not wholly dependable. There are many omissions in the primary report and there are chronic defaults in despatching returns. The data, however, are given below for whatever they are worth:

District	No. of births	Birth-rate per 1,000 population
Kalahandi	32,948	33·2
Keonjhar	20,778	28·5
Dhenkanal	28,245	28·0
Bolangir	28,936	27·5
Puri	46,773	25·5
Balasore	35,025	25·3
Mayurbhanj	29,471	24·9
Sambalpur	36,726	24·7
State Average		24·6
Cuttack	69,860	23·2
Ganjam	37,715	21·3
Sundargarh	14,587	19·7
Koraput	844	14·1
Baudh-Khondmals	6,011	11·8

Source — Vital Statistics of India for 1960 published by the Registrar General, India


MAP No. 25
ORISSA
DEATH RATE, 1960
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
9·7 per mille
MAYURBHANJ
13·8 per mille
SAMBALPUR
13·9 per mille
KEONJHAR
15·4 per mille
BALASORE
11·2 per mille
DHENKANAL
15·5 per mille
BOLANGIR
15·3 per mille
CUTTACK
13·5 per mille
BAUDH-KHONDMALS
7·6 per mille
PURI
15·9 per mille
KALAHANDI
16·9 per mille
GANJAM
10·7 per mille
KORAPUT
9·4 per mille
DEATH RATE PER 1,000 POPULATION
Below 8 per mille
8—10 per mille
10—12 per mille
12—14 per mille
14—16 per mille
Above 16 per mille
State Average 13·5 per mille
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 25

DEATH-RATE, 1960

The map illustrates the rate of death during the year 1960 for every 1,000 persons living in the Registration areas of the State. The ranges of death-rate are grouped into 6 divisions and have been hatched in black shades from low to high, namely, below 8, 8 to 10, 10 to 12, 12 to 14, 14 to 16 and above 16 per mille. Choropleth technique has been adopted to express the death-rate calculated districtwise.

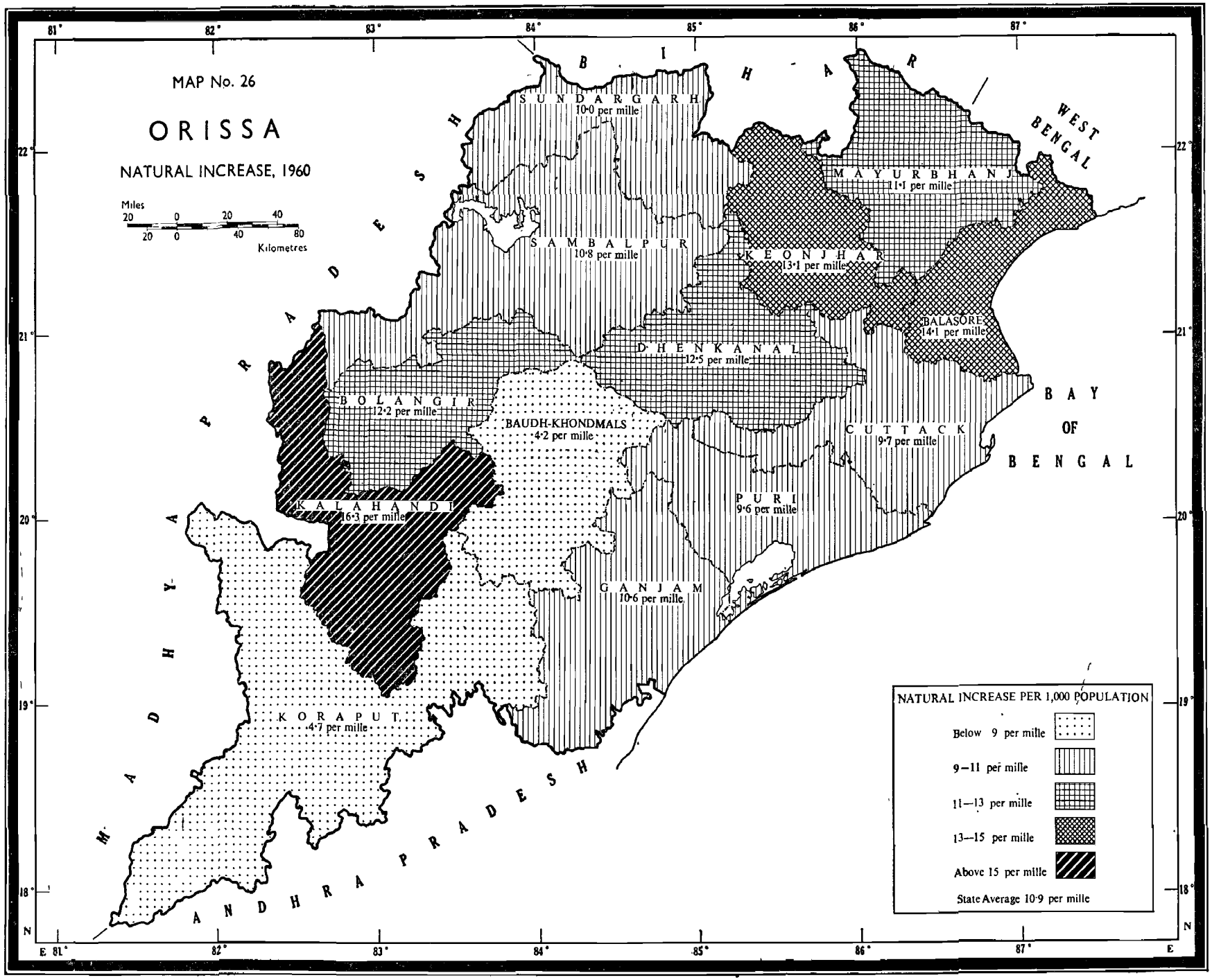
The observations with regard to the incomplete and faulty character of vital statistics as indicated in the Explanatory Note to the Birth-Rate Map No. 24 equally apply to the data relating to the rate of death. Even so, they have to be taken note of and studied for whatever they are worth.

The State average of death-rate is 13·5 persons per mille. Against this Koraput and Baudh-Khondmals districts have the lowest death-rate, namely, 9·4 and 7·6 while Kalahandi district has the highest rate of death with 16·9 persons per 1,000 population.

The statement below gives the death-rate in the districts of Orissa in 1960 :

District	No. of deaths	Death-rate per 1,000 population
Kalahandi	16,779	16·9
Puri	29,209	15·9
Dhenkanal	15,671	15·5
Keonjhar	11,224	15·4
Bolangir	16,094	15·3
Sambalpur	20,678	13·9
Mayurbhanj	16,318	13·8
Cuttack	40,643	13·5
Orissa State	212,676	13·5
Balasore	15,588	11·2
Ganjam	18,898	10·7
Sundargarh	7,157	9·7
Koraput	564	9·4
Baudh-Khondmals	3;853	7·6

Source — Vital Statistics of India for 1960 published by the Registrar General, India


MAP No. 26
ORISSA
NATURAL INCREASE, 1960
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
10·0 per mille
SAMBALPUR
10·8 per mille
MAYURBHANJ
11·1 per mille
KEONJHAR
13·1 per mille
BALASORE
14·1 per mille
DHENKANAL
12·5 per mille
BOLANGIR
12·2 per mille
BAUDH-KHONDMALS
4·2 per mille
CUTTACK
9·7 per mille
KALAHANDI
16·3 per mille
PURI
9·6 per mille
GANJAM
10·6 per mille
KORAPUT
4·7 per mille
NATURAL INCREASE PER 1,000 POPULATION
Below 9 per mille
9—11 per mille
11—13 per mille
13—15 per mille
Above 15 per mille
State Average 10·9 per mille
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 26

NATURAL INCREASE, 1960

The rates of births and deaths were treated separately in the two previous maps. The crude rate of natural increase is obtained by subtracting the death-rate from the birth-rate. As migration plays insignificant part, population growth is determined primarily by natural increase. In actual practice, however, this is not so, for in Orissa the rates of births and deaths are so unreal and the migration-cum-registration error is so intractable that the only sound basis of determining growth of population is derived from the results of decennial Census.

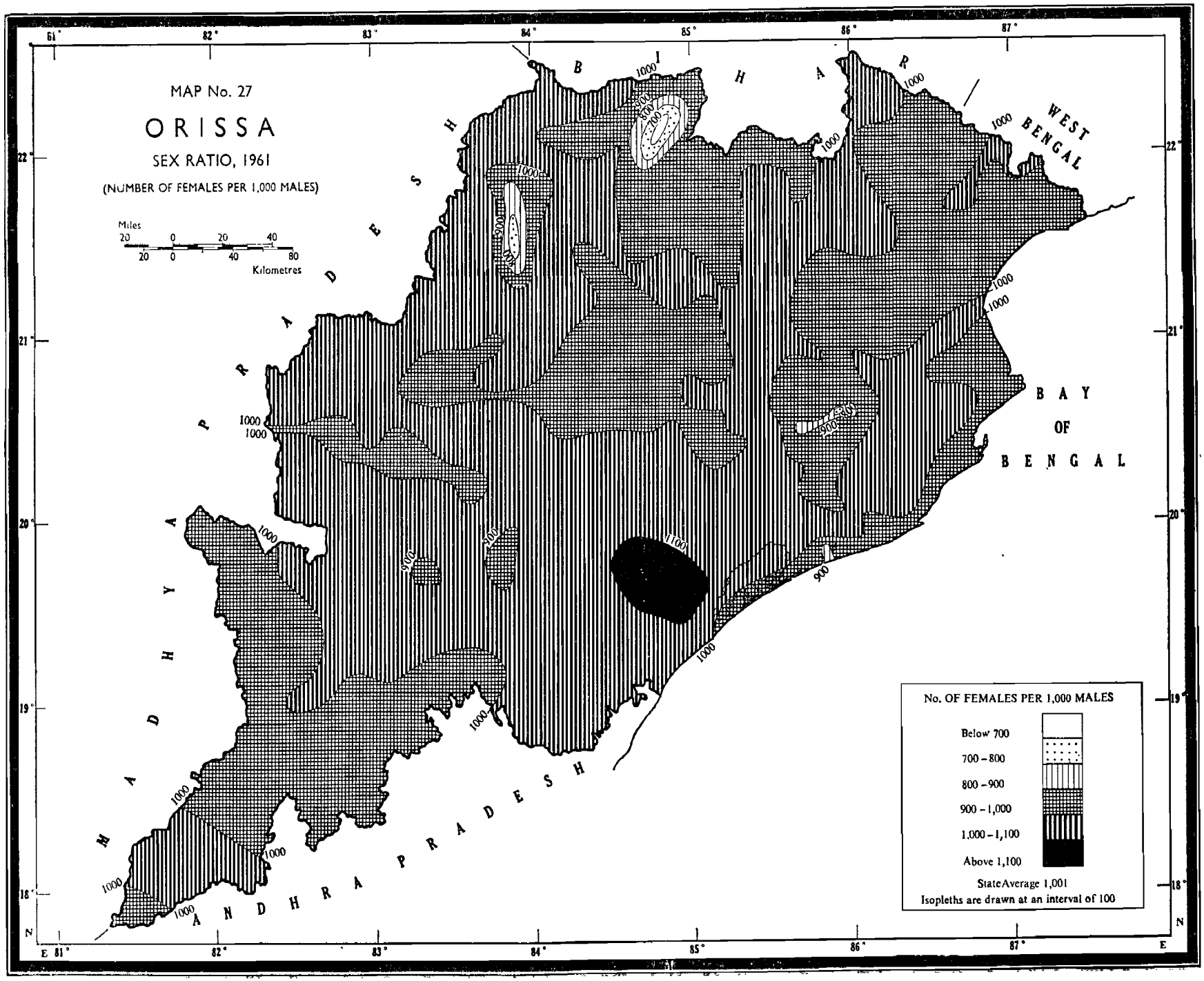
For purpose of the present map, the crude rate of natural increase has been worked out from the recorded birth and death-rates. Choropleth technique has been adopted to represent the rate of natural increase district-wise. The range of natural increase is grouped into five divisions and hatched in black shades ranging from low to high, namely, below 9, 9 to 11, 11 to 13, 13 to 15 and above 15 per mille.

There were 387,919 births and 212,676 deaths in the State during 1960. Working out the difference of these figures against the mid-year population of 1960, the natural increase appears to be at the rate of 11·1 persons for every 1,000 population. The lowest increase has been reported in the districts of Koraput and Baudh-Khondmals with 4·7 and 4·2 per mille respectively, whereas the highest increase is recorded in the district of Kalahandi with 16·3 persons per thousand population.

A study of this map with the preceding two maps indicates that Kalahandi tops the list among all the districts in birth-rate, death-rate as well as in natural increase in the year 1960. Other districts which are higher than the State average of 11·1 are Balasore, Keonjhar, Dhenkanal, Bolangir and Mayurbhanj.

The statement below indicates the rate of natural increase by districts:

District	Birth-rate	Death-rate	Rate of natural increase
Kalahandi	33·2	16·9	16·3
Balasore	25·3	11·2	14·1
Keonjhar	28·5	15·4	13·1
Dhenkanal	28·0	15·5	12·5
Bolangir	27·5	15·3	12·2
Mayurbhanj	24·9	13·8	11·1
Orissa State	24·6	13·5	11·1
Sambalpur	24·7	13·9	10·8
Ganjam	21·3	10·7	10·6
Sundargarh	19·7	9·7	10·0
Cuttack	23·2	13·5	9·7
Puri	25·5	15·9	9·6
Koraput	14·1	9·4	4·7
Baudh-Khondmals	11·8	7·6	4·2


MAP No. 27
ORISSA
SEX RATIO, 1961
(NUMBER OF FEMALES PER 1,000 MALES)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
No. OF FEMALES PER 1,000 MALES
Below 700
700 – 800
800 – 900
900 – 1,000
1,000 – 1,100
Above 1,100
State Average 1,001
Isopleths are drawn at an interval of 100

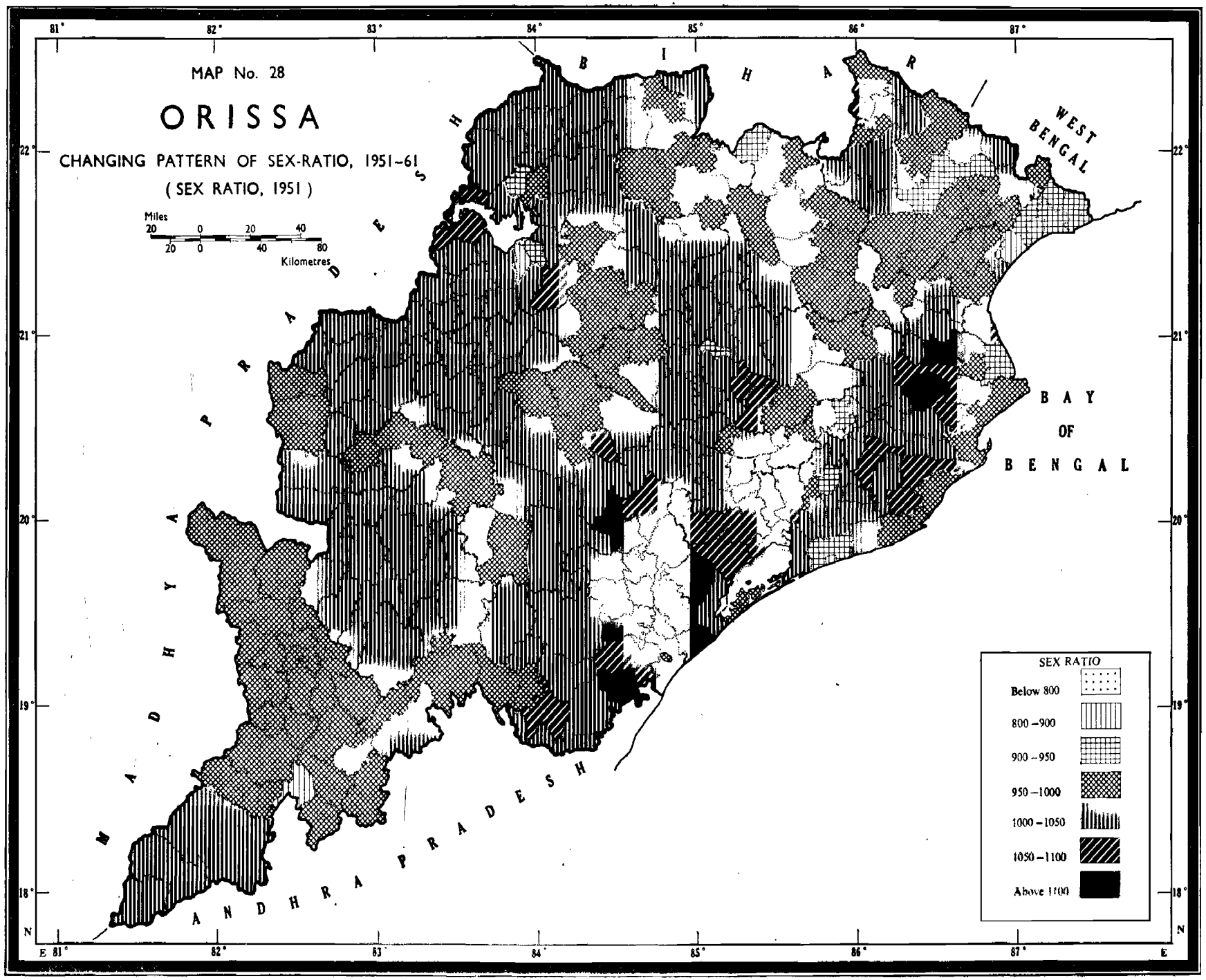
MAP No. 27

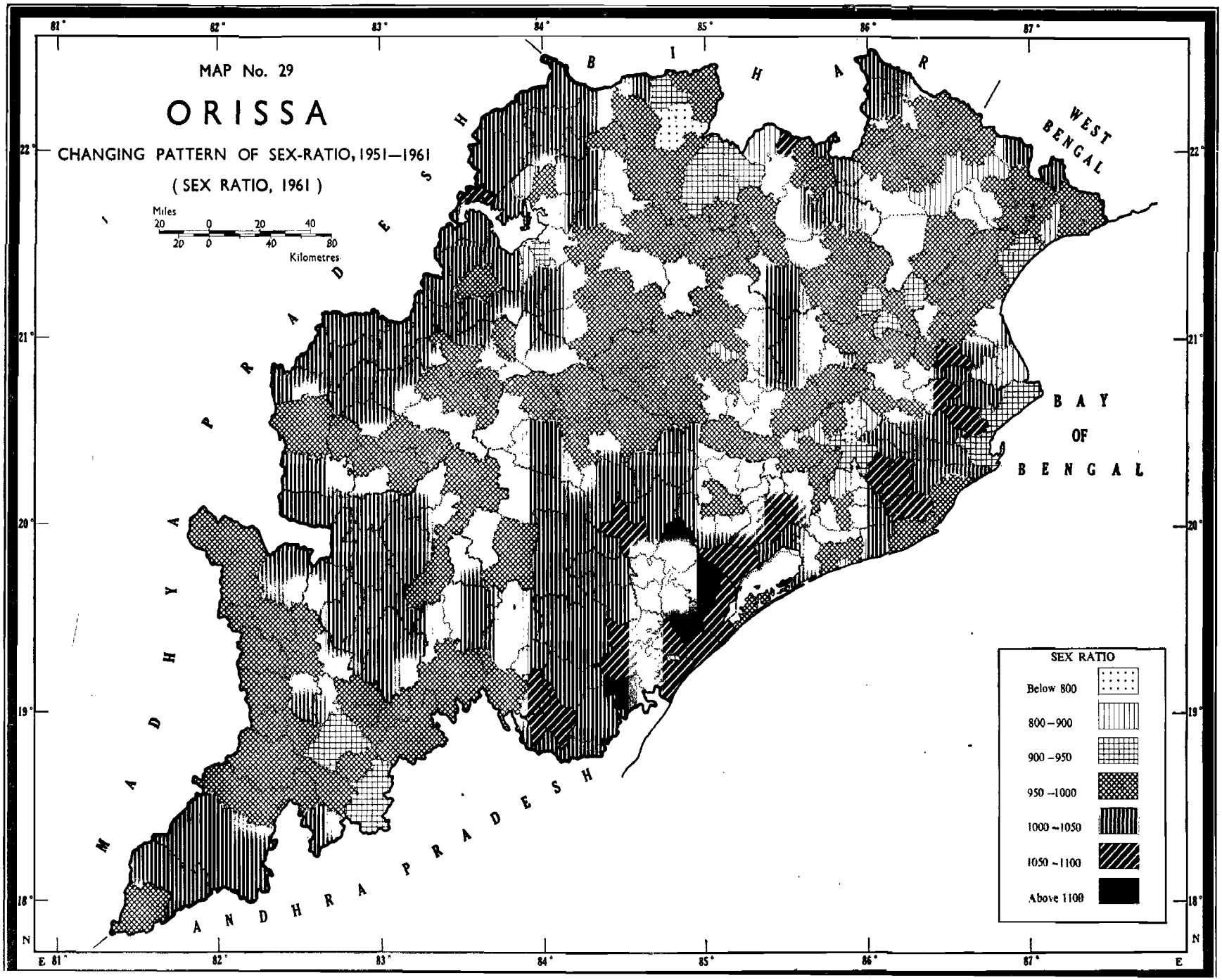
SEX RATIO, 1961

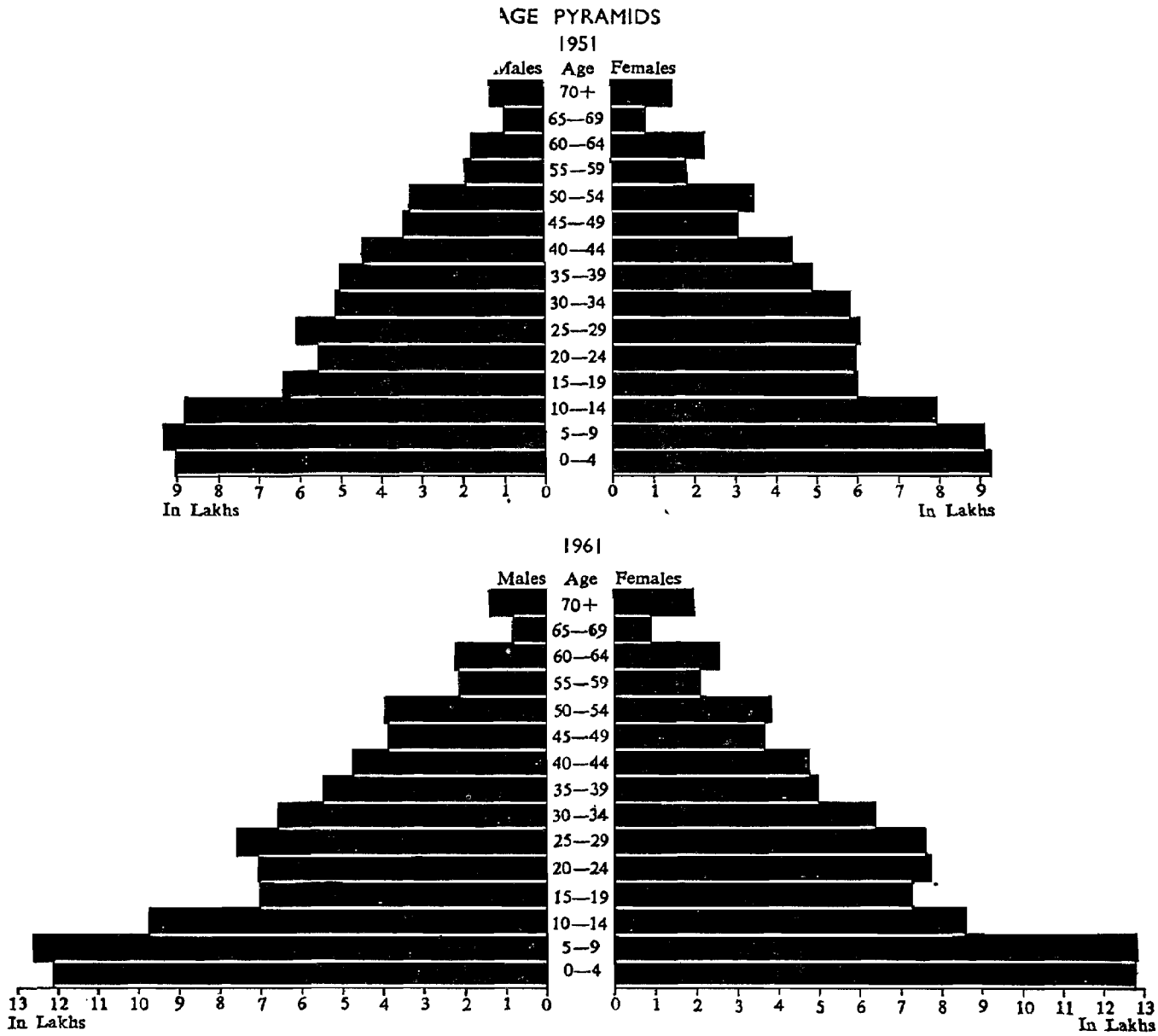
Sex ratio is an important factor in influencing the growth of population. The immediate increase or decrease of population depends upon the sex ratio of the population in the reproductive span of life. The map outlines the ratio between sexes in the general population of the State in 1961.

The map has been drawn on Isopleth technique. The number of females in each police station was plotted in the centre of the police station. The figures were either more or less than 1,000. A line was drawn connecting points proportionately midway between the nearest figures above and below 1,000 and thus an isopleth showing the line of equality of 1,000 females to 1,000 males was obtained. Thereafter further lines were drawn through figures at intervals of 100 on either side of the 1,000 line. The lowest figure through which the isopleth runs is 700 and the highest is 1,100. The intervening spaces between every two isopleths are hatched from low to high, namely, below 700, 700 to 800, 800 to 900, 900 to 1,000, 1,000 to 1,100 and above 1,100 females per 1,000 males.

The State average works out to 1,001 females for every 1,000 males. The distribution, however, varies from one police station to another. For instance, there are 1,256 females for every 1,000 males in Gangapur police station of Ganjam district, whereas there are only 537 females per 1,000 males in Rourkela police station of Sundargarh district. The low proportion of females in Rourkela police station is explained by the fact that in the steel plants and other heavy industrial areas, workers, particularly the labourers, keep away from their families. The same reason applies to the low ratio of females in Hirakud and Chowdwar police stations. The high proportion of females in Gangapur police station is the local emphasis of the district pattern of Ganjam where the females constitute 51·97 per cent of the total population.


MAP No. 28
ORISSA
CHANGING PATTERN OF SEX-RATIO, 1951-61
(SEX RATIO, 1951)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SEX RATIO
Below 800
800 - 900
900 - 950
950 - 1000
1000 - 1050
1050 - 1100
Above 1100
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E


MAP No. 29
ORISSA
CHANGING PATTERN OF SEX-RATIO, 1951—1961
(SEX RATIO, 1961)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SEX RATIO
Below 800
800 – 900
900 – 950
950 – 1000
1000 – 1050
1050 – 1100
Above 1100
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E


AGE PYRAMIDS
1951
Males
Age
Females
70+
65—69
60—64
55—59
50—54
45—49
40—44
35—39
30—34
25—29
20—24
15—19
10—14
5—9
0—4
9 8 7 6 5 4 3 2 1 0
In Lakhs
0 1 2 3 4 5 6 7 8 9
In Lakhs
1961
Males
Age
Females
70+
65—69
60—64
55—59
50—54
45—49
40—44
35—39
30—34
25—29
20—24
15—19
10—14
5—9
0—4
13 12 11 10 9 8 7 6 5 4 3 2 1 0
In Lakhs
0 1 2 3 4 5 6 7 8 9 10 11 12 13
In Lakhs

MAP Nos. 28 AND 29

CHANGING PATTERN OF SEX RATIO, 1951–61

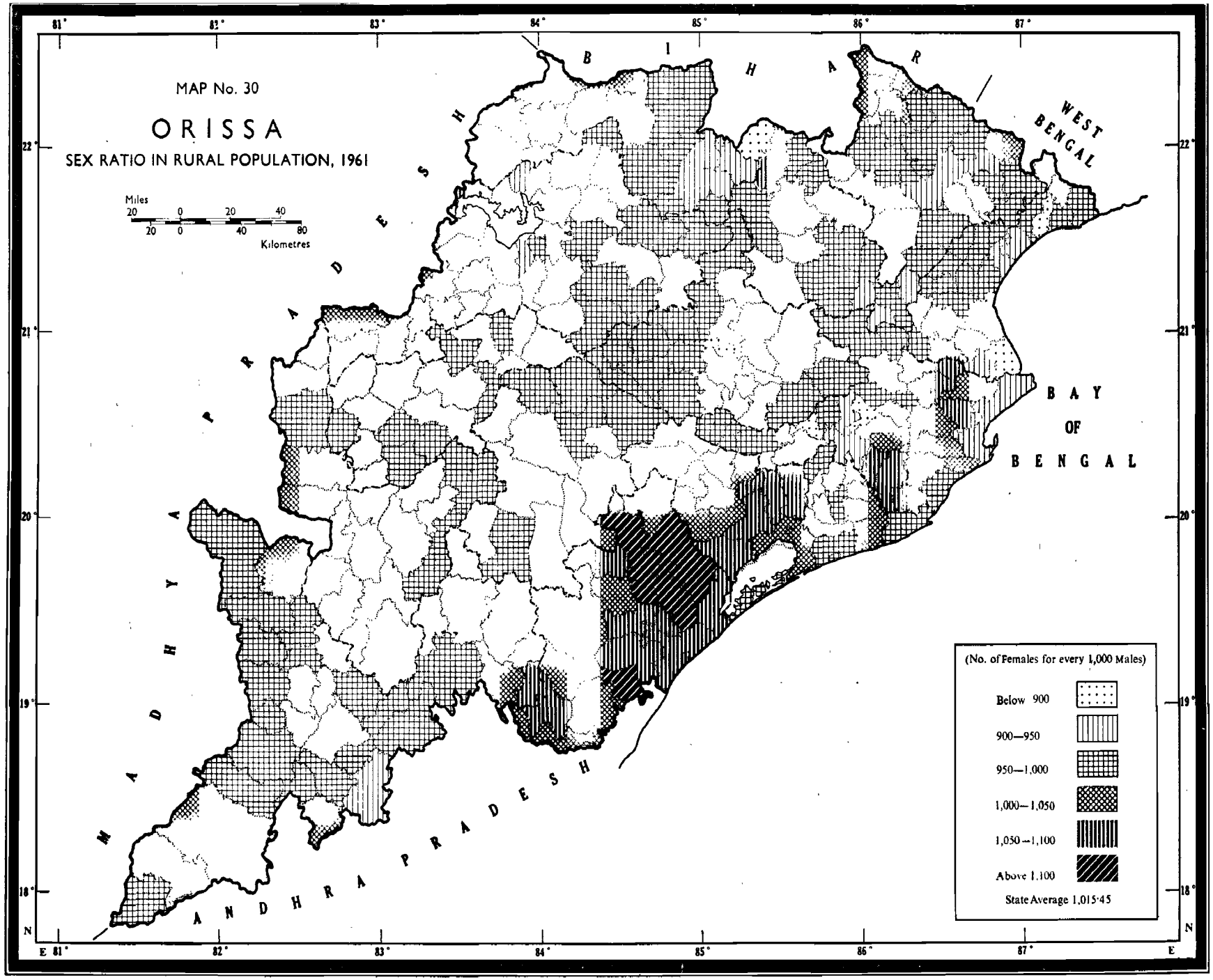
The two maps, Nos. 28 and 29 show the pattern of sex ratio changing between two censal years, 1951 and 1961. The number of females per every thousand males during 1951 is shown in the first map, while the corresponding picture as obtaining in 1961 is shown in the second map. The study of change in pattern is thus facilitated.

The number of females per 1,000 males is calculated for each police station and graded into seven ranges, above and below the equality figure 1,000. There are four divisions below 1,000 mark, viz., up to 800, 800 to 900, 900 to 950 and 950 to 1,000. The police stations falling under the above groups are hatched in four different black shades. On the other hand, the police stations having females in excess are grouped into 3 divisions, viz., 1,000 to 1,050, 1,050 to 1,100 and above 1,100, and are hatched in red colour. All the hatchings are done by choropleth technique.

The number of females for every thousand males in the State during 1951 was 1,022 whereas it decreased to 1,001 by 1961. There has thus been a drastic reduction in the proportion of females in the State. The district having the highest number of females per 1,000 males is Ganjam in both the Censuses, 1951 and 1961 with 1,113 and 1,082 respectively. During 1951, Balasore district had the lowest number of females (989), while in 1961 Sundargarh district was at the bottom with 915 females. The police stations having the highest number of females per thousand males in 1951 as well as in 1961 is Gangapur with 1,256 and 1,253 females respectively. On the other hand, Rourkela PS in 1961 has the lowest number, namely, 537 only. In 1951 Hirakud PS had the lowest number (625) in the State. Low ratio is invariably noticed in localities where there is appreciable extent of industrial activities.

The following statement gives the sex ratios of districts in 1951 and 1961:

State/ District	Sex Ratio in 1951	Sex Ratio in 1961
STATE	1,022	1,001
Ganjam	1,113	1,082
Puri	1,029	1,004
Cuttack	1,025	999
Kalahandi	1,019	1,021
Dhenkanal	1,017	991
Baudh-Khondmals	1,015	1,012
Sundargarh	1,012	915
Bolangir	1,010	1,000
Sambalpur	1,009	995
Mayurbhanj	1,001	991
Koraput	990	989
Balasore	989	974
Keonjhar	995	982

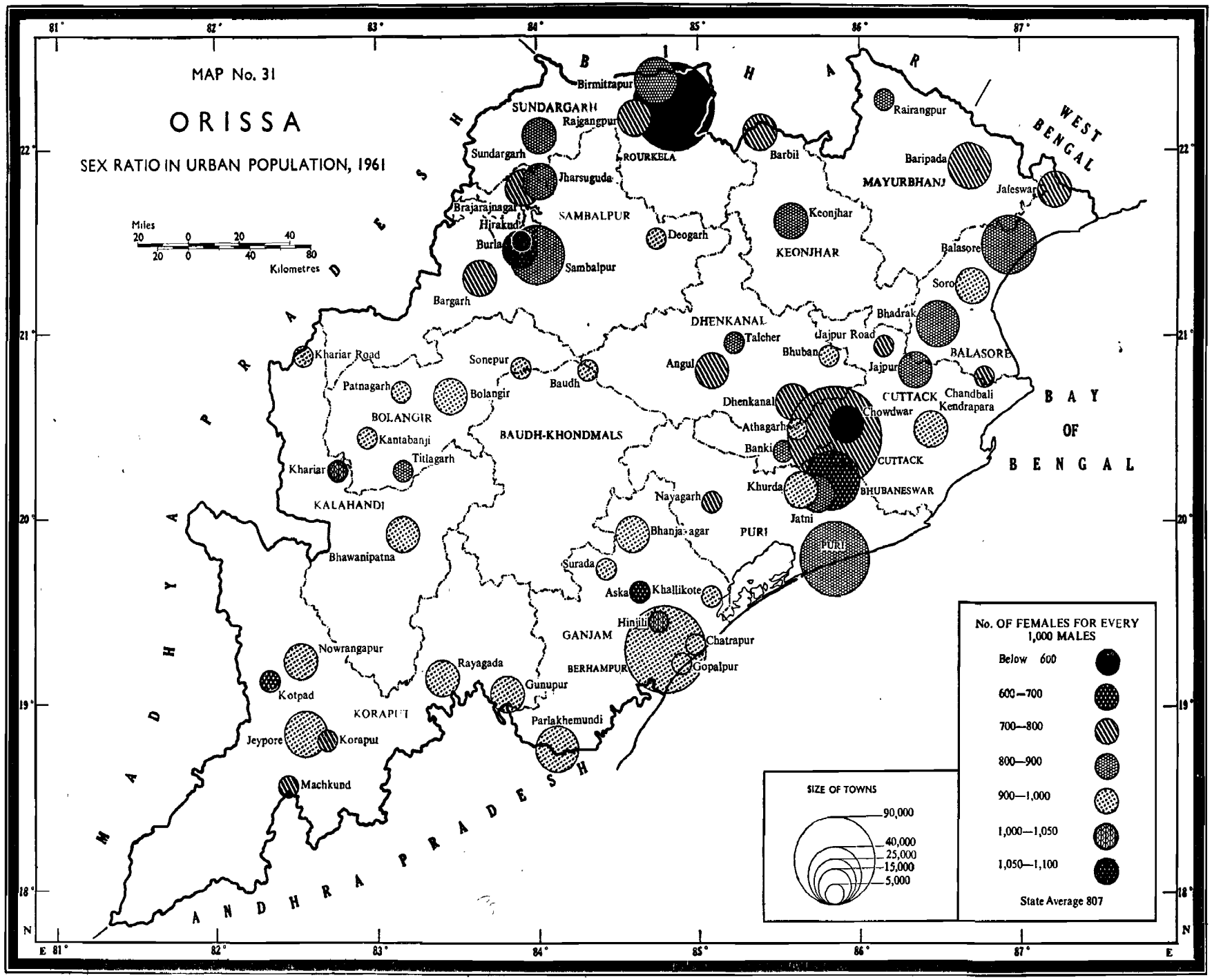

MAP No. 30
ORISSA
SEX RATIO IN RURAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
(No. of Females for every 1,000 Males)
Below 900
900—950
950—1,000
1,000—1,050
1,050—1,100
Above 1,100
State Average 1,015·45
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 30

SEX RATIO IN RURAL POPULATION, 1961

The map depicts the police-stationwise sex ratios in the rural population of 1961. The number of females per every 1,000 males in each police station has been arranged and grouped into six ranges at intervals of 50, commencing from 900. Three divisions fall on either side of the equality figure of 1,000. The police stations having less than 1,000 females per 1,000 males are marked in black shades, ranging from low to high, viz., up to 900, 900 to 950 and 950 to 1,000. On the other hand the police stations above the equality figure are shown in red shades, which range from 1,000 to 1,050, 1,050 to 1,100 and above 1,100.

There are 299 police stations in the State. The average number of females stands at 1,015 for every 1,000 males in the rural population of the State. The highest number of females, namely, 1,256 per thousand males, is found in Gangapur police station of Ganjam district, whereas the lowest figure comes from Singla police station of Balasore district going down to 850 females per thousand males. Ganjam, as a district, has the highest number of females per 1,000 males, while in Balasore district, the number of males exceeds that of females. On the whole, there is a surplus female population at the rate of 15 for every 1,000 males living in rural areas of Orissa.


MAP No. 31
ORISSA
SEX RATIO IN URBAN POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
SUNDARGARH
Rajgangpur
Sundargarh
ROURKELA
Barbil
Rairangpur
Baripada
MAYURBHANJ
Jaleswar
Jharsuguda
Brajarajnagar
Hirakud
SAMBALPUR
Deogarh
Keonjhar
KEONJHAR
Balasore
Burla
Sambalpur
Bargarh
Soro
DHENKANAL
Bhadrak
Talcher
Dajpur Road
Bhuban
Jajpur
BALASORE
Angul
Kharian Road
Sonepur
Baudh
Patnagarh
Bolangir
BOLANGIR
Dhenkanal
CUTTACK
Chandbali
Kendrapara
Chowdwar
Athagarh
Kantabanji
BAUDH-KHONDMALS
Banki
Titlagarh
Kharian
CUTTACK
Khurda
BHUBANESWAR
Jatni
KALAHANDI
Nayagarh
Bhanjanagar
PURI
Bhawanipatna
Surada
Aska
Khallikote
Hinjili
GANJAM
Chatrapur
Nowrangapur
Rayagada
BERHAMPUR
Gopalpur
Kotpad
Gunupur
KORAPUT
Parlakhemundi
Jeypore
Koraput
Machkund
SIZE OF TOWNS
90,000
40,000
25,000
15,000
5,000
No. OF FEMALES FOR EVERY 1,000 MALES
Below 600
600—700
700—800
800—900
900—1,000
1,000—1,050
1,050—1,100
State Average 807

MAP No. 31

SEX RATIO IN URBAN POPULATION, 1961

The map gives the police-stationwise sex ratios in the urban population of 1961. The proportion of females per 1,000 males in different police stations has been exhibited in seven ranges, five of which are below the equality figure of 1,000. The ranges start from below 600, and rise at intervals of 100, namely, 600 to 700, 700 to 800, 800 to 900 and 900 to 1,000. The police stations falling under these ranges are correspondingly shaded in black. On the other hand, the police stations shown in red shades have more than 1,000 females for every 1,000 males. There are two divisions marked at intervals of 50, viz., 1,000 to 1,050, and 1,050 to 1,100.

There are 62 towns in Orissa with a total population of 1,109,650 distributed over 61 police stations. The lowest ratio is noticed in Chowdwar police station of Cuttack district where the number is 535 women for every 1,000 men. Such a low figure is explained by the fact that Chowdwar, being an industrial suburb of Cuttack city, has mostly a population of males constituting the labour sector, and these men find it convenient to leave their females either at Cuttack which is across the river or in the adjoining villages for the sake of various facilities. Similar reasons, more or less, are applicable in the case of Rourkela town PS where the number of females for every 1,000 males is 537 only. The highest proportion is noted in Kotpad PS of Koraput district where the number is 1,087, followed by Aska PS of Ganjam district with 1,051 females for every 1,000 males.

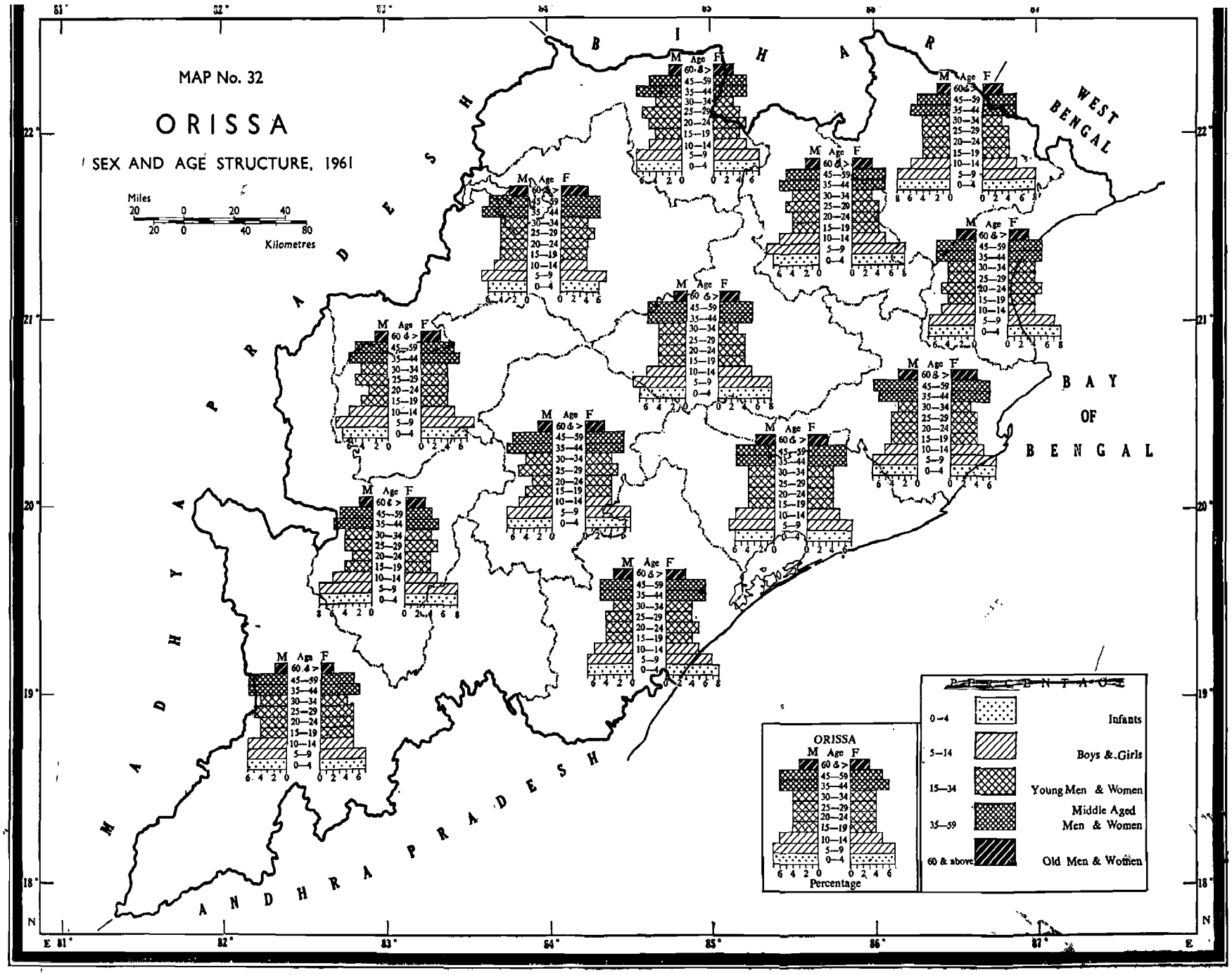
The State average of females for every 1,000 males in urban areas is 807, as against the National average of 845.

MAP No. 32

ORISSA

SEX AND AGE STRUCTURE, 1961

Miles 20 0 20 40
20 0 40 80 Kilometres

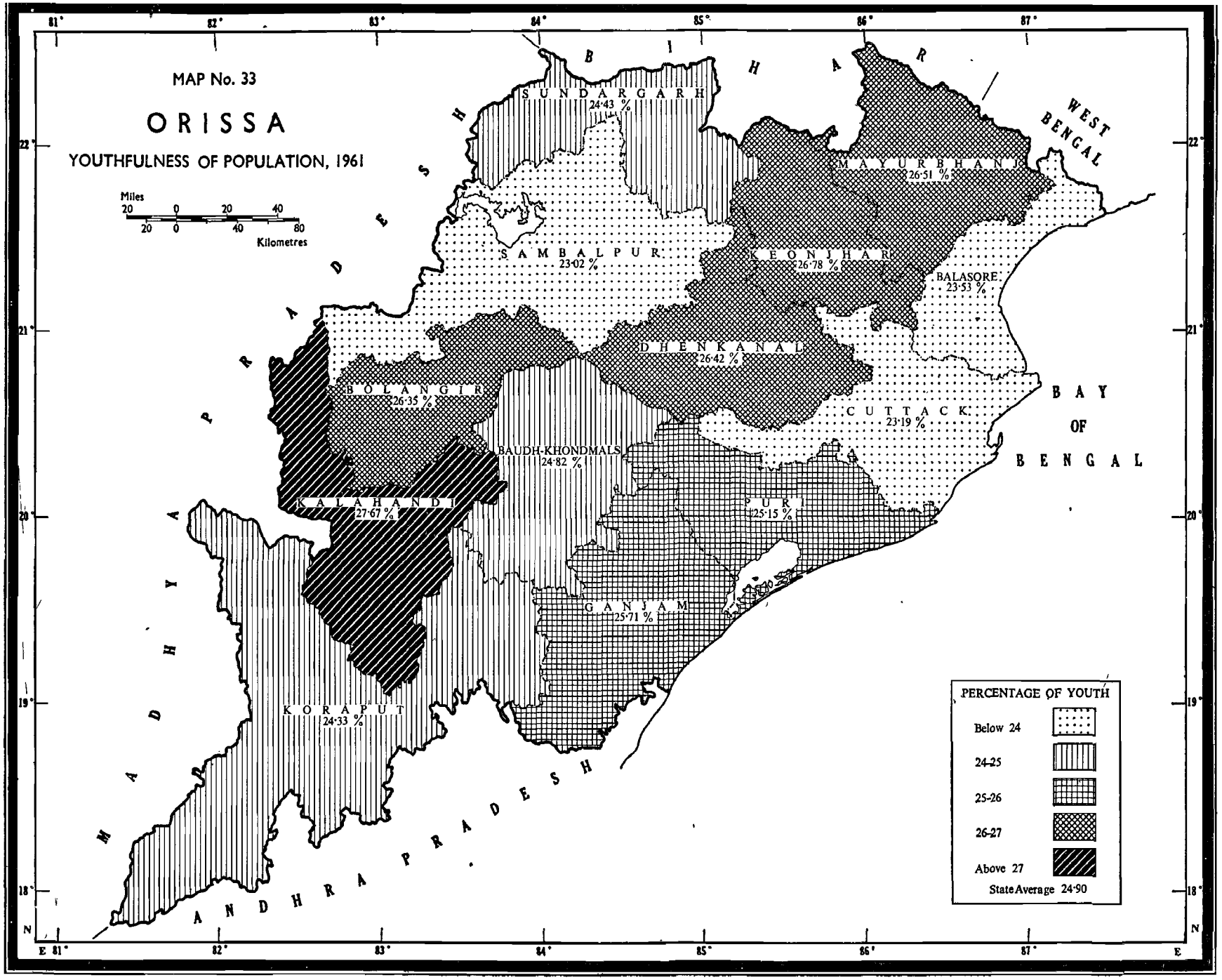


MAP No. 32

SEX AND AGE STRUCTURE, 1961

The map shows the sexwise classification of population in each district by different age-groups. The percentage of male and female population of different age-groups, viz., 0—4, 5—9, 10—14, 15—19, 20—24, 25—29, 30—34, 35—44, 45—59 and above 60 years is calculated for each district. These age-groups are further re-grouped into broader sections, so that infants are represented by the age-group 0 to 4, boys and girls by 5 to 14, young men and women by 15 to 34, middle-aged men and women by 35 to 59 and old men and women by 60+ years of age. Vertical columns, one for males and another for females in respect of each district are drawn, with age-group figures shown in between. Thereafter, horizontal bars are drawn proportionate to the percentage figures of each age-group on either side of the vertical column for males and females. Finally, the bars are hatched according to the legend in five patterns to represent the various sections of the population from infants to old persons. The corresponding structure for the State is illustrated in the right-hand bottom corner to facilitate comparison.

A common feature in the age structures of all the districts is the broad foundation constituted by the section of children of the age-groups 0—4 and 5—9. In some districts, the next group, namely, 10—14 also substantially reinforces the bulk of the base. This is the consequence of high birth-rate. The subsequent age-groups up to 30—34 generally show a tapering pattern, which is natural, on account of gradual depletion by deaths. The top portion of the column from 35 years onwards presents a heavy structure on account of longer spans of life constituting the age-groups, namely, 10 years (35—44) and 15 years (45—59) respectively, in place of 5 years as accepted for the lower age-groups. The top-most age-group, namely, above 60 years is small, as expected in the case of the people who are not noted for longevity.


MAP No. 33
ORISSA
YOUTHFULNESS OF POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH 24·43 %
SAMBALPUR 23·02 %
MAYURBHANJ 26·51 %
KEONJHAR 26·78 %
BALASORE 23·53 %
DHENKANAL 26·42 %
BOLANGIR 26·35 %
BAUDH-KHONDMALS 24·82 %
CUTTACK 23·19 %
KALAHANDI 27·67 %
PURI 25·15 %
GANJAM 25·71 %
KORAPUT 24·33 %
BIHAR
WEST BENGAL
ORISSA
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE OF YOUTH
Below 24
24-25
25-26
26-27
Above 27
State Average 24·90
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 33

YOUTHFULNESS OF POPULATION, 1961

The map represents the youthfulness of population as measured on the basis of percentage of the number of boys and girls in the age-group 5—14 to the total population of the State. The percentage is worked out districtwise, arranged in five groups, viz., below 24, 24—25, 25—26, 26—27 and above 27, and shown in the map by choropleth method.

Out of the total population of 17,548,846 there are 4,369,236 boys and girls constituting 24·9 per cent in the age-group of 5—14 in the State. Sambalpur district has the lowest percentage of boys and girls, namely, 23·02 per cent of the total population of the district, whereas Kalahandi district has the highest, namely, 27·67 per cent. The districts of Kalahandi, Bolangir, Ganjam, Dhenkanal, Puri, Keonjhar and Mayurbhanj have youthful population in excess of the State average which is 24·9 per cent. Other districts have a lower percentage than the State average. The number of boys and girls is not very unevenly distributed in different districts, as the percentage varies between 23 per cent to 28 per cent only.

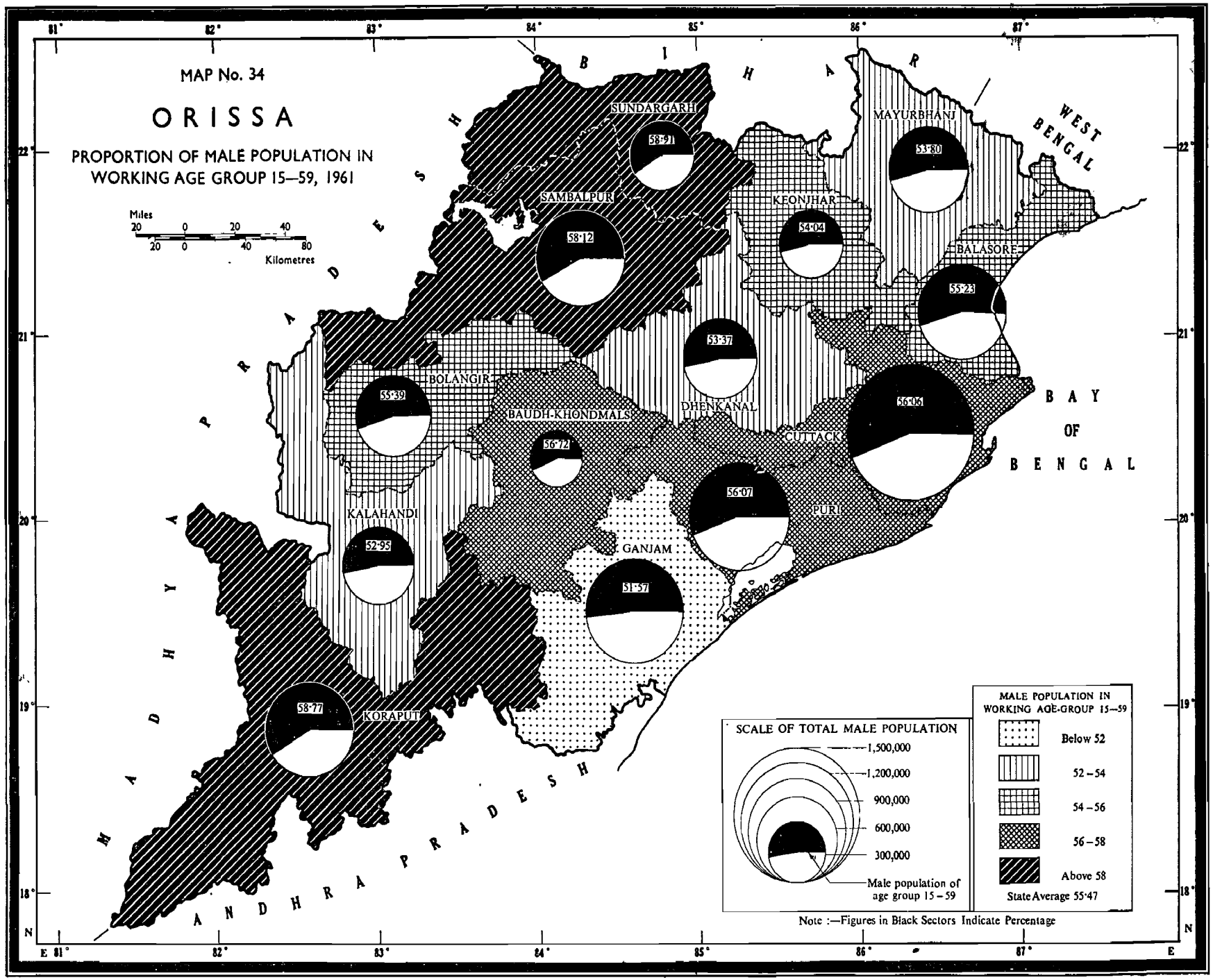
The statement below gives the percentage of boys and girls to the total population in districts:

District	Percentage of youthful population
Kalahandi	27·67
Keonjhar	26·78
Mayurbhanj	26·51
Dhenkanal	26·42
Bolangir	26·35
Ganjam	25·71
Puri	25·15
State Average	24·90
Baudh-Khondmals	24·82
Sundargarh	24·43
Koraput	24·33
Balasore	23·53
Cuttack	23·19
Sambalpur	23·02

MAP No. 34

ORISSA

PROPORTION OF MALE POPULATION IN WORKING AGE GROUP 15—59, 1961



Note :—Figures in Black Sectors Indicate Percentage

MAP No. 34

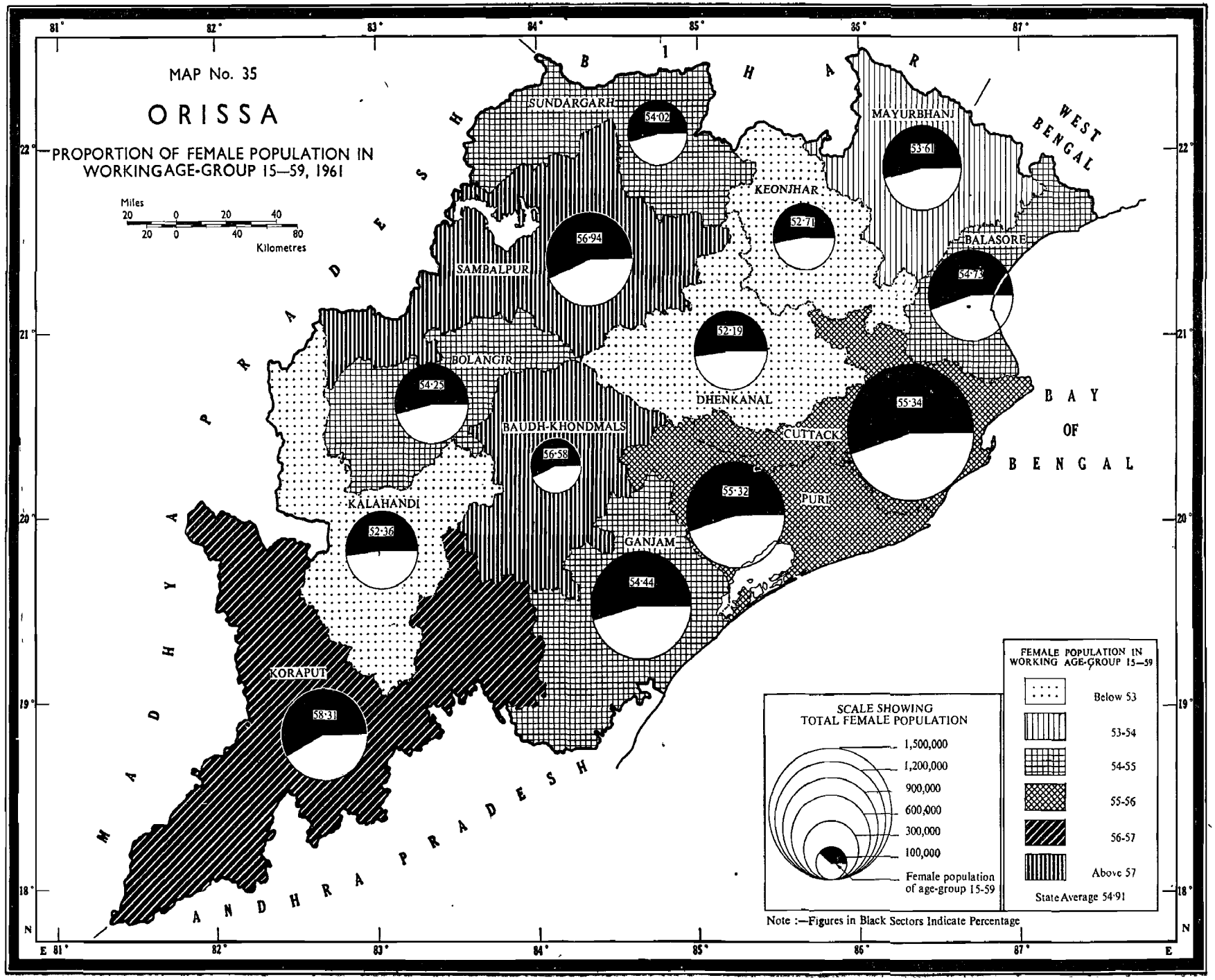
PROPORTION OF MALE POPULATION IN WORKING AGE-GROUP 15–59

The map brings out the proportion of males in working age-group 15 to 59 during 1961. The percentage of male population in the age-group 15—59 to the total male population is calculated districtwise and hatched in black shades by choropleth technique in five ranges, viz., below 52 per cent, 52 per cent to 54 per cent, 54 per cent to 56 per cent, 56 per cent to 58 per cent and above 58 per cent. Pie-circles have been drawn in each district to represent the total male population of the district. Black sectors are marked to show the proportion of male population in the working age-group 15—59.

There are 8,770,586 males in the State of Orissa of whom 4,865,305 or about 55·47 per cent represent males in the age-group 15—59. The highest percentage of males in this age-group is in Sundargarh district, namely, 58·91 per cent, and the lowest, 51·57 per cent in Ganjam district. There are six districts, viz., Koraput, Sambalpur, Sundargarh, Baudh-Khondmals, Puri and Cuttack which have an excess over the State average of 55·47 per cent while the other seven districts are below this level.

The following statement indicates the percentage of male population in the mentioned age-group in the districts of Orissa :

District	Percentage
Sundargarh	58·91
Koraput	58·77
Sambalpur	58·12
Baudh-Khondmals	56·72
Puri	56·07
Cuttack	56·06
State Average	55·47
Bolangir	55·39
Balasore	55·23
Keonjhar	54·04
Mayurbhanj	53·80
Dhenkanal	53·37
Kalahandi	52·95
Ganjam	51·57


MAP No. 35
ORISSA
PROPORTION OF FEMALE POPULATION IN WORKINGAGE-GROUP 15—59, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
54·02
MAYURBHANJ
53·61
KEONJHAR
52·71
BALASORE
54·73
SAMBALPUR
56·94
BOLANGIR
54·25
52·19
DHENKANAL
55·34
CUTTACK
BAUDH-KHONDMALS
56·58
PURI
55·32
KALAHANDI
52·36
GANJAM
54·44
KORAPUT
58·31
SCALE SHOWING TOTAL FEMALE POPULATION
1,500,000
1,200,000
900,000
600,000
300,000
100,000
Female population of age-group 15-59
FEMALE POPULATION IN WORKING AGE-GROUP 15—59
Below 53
53-54
54-55
55-56
56-57
Above 57
State Average 54·91
Note :—Figures in Black Sectors Indicate Percentage
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 35

PROPORTION OF FEMALE POPULATION IN WORKING AGE-GROUP 15–59

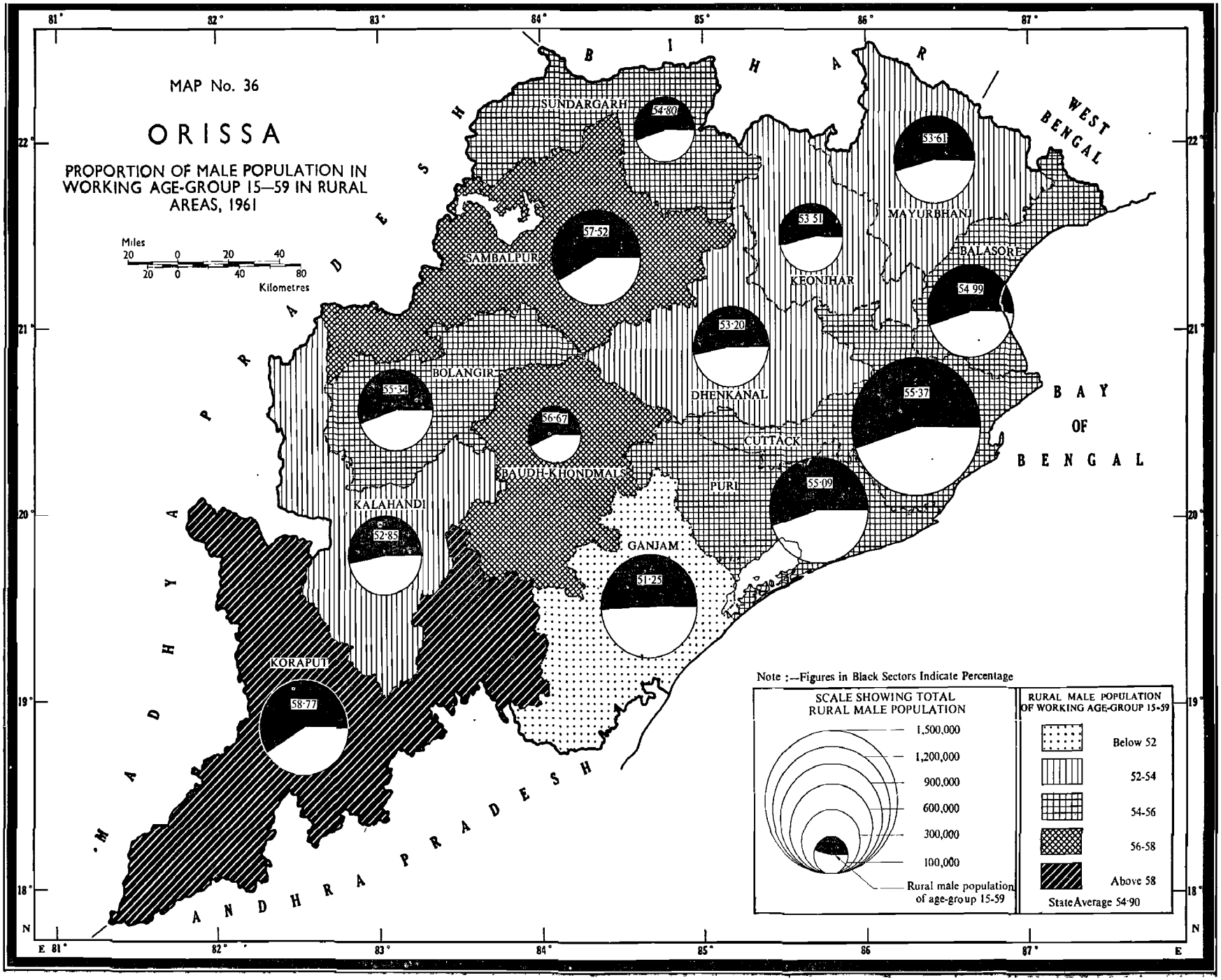
The map shows the proportion of females in working age-group 15 to 59 during 1961. The percentage of female population in this age-group to the total female population is calculated districtwise and hatched in black shades by choropleth technique in six ranges, viz., below 53, 53 to 54, 54 to 55, 55 to 56, 56 to 57 and above 57 per cent. Pie-graphs have been drawn in each district to represent the total female population of the district. Black sectors are marked out in each circle to indicate the proportion of females in the given age-group. This map is drawn on the same principles as the preceding Map No. 33 which represents the male population in the corresponding age-group 15—59.

There are 8,778,260 females in the State of Orissa of whom 4,819,943 or 54·91 per cent represent females in the age-group 15—59. The proportion of females in this particular age-group to the total female population of the districts is highest in Koraput (58·31 per cent) while it is lowest in Dhenkanal (52·19 per cent).

The districts having a higher percentage than the State average are only 5 in number, viz., Koraput, Sambalpur, Baudh-Khondmals, Cuttack and Puri while the rest of the districts are below this level.

The following statement gives the percentage of female population in the relevant age-group in the districts of Orissa :

District	Percentage
Koraput	58·31
Sambalpur	56·94
Baudh-Khondmals	56·58
Cuttack	55·34
Puri	55·32
State Average	54·91
Balasore	54·73
Ganjam	54·44
Bolangir	54·25
Sundargarh	54·02
Mayurbhanj	53·61
Keonjhar	52·71
Kalahandi	52·36
Dhenkanal	52·19


MAP No. 36
ORISSA
PROPORTION OF MALE POPULATION IN WORKING AGE-GROUP 15—59 IN RURAL AREAS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
54·80
SAMBALPUR
57·52
BOLANGIR
55·34
KALAHANDI
52·85
KORAPUT
58·77
BAUDH-KHONDMALS
56·67
GANJAM
51·25
DHENKANAL
53·20
KEONJHAR
53·51
MAYURBHANJ
53·61
BALASORE
54·99
CUTTACK
55·37
PURI
55·09
Note :—Figures in Black Sectors Indicate Percentage
SCALE SHOWING TOTAL RURAL MALE POPULATION
1,500,000
1,200,000
900,000
600,000
300,000
100,000
Rural male population of age-group 15-59
RURAL MALE POPULATION OF WORKING AGE-GROUP 15-59
Below 52
52-54
54-56
56-58
Above 58
State Average 54·90

MAP No. 36

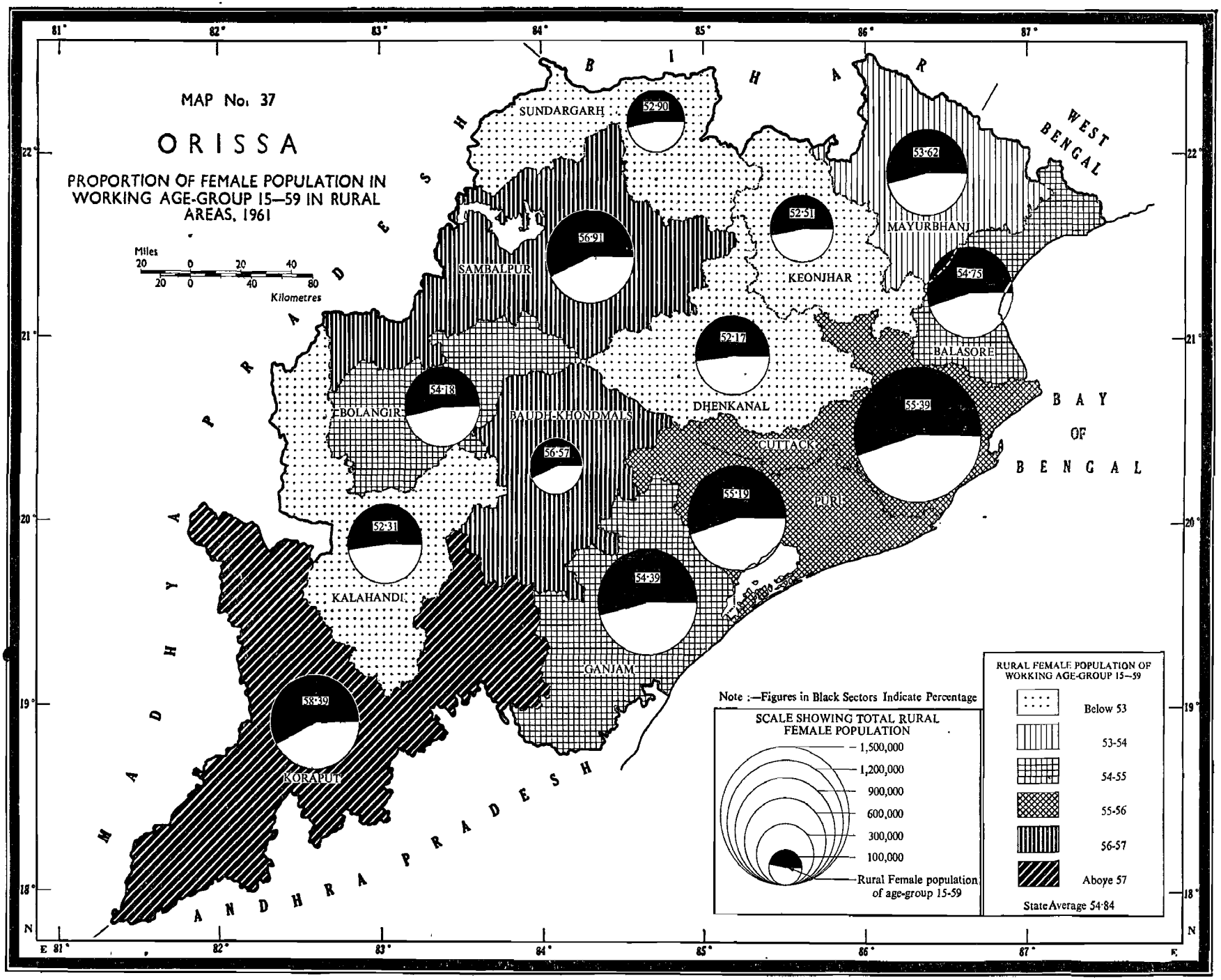
PROPORTION OF MALE POPULATION IN WORKING AGE-GROUP 15–59 IN RURAL AREAS, 1961

The map represents the proportion of male population in working age-group 15—59 in 1961 living in rural areas in the districts of Orissa. It is drawn on the same principle and technique as Map No. 34 which represents the combined rural and urban population, or in other words, the total population. The percentage of rural male population in the age-group concerned is calculated for each district and divided into five ranges, viz., below 52 per cent, 52 per cent to 54 per cent, 54 per cent to 56 per cent, 56 per cent to 58 per cent and above 58 per cent. Pie-circles proportionate to the total rural male population and black sectors showing the working male population give the comparative picture of different districts. Finally, the hatchings according to the percentage range as mentioned above complete the representation of the data on the map.

There are 4,478,264 males in the given age-group out of the total male population numbering 8,156,598 in the rural areas of the State. The State average works out to 54·9 per cent. The proportion of males in rural areas in this age-group is highest in Koraput (58·77 per cent) and lowest in Ganjam (51·25 per cent).

The statement below gives the percentage figures of male population in the working age-group 15—59 in the rural areas in 1961 :

District	Percentage
Koraput	58·77
Sambalpur	57·52
Baudh-Khondmals	56·67
Cuttack	55·37
Bolangir	55·34
Puri	55·09
Balasore	54·99
State Average	54·90
Sundargarh	54·80
Mayurbhanj	53·61
Keonjhar	53·51
Dhenkanal	53·20
Kalahandi	52·85
Ganjam	51·25


MAP No. 37
ORISSA
PROPORTION OF FEMALE POPULATION IN WORKING AGE-GROUP 15—59 IN RURAL AREAS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
52·90
SAMBALPUR
56·91
MAYURBHANJ
53·62
KEONJHAR
52·51
BALASORE
54·75
DHENKANAL
52·17
BOLANGIR
54·18
BAUDH-KHONDMALS
56·57
CUTTACK
55·39
PURI
55·19
KALAHANDI
52·31
GANJAM
54·39
KORAPUT
58·39
Note :—Figures in Black Sectors Indicate Percentage
SCALE SHOWING TOTAL RURAL FEMALE POPULATION
1,500,000
1,200,000
900,000
600,000
300,000
100,000
Rural Female population of age-group 15-59
RURAL FEMALE POPULATION OF WORKING AGE-GROUP 15—59
Below 53
53-54
54-55
55-56
56-57
Aboye 57
State Average 54·84
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 37

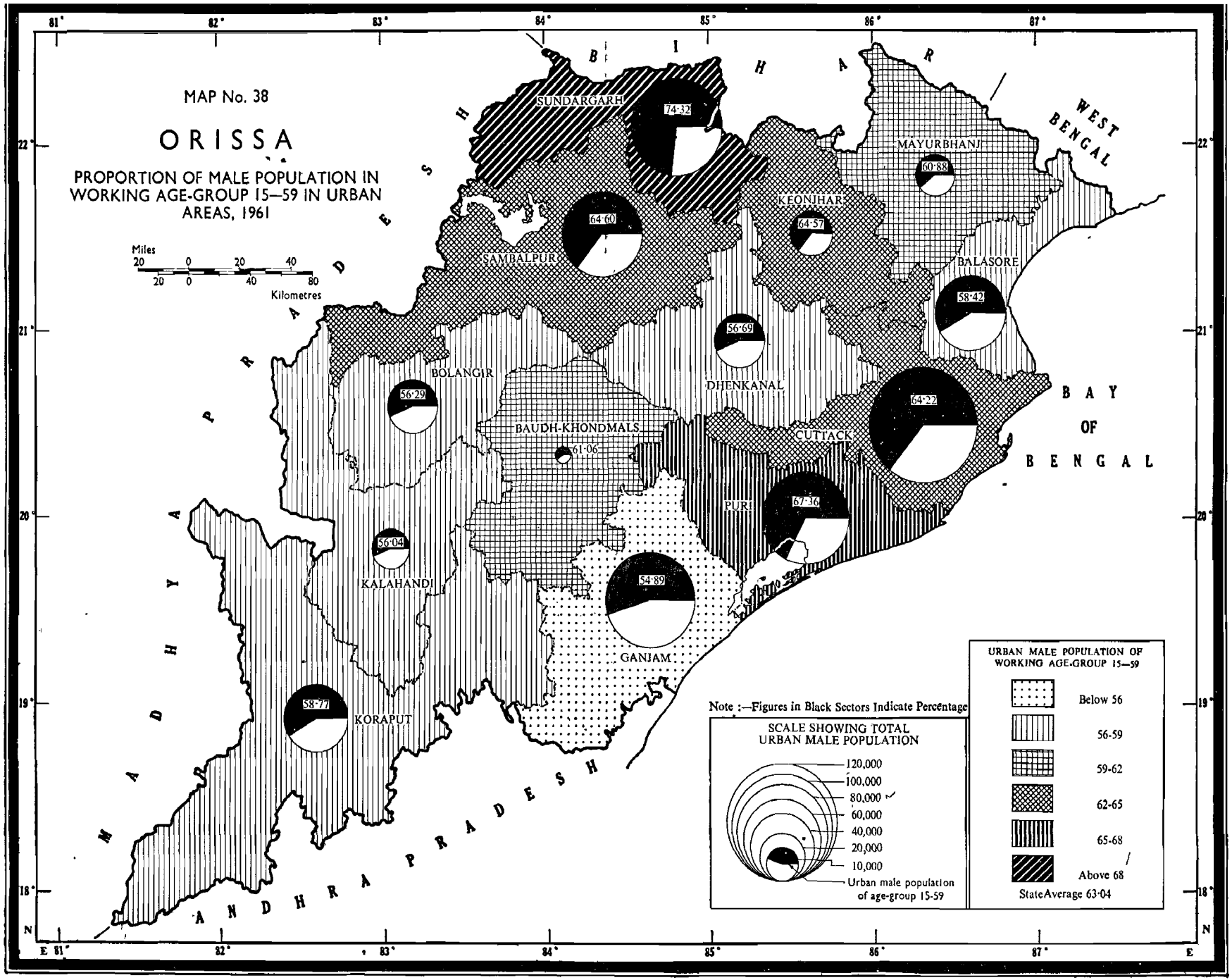
PROPORTION OF FEMALE POPULATION IN WORKING AGE-GROUP 15—59 IN RURAL AREAS, 1961

The map shows the proportion of female population in working age-group 15—59 to the total female population in the rural areas of the districts of Orissa in 1961. The percentage of such female population is calculated for each district and divided into six ranges, viz., below 53, 53 to 54, 54 to 55, 55 to 56, 56 to 57 and above 57. Pie-graphs are drawn in each district to represent the total rural female population of the district. Black sectors in the pie-graphs show the proportion of working rural female population in the age-group. Finally, the districts are hatched according to the ranges of percentage as mentioned above. The map is drawn on the same technique as Map No. 36 which relates to the corresponding aspect of male population.

There are 4,542,066 females in the age-group out of the total female population numbering 8,282,598 in the rural areas of the State. The average percentage for the State is 54·84. The rural female population in this age-group is not very much unevenly distributed in various districts, the range of variation being short. The proportion of females is highest in Koraput district (58·39 per cent) while it is lowest in Dhenkanal (52·17 per cent). The districts having a higher percentage than the State average are Koraput, Sambalpur, Baudh-Khondmals, Cuttack and Puri.

The statement below gives the percentage of female population in the working age-group 15—59 in the rural areas in 1961.

District	Percentage
Koraput	58·39
Sambalpur	56·91
Baudh-Khondmals	56·57
Cuttack	55·39
Puri	55·19
State Average	54·84
Balasore	54·75
Ganjam	54·39
Bolangir	54·18
Mayurbhanj	53·62
Sundargarh	52·90
Keonjhar	52·51
Kalahandi	52·31
Dhenkanal	52·17


MAP No. 38
ORISSA
PROPORTION OF MALE POPULATION IN WORKING AGE-GROUP 15—59 IN URBAN AREAS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
74·32
SAMBALPUR
64·60
KEONJHAR
64·57
MAYURBHANJ
60·88
BALASORE
58·42
56·69
BOLANGIR
56·29
DHENKANAL
64·22
CUTTACK
BAUDH-KHONDMALS
61·06
PURI
67·36
56·04
KALAHANDI
54·89
GANJAM
58·77
KORAPUT
Note :—Figures in Black Sectors Indicate Percentage
SCALE SHOWING TOTAL URBAN MALE POPULATION
120,000
100,000
80,000
60,000
40,000
20,000
10,000
Urban male population of age-group 15-59
URBAN MALE POPULATION OF WORKING AGE-GROUP 15—59
Below 56
56-59
59-62
62-65
65-68
Above 68
StateAverage 63·04
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 38

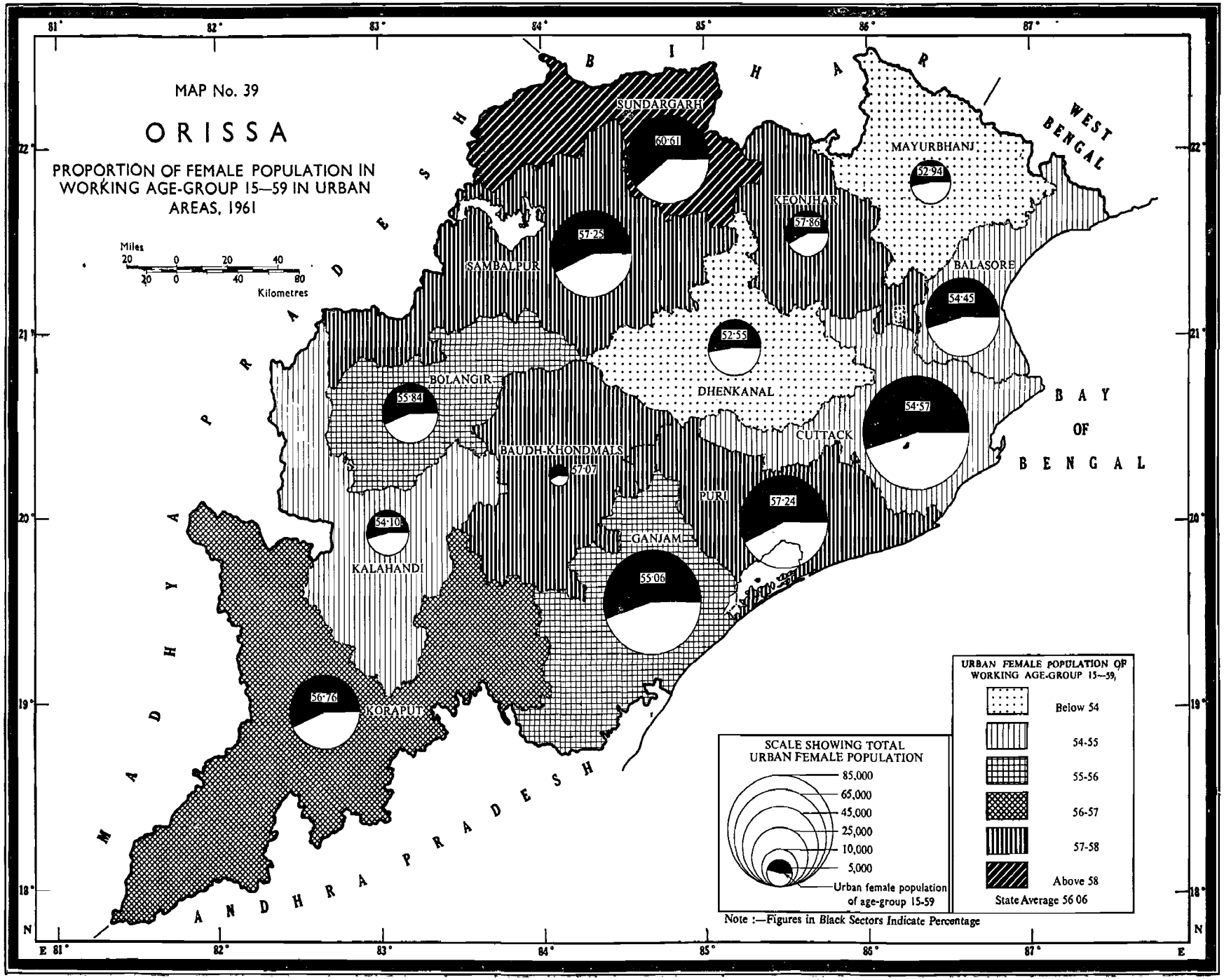
PROPORTION OF MALE POPULATION IN WORKING AGE-GROUP 15–59 IN URBAN AREAS, 1961

The map projects the proportion of male population in working age-group 15—59 living in urban areas in the districts of Orissa. Pie-graphs are drawn in each district proportionate to the total urban male population. It is the largest in Cuttack district which contains the only city of the State. Black sectors are marked out in each circle representing the proportion of urban male population in working age-group 15—59. The percentage of such population in different districts is divided into six ranges and hatched according to the legend given on the map.

There are 62 urban localities in the State containing 613,988 males, of whom 387,041 are in the age-group 15—59. The average for the State is 63·04 per cent. The largest urban male population is in Cuttack district (119,568) of whom 76,785 persons or 64·22 per cent belong to the age-group. The lowest urban male population is in Baudh-Khondmals district (3,123), of whom 1,907 are in the required age-group. Although Cuttack has the largest urban male population, the highest percentage of urban male population in the age-group is found in Sundargarh district (74·32). On the other hand, Ganjam district has the lowest percentage, namely, 54·89 only.

The statement below gives the percentage of male population in the working age-group 15—59 in the urban areas in 1961 :

District	Percentage
Sundargarh	74·32
Puri	67·36
Sambalpur	64·60
Keonjhar	64·57
Cuttack	64·22
State Average	63·04
Baudh-Khondmals	61·06
Mayurbhanj	60·88
Koraput	58·77
Balasore	58·42
Dhenkanal	56·69
Bolangir	56·29
Kalahandi	56·04
Ganjam	54·89


MAP No. 39
ORISSA
PROPORTION OF FEMALE POPULATION IN WORKING AGE-GROUP 15—59 IN URBAN AREAS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
60·61
SAMBALPUR
57·25
KEONJHAR
57·86
MAYURBHANJ
52·94
BALASORE
54·45
52·55
DHENKANAL
BOLANGIR
55·84
CUTTACK
54·57
BAUDH-KHONDMALS
57·07
PURI
57·24
GANJAM
55·06
KALAHANDI
54·10
KORAPUT
56·76
SCALE SHOWING TOTAL URBAN FEMALE POPULATION
85,000
65,000
45,000
25,000
10,000
5,000
Urban female population of age-group 15-59
URBAN FEMALE POPULATION OF WORKING AGE-GROUP 15—59
Below 54
54-55
55-56
56-57
57-58
Above 58
State Average 56 06
Note :—Figures in Black Sectors Indicate Percentage

MAP No. 39

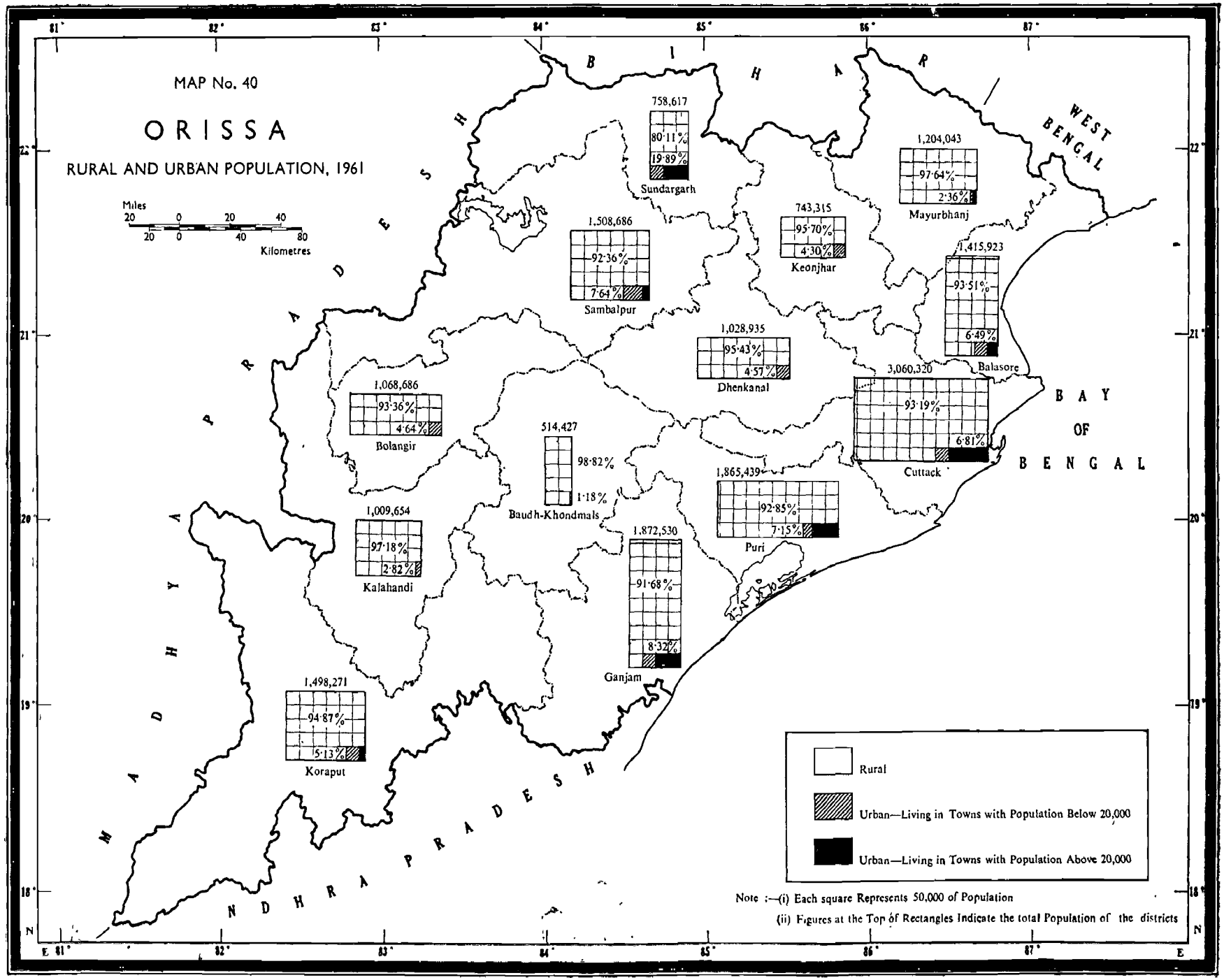
PROPORTION OF FEMALE POPULATION IN WORKING AGE-GROUP 15–59 IN URBAN AREAS, 1961

The map represents the proportion of female population in working age-group 15—59 to the total female population in the urban areas of the districts of Orissa in 1961. It is drawn on the same technique as the preceding five maps. The total urban female population in each district is represented by pie-graphs in the respective districts. The proportion of urban females in the age-group concerned is shown by black sectors in the respective circles. The percentage of such females is divided into six ranges, viz., below 54, 54 to 55, 55 to 56, 56 to 57, 57 to 58 and above 58 per cent. The districts are hatched in varying shades of black according to percentage.

The total number of urban females in the State is 495,662 of whom 277,877 are in the age-group under consideration. The State average comes to 56·06 per cent. The range of variation in the percentage attained by different districts is short, the highest being in Sundargarh district (60·61) and the lowest in Dhenkanal (52·55) and Mayurbhanj (52·94).

The statement below gives the percentage of females in working age-group 15—59 in the urban localities of different districts of Orissa :

District	Percentage
Sundargarh	60·61
Keonjhar	57·86
Sambalpur	57·25
Puri	57·24
Baudh-Khondmals	57·07
Koraput	56·76
State Average	56·06
Bolangir	55·84
Ganjam	55·06
Cuttack	54·57
Balasore	54·45
Kalahandi	54·10
Mayurbhanj	52·94
Dhenkanal	52·55


MAP No. 40
ORISSA
RURAL AND URBAN POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
758,617
80·11%
19·89%
Sundargarh
1,204,043
97·64%
2·36%
Mayurbhanj
743,315
95·70%
4·30%
Keonjhar
1,508,686
92·36%
7·64%
Sambalpur
1,415,923
93·51%
6·49%
Balasore
1,028,935
95·43%
4·57%
Dhenkanal
3,060,320
93·19%
6·81%
Cuttack
1,068,686
93·36%
4·64%
Bolangir
514,427
98·82%
1·18%
Baudh-Khondmals
1,865,439
92·85%
7·15%
Puri
1,009,654
97·18%
2·82%
Kalahandi
1,872,530
91·68%
8·32%
Ganjam
1,498,271
94·87%
5·13%
Koraput
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Rural
Urban—Living in Towns with Population Below 20,000
Urban—Living in Towns with Population Above 20,000
Note :—(i) Each square Represents 50,000 of Population
(ii) Figures at the Top of Rectangles Indicate the total Population of the districts

MAP No. 40

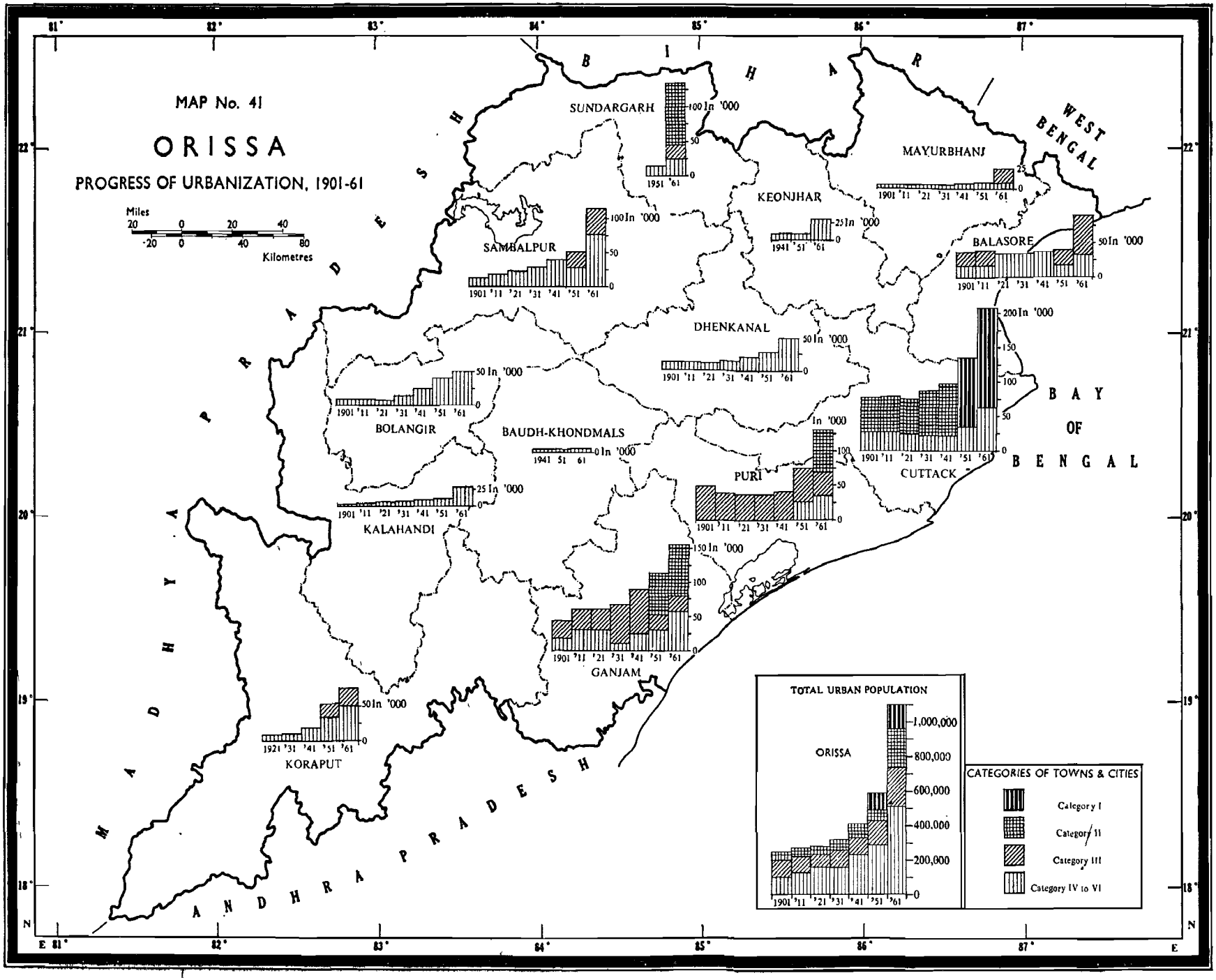
RURAL AND URBAN POPULATION, 1961

The map gives the distribution of rural and urban population in the districts during 1961. Rectangles have been drawn in each district proportionate to the total population of the district. Each rectangle comprises a number of small squares, one square being equivalent to 50,000 population. Rural population is shown by blank squares whereas urban population is represented by shaded ones. Solid black shade indicates the number of people living in towns above 20,000 population, while the portions with black hatchings show persons living in towns below 20,000 population.

Out of the total population of 17,548,846 in the State, 16,439,196 persons live in rural areas and 1,109,650 in towns. There are 62 towns in the State out of which only 12 exceed 20,000 population each. The other 50 towns have a population below 20,000. Cuttack, which is the most populous district of Orissa, has the largest urban population (208,597) and the largest rural population (2,851,723). In contrary, Baudh-Khondmals has the lowest population (514,427) both in urban (6,088) and in rural areas (508,339).

The following statement gives the list of rural, urban and total population in each district of Orissa :

State/District	Total Population	Rural	Urban
ORISSA	17,548,846	16,439,196	1,109,650
Kalahandi	1,009,654	981,081	28,573
Koraput	1,498,271	1,421,300	76,971
Sambalpur	1,508,686	1,393,311	115,375
Bolangir	1,068,686	1,019,027	49,659
Baudh-Khondmals	514,427	508,339	6,088
Ganjam	1,872,530	1,716,686	155,844
Sundargarh	758,617	622,857	135,760
Dhenkanal	1,028,935	981,847	47,088
Puri	1,865,439	1,732,033	133,406
Keonjhar	743,315	711,351	31,964
Cuttack	3,060,320	2,851,723	208,597
Mayurbhanj	1,204,043	1,175,623	28,420
Balasore	1,415,923	1,324,018	91,905


MAP No. 41
ORISSA
PROGRESS OF URBANIZATION, 1901-61
Miles
20 0 20 40
-20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
DHENKANAL
BOLANGIR
BAUDH-KHONDMALS
CUTTACK
PURI
KALAHANDI
GANJAM
KORAPUT
In '000
1901 '11 '21 '31 '41 '51 '61
1951 '61
1941 '51 '61
1921 '31 '41 '51 '61
TOTAL URBAN POPULATION
ORISSA
1,000,000
800,000
600,000
400,000
200,000
0
CATEGORIES OF TOWNS & CITIES
Category I
Category II
Category III
Category IV to VI
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 41

GROWTH OF URBANISM, 1901–1961

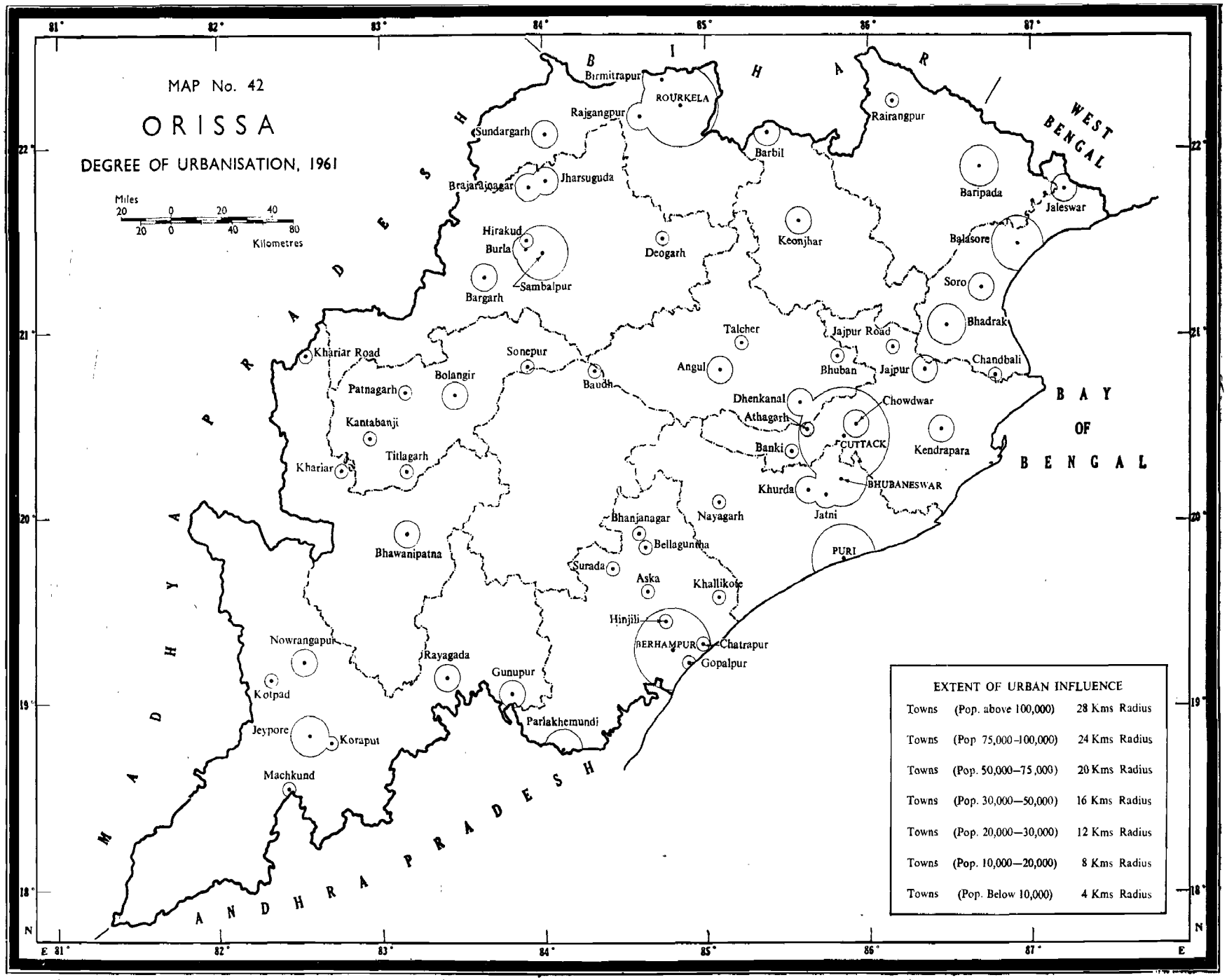
The map depicts the growth of urbanism from 1901 to 1961, a span of 60 years. The population living in different classes of towns during each of the seven decennia are shown by histograms. Seven histograms are drawn proportionate to the urban population for the seven decennial periods. These histograms are divided into parts corresponding to the population of different categories of towns, and each such part is hatched with a pattern allotted to the particular category. For purposes of this map, the cities and towns of various population sizes are divided into four categories as mentioned below :

Category	Class of Towns	Population size
1st	Class I	Over 100,000
2nd	Class II	50,000 to 100,000
3rd	Class III	20,000 to 50,000
4th	Classes IV, V and VI	Below 20,000

The growth of urbanism during the first half of the present century has been poor as the histograms will indicate. There has, however, been a notable growth in all the districts except Baudh-Khondmals during the last decennium (1951-61). The highest growth during the decennium has taken place in Sundargarh district due to establishment of the Steel town at Rourkela and due to general industrial development in different parts of the district. This is followed by Cuttack where the growth is due not only to the growing city of Cuttack but also to the addition of two new towns to the list, viz., Jajpur Road and Chowdwar during the decade. Sambalpur, Puri and Balasore districts have also gained appreciably due to inclusion of new towns as well as growth of old towns.

The following statement gives a list of towns of different categories during the seven decennial years :

Year	Total No. of Towns	Class I	Class II	Class III	Class IV	Class V	Class VI
1901	14	—	1	3	5	4	1
1911	18	—	1	3	5	6	3
1921	20	—	1	2	6	9	2
1931	21	—	1	3	6	10	1
1941	29	—	1	3	8	16	1
1951	39	1	1	5	8	23	1
1961	62	1	3	8	22	25	3


MAP No. 42
ORISSA
DEGREE OF URBANISATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
ROURKELA
Rajgangpur
Sundargarh
Rairangpur
Barbil
Jharsuguda
Brajarajnagar
Baripada
Jaleswar
Hirakud
Burla
Sambalpur
Deogarh
Keonjhar
Balasore
Bargarh
Soro
Bhadrak
Talcher
Jajpur Road
Kharlar Road
Sonepur
Angul
Bhuban
Jajpur
Chandbali
Bolangir
Baudh
Patnagarh
Dhenkanal
Chowdwar
Kantabanji
Athagarh
CUTTACK
Titlagarh
Banki
Kendrapara
Khariar
Khurda
BHUBANESWAR
Jatni
Bhanjanagar
Nayagarh
Bhawanipatna
Bellaguntha
PURI
Surada
Aska
Khallikote
Hinjili
Nowrangapur
BERHAMPUR
Chatrapur
Rayagada
Gopalpur
Gunupur
Kotpad
Parlakhemundi
Jeypore
Koraput
Machkund
EXTENT OF URBAN INFLUENCE
Towns (Pop. above 100,000) 28 Kms Radius
Towns (Pop 75,000-100,000) 24 Kms Radius
Towns (Pop. 50,000-75,000) 20 Kms Radius
Towns (Pop. 30,000-50,000) 16 Kms Radius
Towns (Pop. 20,000-30,000) 12 Kms Radius
Towns (Pop. 10,000-20,000) 8 Kms Radius
Towns (Pop. Below 10,000) 4 Kms Radius

MAP No. 42

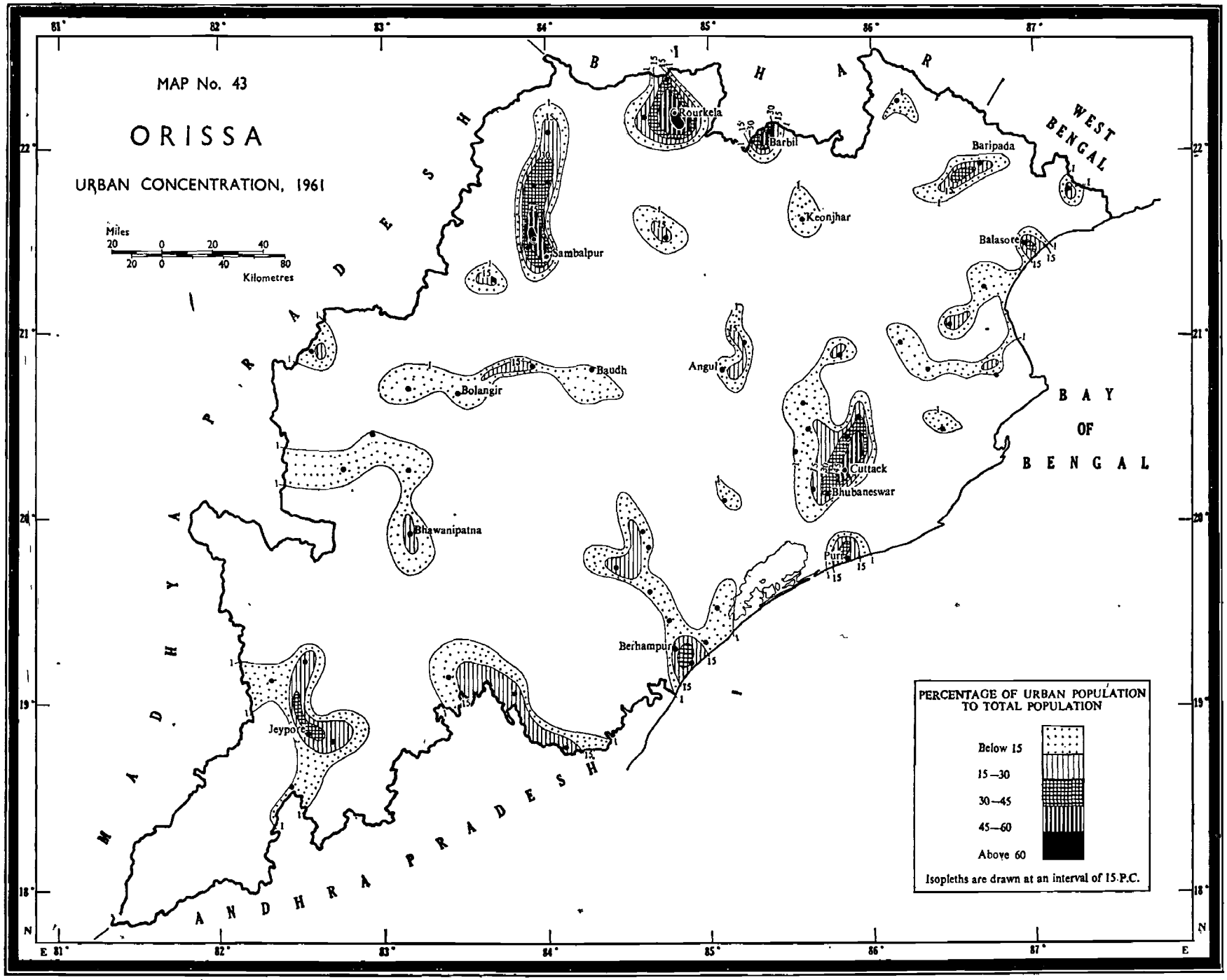
DEGREE OF URBANISATION, 1961

The map brings out the regional diversity in the scattered location and concentration of towns. The urban influence exerted by the towns in their respective surrounding regions is shown here. The influenced region is assumed to be circular, and to vary in proportion to the size of population of the town concerned. The radii of circles of influence are of varying length showing the distance over which the towns exert urban influence. The circles have overlapped in some places, which merely indicates contiguity. The radial length of circles representing different sizes of population of towns is given below :

Population of town in thousands	Radius of circle in Km
Above 100	28
75 to 100	24
50 to 75	20
30 to 50	16
20 to 30	12
10 to 20	8
Below 10	4

The space outside the circle is shaded in order to differentiate the rural from the urban areas.

The towns are scattered in the coastal, northern and western parts of the State. There is almost a blank region in the central portion, while the number of towns in the south are few and far between. Cuttack is the only city in the State, with over 100,000 population and consequently the urban influence exerted by it is the maximum. Moreover, it is the largest unit in the contiguous group of towns extending for over 70 kilometres from Chowdwar to Khurda with Bhubaneswar, the capital town of the State, at the hub. The region between Rourkela and Bargarh in the north-western part is well studded with urban localities. Another noticeable group occurs in a linear formation in the district of Balasore, having Jaleswar and Jajpur at either extremity. The rest of the towns are irregularly scattered throughout the State, making no pattern worth consideration.

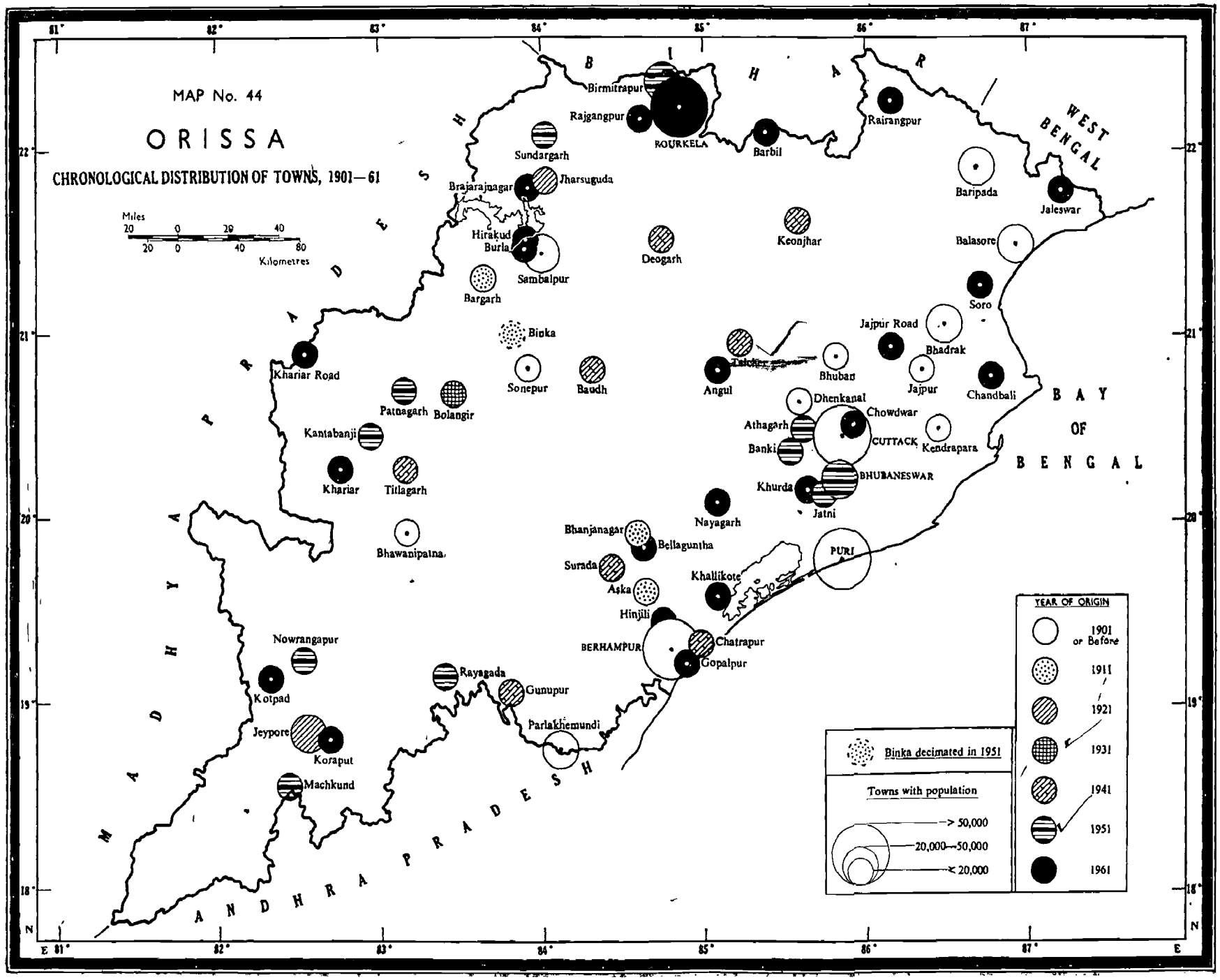

MAP No. 43
ORISSA
URBAN CONCENTRATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Rourkela
Barbil
Baripada
Keonjhar
Balasore
Sambalpur
Baudh
Bolangir
Angul
Cuttack
Bhubaneswar
Puri
Bhawanipatna
Berhampur
Jeypore
PERCENTAGE OF URBAN POPULATION TO TOTAL POPULATION
Below 15
15—30
30—45
45—60
Above 60
Isopleths are drawn at an interval of 15 P.C.

MAP No. 43

URBAN CONCENTRATION, 1961

The map represents the zones of urban concentration in the State in 1961. There are 62 towns in the State, distributed in 61 police stations out of the total number of 299 police stations. So the rest of the police stations are without urban population. The percentage values of urban population to the total population of respective police stations are calculated and grouped into five ranges, viz., below 15, 15 to 30, 30 to 45, 45 to 60 and above 60 per cent. The values thereof are plotted in the centre of respective police stations. Thereafter isopleths are drawn at intervals of 15 per cent. The intervening spaces have been hatched in different shades from low to high.

There are 1,109,650 persons living in towns out of 17,548,846 people in the State. Thus the State average of urban population works out to 6·32 per cent. As there are urban areas in 61 police stations only out of 299 in the State, the percentage of a town's population, when worked out in relation to the total population of the police station containing that town, will stand much higher than the State average of 6·32 per cent. There is only one police station, Rambha (Ganjam district) having a lower percentage (3·79) of urban concentration than the State average, whereas the rest of the police stations are well high above the State average. The highest percentage of urban concentration is seen in Raghunathpali PS (71·16 per cent) followed by Sambalpur PS (53·74 per cent). There are four patches having really a high percentage of urban concentration. The first one contains towns like Cuttack, Bhubaneswar, Khurda, Chowdwar, Dhenkanal, Athgarh, Banki, Bhuban, etc. The second belt has Sambalpur, Burla, Hirakud, Brajarajnagar, Jharsuguda and Sundargarh. The third belt consists of Rourkela, Rajgangpur and Birmitrapur. The last one has a number of towns, viz., Berhampur, Chatrapur, Gopalpur, Khallikote, Hinjili, Aska, Surada, Bhanjanagar and Bellaguntha.


MAP No. 44
ORISSA
CHRONOLOGICAL DISTRIBUTION OF TOWNS, 1901—61
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
Rajgangpur
ROURKELA
Barbil
Rairangpur
Sundargarh
Jharsuguda
Brajarajnagar
Baripada
Jaleswar
Hirakud
Burla
Sambalpur
Deogarh
Keonjhar
Balasore
Bargarh
Soro
Binka
Jajpur Road
Bhadrak
Kharian Road
Sonepur
Baudh
Angul
Bhubaneswar
Jajpur
Chandbali
Dhenkanal
Patnagarh
Bolangir
Chowdwar
Athagarh
Kantabanji
CUTTACK
Kendrapara
Banki
Kharian
Titlagarh
BHUBANESWAR
Khurda
Jatni
Nayagarh
Bhanjanagar
Bellaguntha
PURI
Surada
Khallikote
Aska
Hinjili
Nowrangapur
BERHAMPUR
Chatrapur
Gopalpur
Kotpad
Rayagada
Gunupur
Jeypore
Koraput
Parlakhemundi
Machkund
YEAR OF ORIGIN
1901 or Before
1911
1921
1931
1941
1951
1961
Binka decimated in 1951
Towns with population
> 50,000
20,000—50,000
< 20,000

MAP No. 44

CHRONOLOGICAL DISTRIBUTION OF TOWNS, 1901—1961

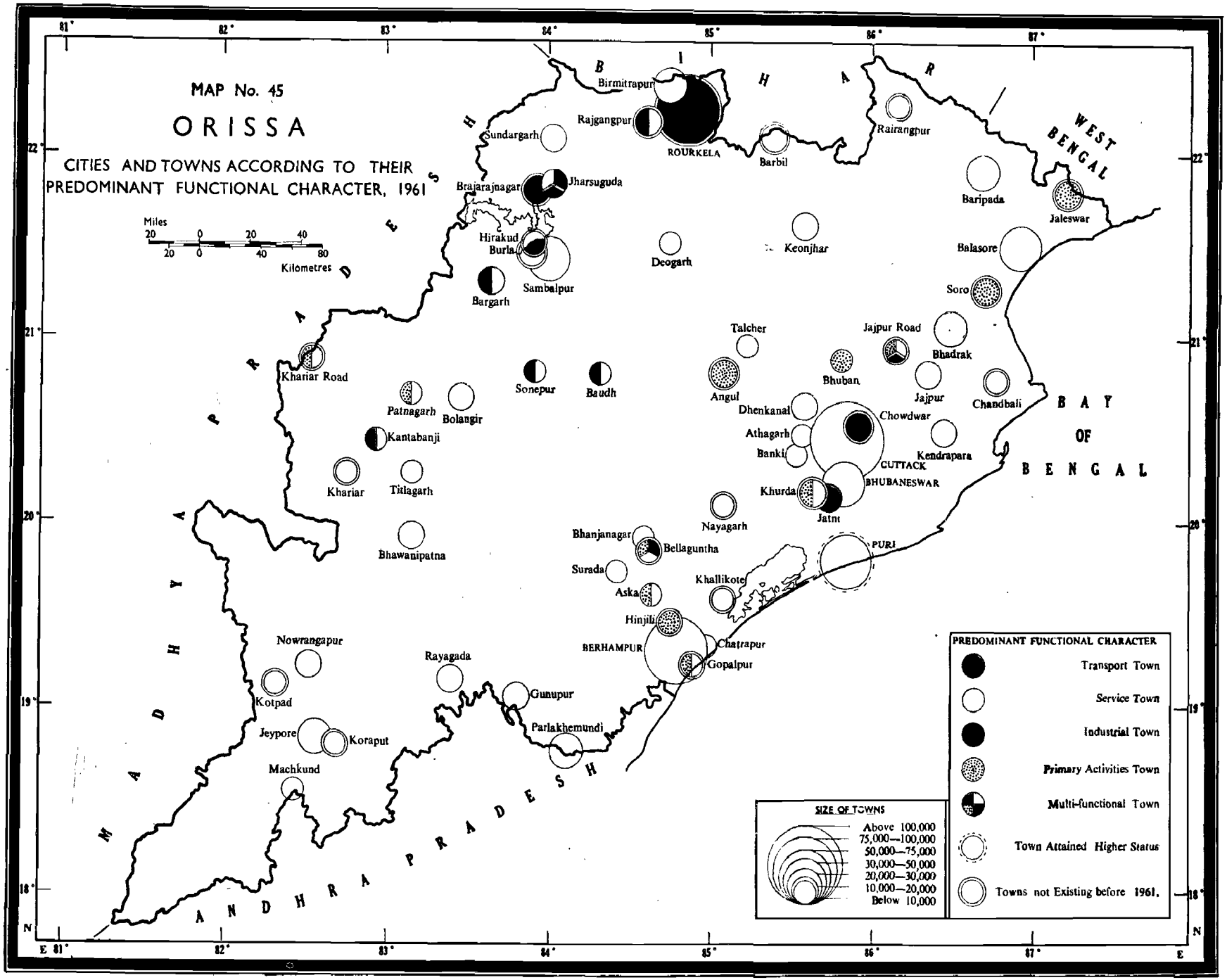
The map shows the distribution of towns in the State according to their censal year of origin during the years 1901 to 1961, together with the localities which were treated as towns in any one of the decenniums, but were later decimated and consequently lost their urban status. The towns have been represented by three different circles proportionate to the strength of their population, viz., (i) below 20,000, (ii) 20,000 to 50,000 and (iii) above 50,000. The radii of the circles correspond to the square roots of 50,000, 20,000 and 10,000 respectively. These circles are hatched by different shades to represent the year of the origin of the towns during 1901—61.

The number of decimated towns is limited to one only, which is shown in a pecked circle. This town, namely, Binka in Bolangir district originated in 1911, but lost its urban status in 1951. Its population had been declining for some decades and was reduced from 3,825 in 1941 to 3,151 in 1951. Not only on account of gradual decline in population but also on account of loss of urban characteristics, particularly due to decrease in proportion of non-agricultural classes of population, Binka was removed from the list of towns in 1951. Among the towns which have continued to be in existence from before 1901 with population of 5,000 or more are Cuttack, Berhampur, Puri, Sambalpur, Balasore, Parlakhemundi, Jeypore, Bhadrak, Kendrapara, Jajpur, Dhenkanal, Baripada, Bhuban and Sonepur. One of the most striking cases is that of Rourkela town which was just a village in 1951, but suddenly developed into a town with over 90,000 population in 1961 mainly due to the establishment of the steel plant there. The townships of Hirakud and Burla similarly owe their origin to industrial development in those localities during the last decade.

The following statement gives the number of towns during the seven decennial years :

Year of origin	No. of towns	No. of towns with population over 50,000	Between 20,000 to 50,000	Below 20,000
1901	14	1	3	10
1911	18	1	3	14
1921	20	1	2	17
1931	21	1	3	17
1941	29	1	3	25
1951	39	2	5	32
1961	62	4	8	50

There was speedy growth of towns during the decade 1951-61, the number of new towns added being 23. On the contrary, it was poor during 1921—31 as only one town was added to the list.


MAP No. 45
ORISSA
CITIES AND TOWNS ACCORDING TO THEIR PREDOMINANT FUNCTIONAL CHARACTER, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
Rajgangpur
ROURKELA
Sundargarh
Barbil
Rairangpur
Baripada
Jaleswar
Brajarajnagar
Jharsuguda
Hirakud
Burla
Sambalpur
Bargarh
Deogarh
Keonjhar
Balasore
Soro
Talcher
Jajpur Road
Bhadrak
Angul
Bhuban
Jajpur
Chandbali
Dhenkanal
Chowdwar
Athagarh
Banki
CUTTACK
BHUBANESWAR
Kendrapara
Khurda
Jatni
Kharlar Road
Patnagarh
Bolangir
Sonepur
Baudh
Kantabanji
Khariar
Titlagarh
Nayagarh
Bhawanipatna
Bhanjanagar
Bellaguntha
PURI
Surada
Aska
Khallikote
Hinjili
BERHAMPUR
Chatrapur
Gopalpur
Nowrangapur
Rayagada
Gunupur
Kotpad
Jeypore
Koraput
Parlakhemundi
Machkund
PREDOMINANT FUNCTIONAL CHARACTER
Transport Town
Service Town
Industrial Town
Primary Activities Town
Multi-functional Town
Town Attained Higher Status
Towns not Existing before 1961.
SIZE OF TOWNS
Above 100,000
75,000—100,000
50,000—75,000
30,000—50,000
20,000—30,000
10,000—20,000
Below 10,000
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 45

CITIES AND TOWNS ACCORDING TO THEIR PREDOMINANT FUNCTIONAL CHARACTER, 1961

The map shows the functional structure of the towns in Orissa according to their size of population. It represents the predominant functions of the towns with population of (i) above 100,000, (ii) 100,000 to 50,000, (iii) 50,000 to 30,000, (iv) 30,000 to 20,000, (v) 20,000 to 10,000 and (vi) below 10,000 population. The towns are shown according to the bulk of their respective population in six different sizes of circles. The circles are coloured in order to indicate the predominant functions of the towns. There are four categories of functions which are shown in separate coloured designs to differentiate their functional characters.

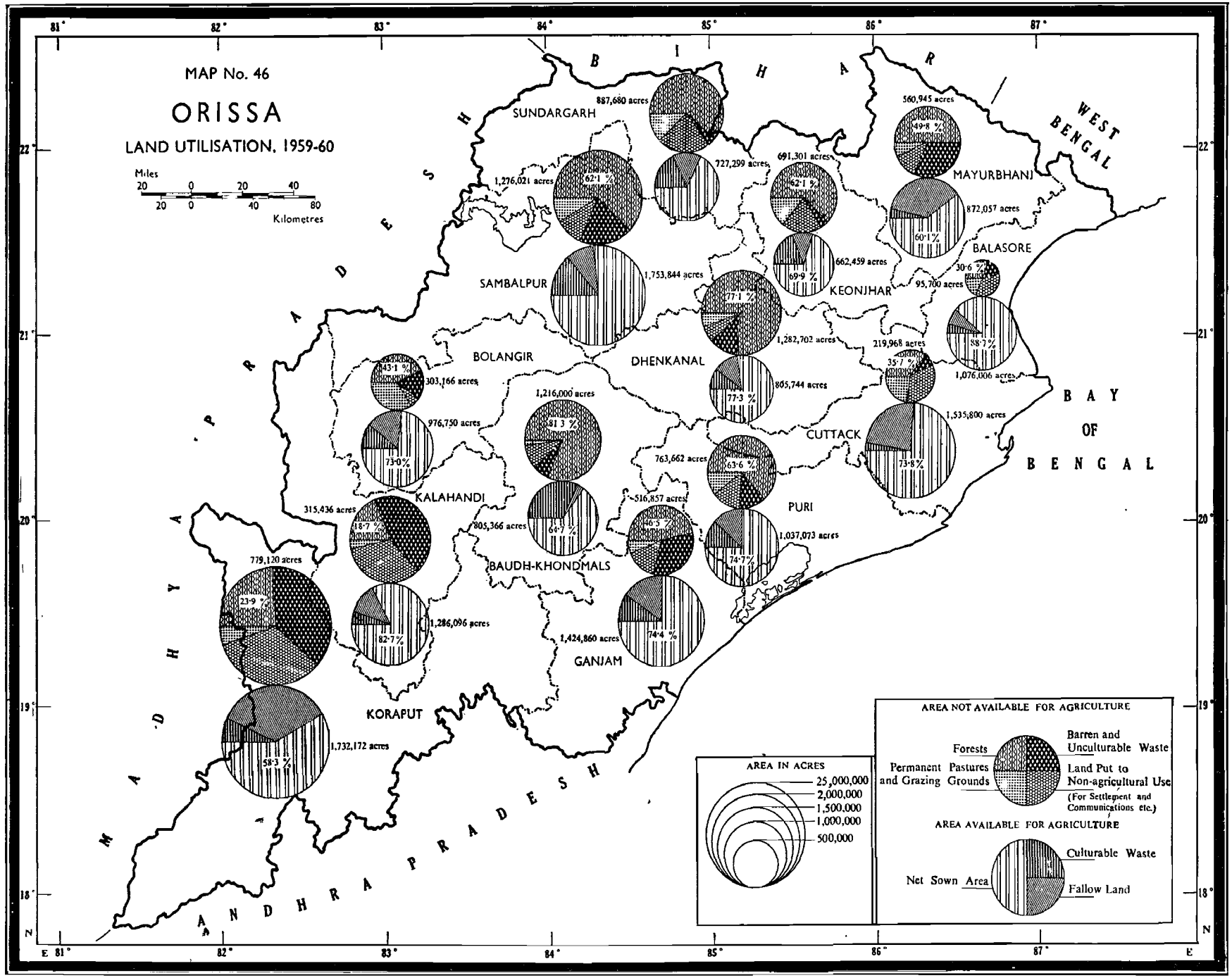
There are some towns with more than one as their predominant functions. So the circles are coloured or designed accordingly into the required number of sectors to represent the various functions of the town. Any particular economic function of a town in which more than 40 per cent of the town's population is actively engaged is treated, for purpose of this map, as the predominant function of the town. In case no single function fulfils the requirement, the leading two or three functions are taken to be the predominant functions of the town. But these functions must together represent more than 60 per cent of the working population of the town.

The above classification yields results as follows. Out of the 62 towns in Orissa 39 have 'other services' as their predominant function. Only four towns, viz., Rourkela, Brajarajnagar, Hirakud and Chowdwar have industry as their predominant function, although, Sonepur, Baudh, Bellaguntha, Bargarh and Jharsuguda have industry combined with other functions. Jatni is the only town having its predominant function of transport, but Kantabanji, Jharsuguda and Jajpur Road towns have also transport along with other functions. The towns, viz., Jaleswar, Soro, Bhuban, Angul and Hinjili have primary activities as their main function. The rest of the towns have either two or three functions each together making up the required percentage of working population.

A number of towns have risen from lower population size to higher size in 1961. A list of these towns and the size class to which they belonged in 1951 together with the higher size class to which they were promoted in 1961 is given below. Out of these towns the principal one is Puri which rose from Class III to Class II in 1961. The attainment of higher status by this town is shown on the map. Towns of smaller size have not been shown in the map but are given in the list below. One town, namely, Machkund, however, has lost in size class during the decade, going down from Class V to Class VI.

Name of town	Population size class in 1951	Population size class in 1961
Puri	III	II
Bhubaneswar	IV	III
Bhadrak	IV	III
Baripada	V	III
Birmitrapur	V	III
Jatni	V	IV
Bargarh	V	IV
Rayagada	V	IV
Keonjhar	V	IV
Sundargarh	V	IV
Nowrangapur	V	IV
Gunupur	V	IV
Banki	VI	V
Machkund	V	VI

IV. ECONOMIC ASPECTS


MAP No. 46
ORISSA
LAND UTILISATION, 1959-60
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
887,680 acres
727,299 acres
1,276,021 acres
62·1 %
SAMBALPUR
1,753,844 acres
77·1 %
BOLANGIR
43·1 %
303,166 acres
976,750 acres
73·0%
KALAHANDI
315,436 acres
18·7 %
779,120 acres
23·9 %
82·7%
1,286,096 acres
KORAPUT
58·3 %
1,732,172 acres
DHENKANAL
1,216,000 acres
81·3 %
805,366 acres
64·7 %
BAUDH-KHONDMALS
516,857 acres
46·5 %
1,424,860 acres
74·4 %
GANJAM
691,301 acres
62·1 %
662,459 acres
69·9 %
KEONJHAR
1,282,702 acres
77·3 %
805,744 acres
763,662 acres
63·6 %
1,037,073 acres
74·7%
PURI
CUTTACK
1,535,800 acres
73·8%
560,945 acres
49·8 %
MAYURBHANJ
872,057 acres
60·1%
BALASORE
30·6 %
95,700 acres
219,968 acres
35·7 %
88·7%
1,076,006 acres
AREA IN ACRES
25,000,000
2,000,000
1,500,000
1,000,000
500,000
AREA NOT AVAILABLE FOR AGRICULTURE
Forests
Barren and Unculturable Waste
Permanent Pastures and Grazing Grounds
Land Put to Non-agricultural Use
(For Settlement and Communications etc.)
AREA AVAILABLE FOR AGRICULTURE
Culturable Waste
Net Sown Area
Fallow Land

MAP No. 46

LAND UTILIZATION, 1959

The manner of utilization of land in the districts of Orissa during 1959 is displayed in the map. Lands used in each district are divided into two categories, agricultural and non-agricultural, and are represented by proportionate circles. The circle showing agricultural area is subdivided into three sectors proportionate to the area devoted to (a) net sown area (b) current fallows and (c) culturable waste. On the other hand, the circle meant for showing non-agricultural area is proportionately subdivided into 4 sectors to represent (a) forest (b) barren and unculturable waste (c) land put to non-agricultural uses and (d) permanent pastures. Sectors in each circle are hatched in suitable shades to represent the utilization of land.

The following statement gives the figures regarding land utilization in the State during 1959 :—

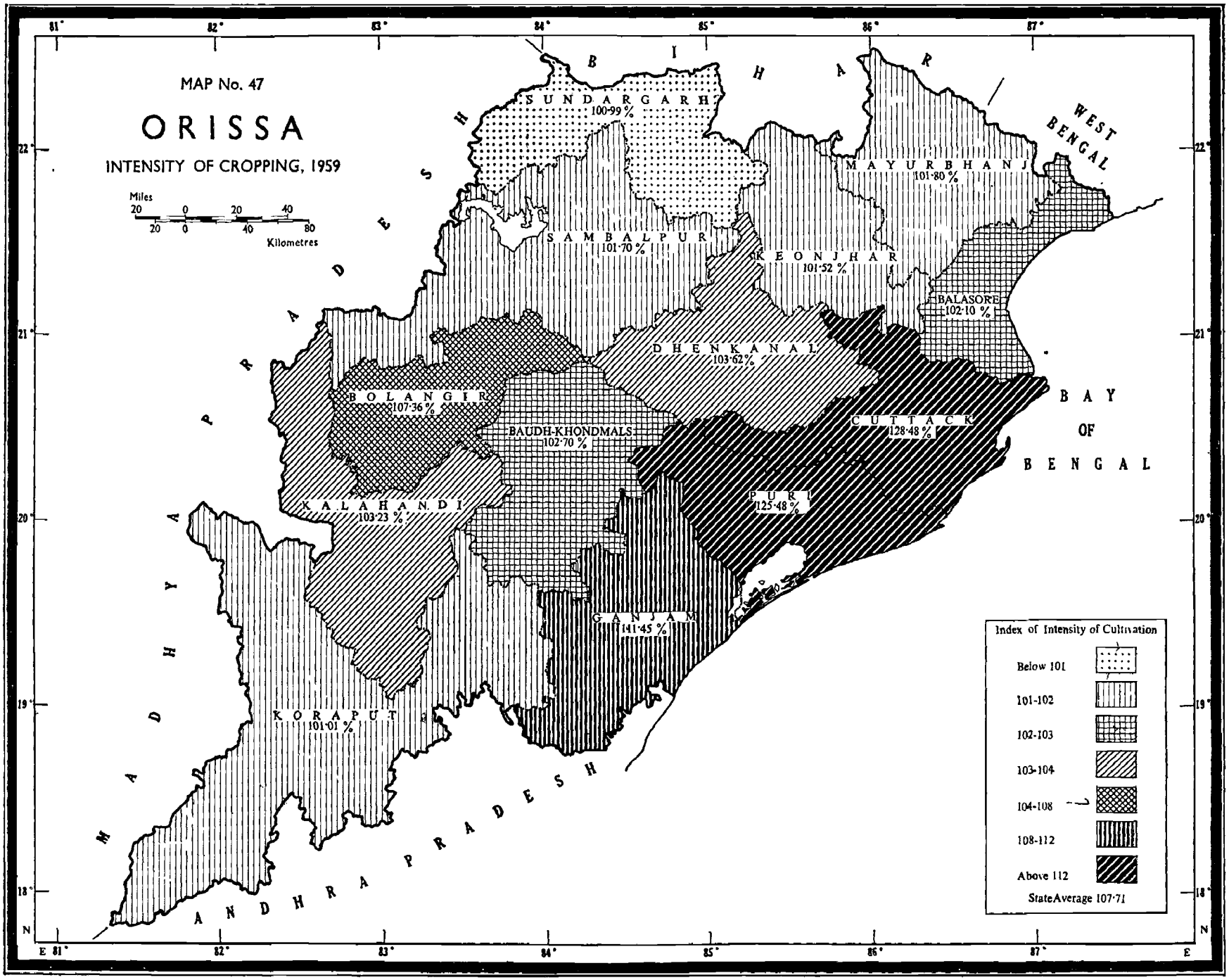
Agricultural land (in acres)

1.	Net sown area	14,695,526	18,289,268
2.	Current fallows	1,465,615	
3.	Culturable waste	2,128,127	

Non-agricultural land (in acres)

1.	Forest	8,908,558	17,667,743
2.	Barren and unculturable waste	3,819,723	
3.	Land put to non-agricultural uses	3,382,753	
4.	Permanent pastures	1,556,709	
	Total area agricultural and non-agricultural		35,957,011
	Aggregate area of the State ...		38,509,952

Source — Director of Agriculture and Food Production, Orissa


MAP No. 47
ORISSA
INTENSITY OF CROPPING, 1959
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
100·99 %
SAMBALPUR
101·70 %
MAYURBHANJ
101·80 %
KEONJHAR
101·52 %
BALASORE
102·10 %
DHENKANAL
103·62 %
BOLANGIR
107·36 %
BAUDH-KHONDMALS
102·70 %
CUTTACK
128·48 %
PURI
125·48 %
KALAHANDI
103·23 %
GANJAM
141·45 %
KORAPUT
101·01 %
Index of Intensity of Cultivation
Below 101
101-102
102-103
103-104
104-108
108-112
Above 112
StateAverage 107·71
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E 81° 82° 83° 84° 85° 86° 87° E

MAP No. 47

INTENSITY OF CROPPING, 1959

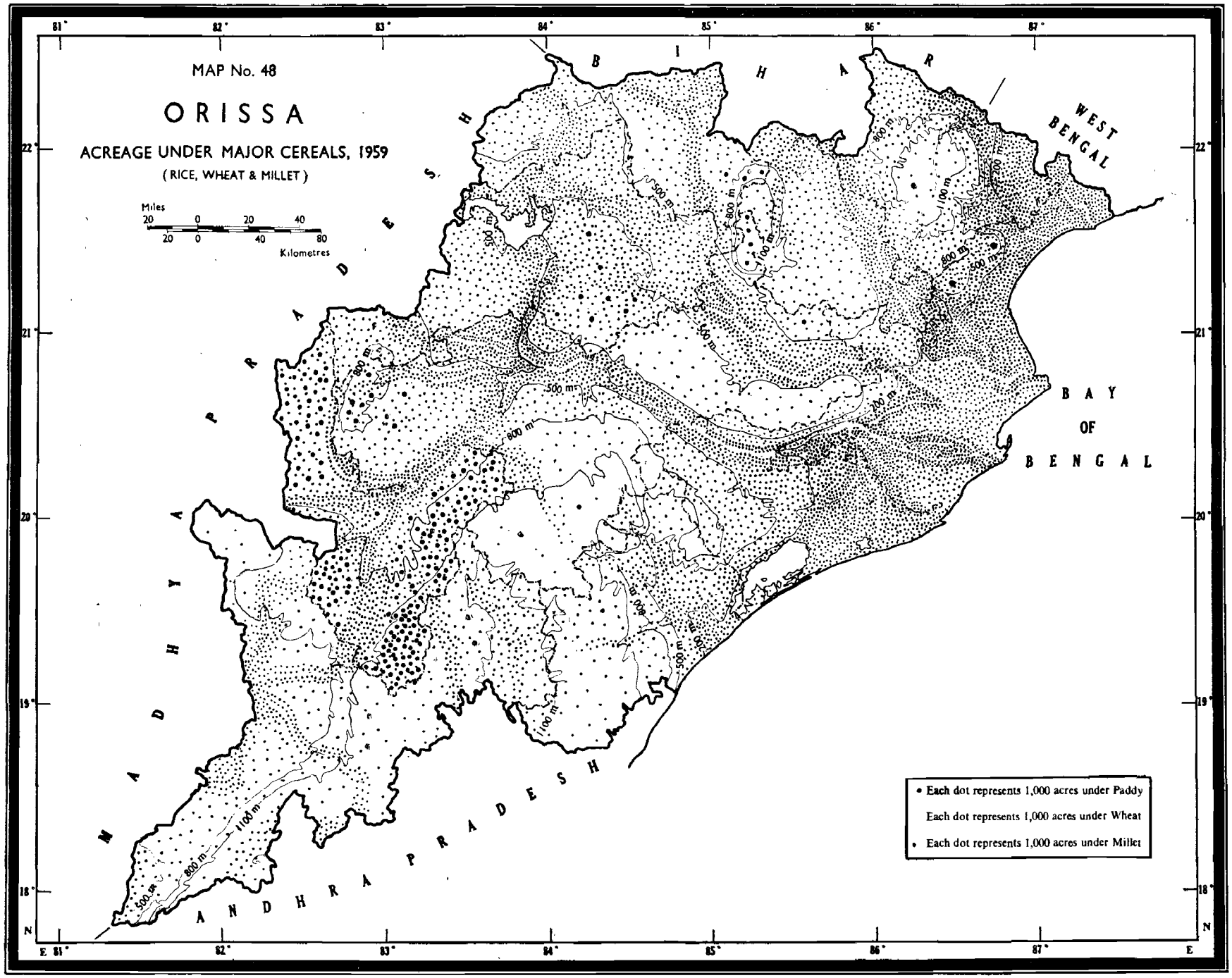
The map demonstrates the intensity of cropping in the districts of Orissa in 1959. The intensity index is calculated by working out $\frac{\text{gross sown area} \times 100}{\text{net sown area}}$ for each district. The result obtained is grouped into seven ranges, viz., below 101, 101 to 102, 102 to 103, 103 to 104, 104 to 108, 108 to 112 and above 112 per cent. The districts coming under the above groups are hatched in suitable shades by choropleth method.

Gross sown area in the State is 15,829,316 acres while net sown area is 14,695,526 acres. Thus the intensity of cropping of the State comes to 107·71 per cent. The district having the highest intensity is Cuttack (128·48 per cent) followed by Puri (125·48 per cent). The district with the lowest intensity is Sundagarh (100·99 per cent).

The following statement gives the index of intensity of cropping in the districts of Orissa in 1959 :—

District	Intensity Index
Cuttack	128·48
Puri	125·48
Ganjam	111·45
State Average	107·71
Bolangir	107·36
Dhenkanal	103·62
Kalahandi	103·23
Baudh-Khondmals	102·72
Balasore	102·10
Mayurbhanj	101·80
Sambalpur	101·75
Keonjhar	101·52
Koraput	101·01
Sundargarh	100·99

Source — Director of Agriculture and Food Production, Orissa


MAP No. 48
ORISSA
ACREAGE UNDER MAJOR CEREALS, 1959
(RICE, WHEAT & MILLET)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Each dot represents 1,000 acres under Paddy
Each dot represents 1,000 acres under Wheat
Each dot represents 1,000 acres under Millet

MAP No. 48

ACREAGE UNDER MAJOR CEREALS, 1959

(Rice, wheat and millet)

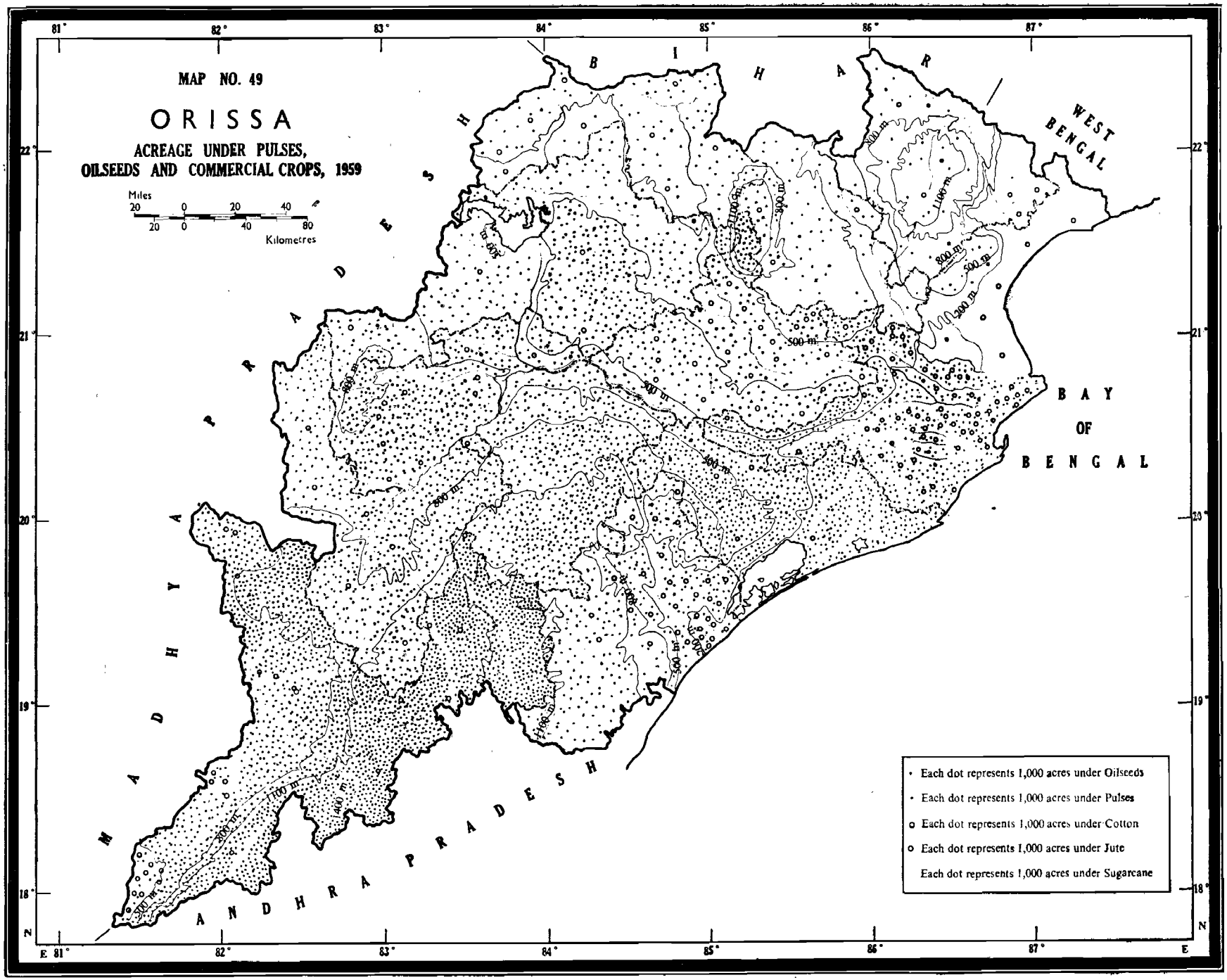
The map displays the acreage under major cereals, viz., rice, wheat and millet in the districts of Orissa in 1959. The total acreage under paddy in the State was 9,907,301 acres, under wheat 20,640 acres, and under millet 199,790 acres. The acreage under each crop is shown by means of dots. Each red dot represents 1,000 acres under rice, each blue dot 1,000 acres under wheat and each black dot 1,000 acres under millet cultivation. There is high concentration of cropping, as the map shows, in the river valleys and coastal plains. The acreage decreases as the altitude increases, as revealed by a study of contours marked in the map.

The highest and lowest acreages in the State are found with regard to rice in Cuttack (1,316,900) and Baudh-Khondmals (326,073), with regard to wheat in Koraput (6,760) and Ganjam (16), and with regard to millet in Kalahandi (176,000) and Myurbhanj (105) respectively. Some districts do not have millet cultivation at all.

The statement below gives the acreage under rice, wheat and millet in the districts of the State in the agricultural year 1959-60:

State/ District	Area in acres under		
	Rice	Wheat	Millet
ORISSA	9,907,301	20,640	199,790
Kalahandi	688,500	2,000	176,000
Koraput	784,700	6,760	—
Sambalpur	1,108,280	3,245	8,150
Bolangir	810,437	2,321	6,990
Baudh-Khondmals	326,073	529	570
Ganjam	433,969	16	585
Sundargarh	552,060	600	2,800
Dhenkanal	606,320	282	4,590
Puri	900,895	1,093	—
Keonjhar	544,249	391	—
Cuttack	1,316,900	2,900	—
Mayurbhanj	799,288	425	105
Balasore	1,035,630	78	—

Source — Director of Agriculture and Food Production, Orissa


MAP NO. 49
ORISSA
ACREAGE UNDER PULSES, OILSEEDS AND COMMERCIAL CROPS, 1959
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Each dot represents 1,000 acres under Oilseeds
Each dot represents 1,000 acres under Pulses
Each dot represents 1,000 acres under Cotton
Each dot represents 1,000 acres under Jute
Each dot represents 1,000 acres under Sugarcane
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 49

ACREAGE UNDER PULSES, OIL-SEEDS AND COMMERCIAL CROPS, 1959

The acreage under pulses, oil-seeds and commercial crops are shown in the map. There is no cultivation of some commercial crops like tea and coffee in the State. The map shows other commercial crops which are grown, viz., jute, sugar-cane and cotton along with pulses and oil-seeds. The acreage under these crops is shown by dots, both hollow and solid in different colours, each such dot representing 1,000 acres under cultivation. The solid black dot represents oil-seeds, the hollow black dot represents jute, the solid blue dot represents sugar-cane, the solid red dot represents pulses and finally the hollow red dot represents cotton.

The following statement gives the acreage under different crops in the districts of Orissa during 1959 :

District	Pulses	Oil-seeds	Cotton	Jute	Sugar-cane
Kalahandi	139,000	106,000	1,000	2,000	5,000
Koraput	60,800	1,064,210	1,898	11,460	16,330
Sambalpur	140,666	53,082	1,394	439	8,140
Bolangir	106,945	87,779	1,158	4,409	5,555
Baudh-Khondmals	196,214	83,314	—	—	175
Ganjam	99,322	36,134	—	15,621	3,866
Sundargarh	7,516	33,925	4,900	117	1,227
Dhenkanal	55,750	73,232	5,575	5,363	8,335
Puri	256,811	28,886	537	1,430	4,900
Keonjhar	21,488	10,566	1,136	600	1,500
Cuttack	198,925	50,950	600	30,000	8,085
Mayurbhanj	6,650	6,293	565	2,102	1,555
Balasore	3,347	1,297	7	2,267	1,650

Source — Director of Agriculture and Food Production, Orissa

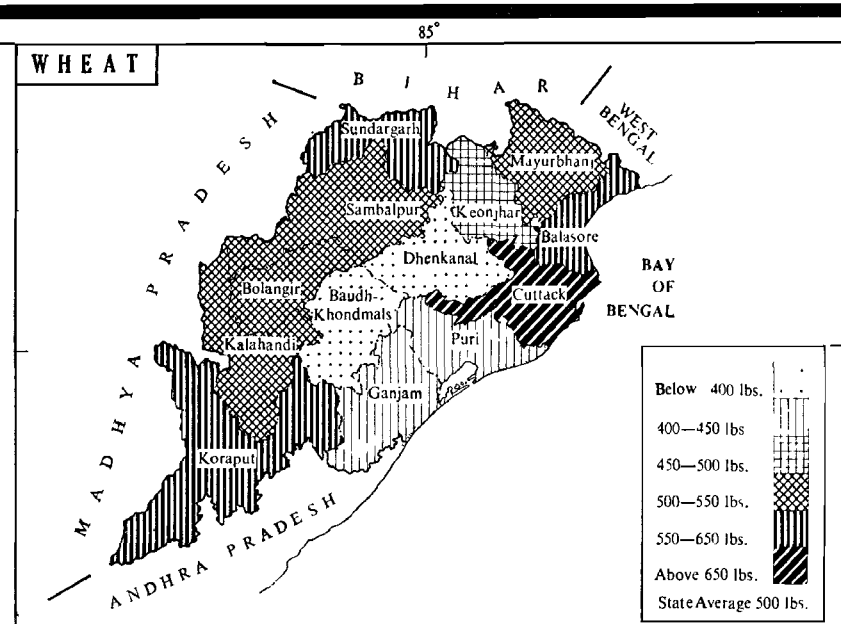
MAP NO. 50

ORISSA

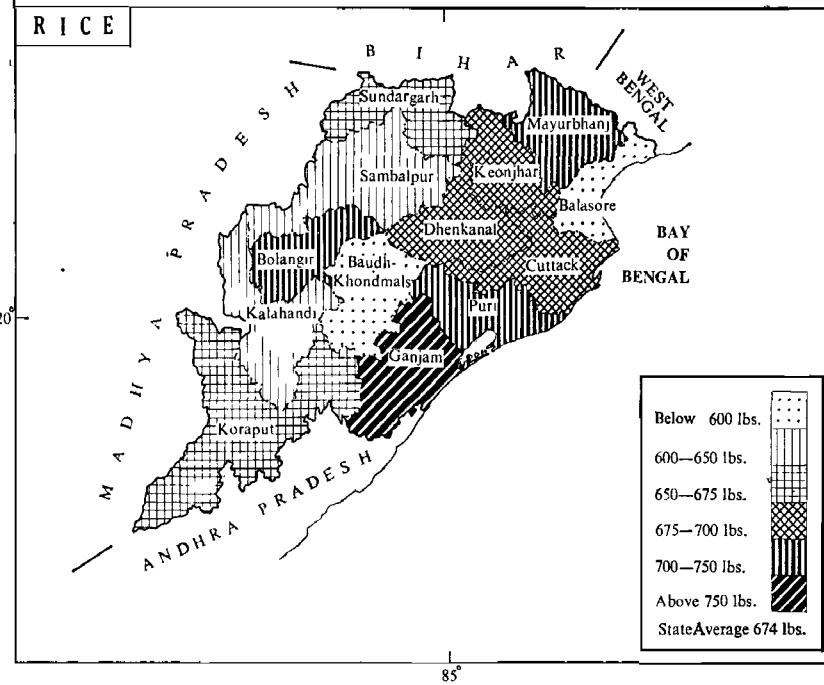
YIELD PER ACRE OF RICE, WHEAT AND PULSES, 1957–61

Miles
40 0 40 80
40 0 40 80 120 160
Kilometres

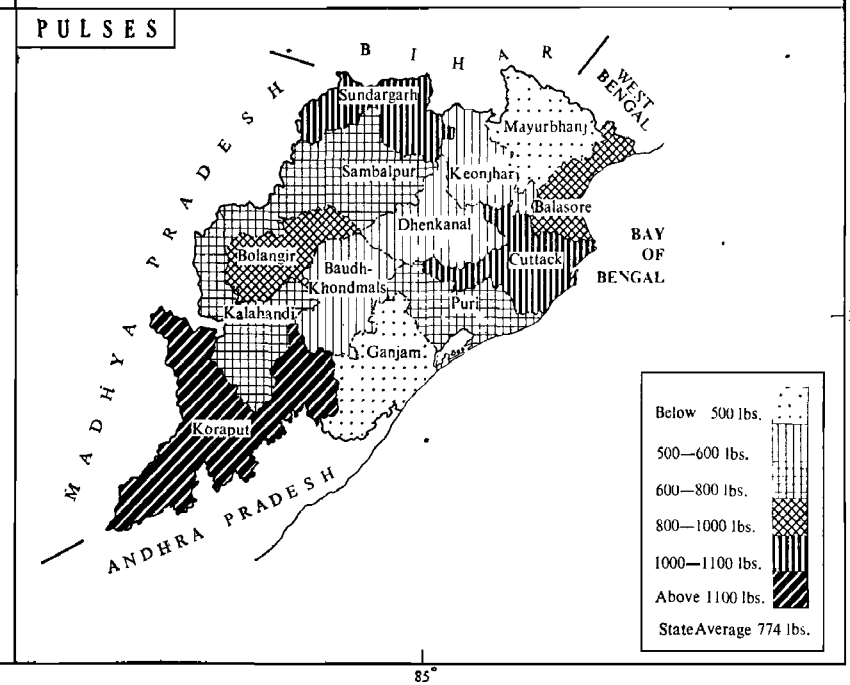
WHEAT



RICE



PULSES



MAP No. 50

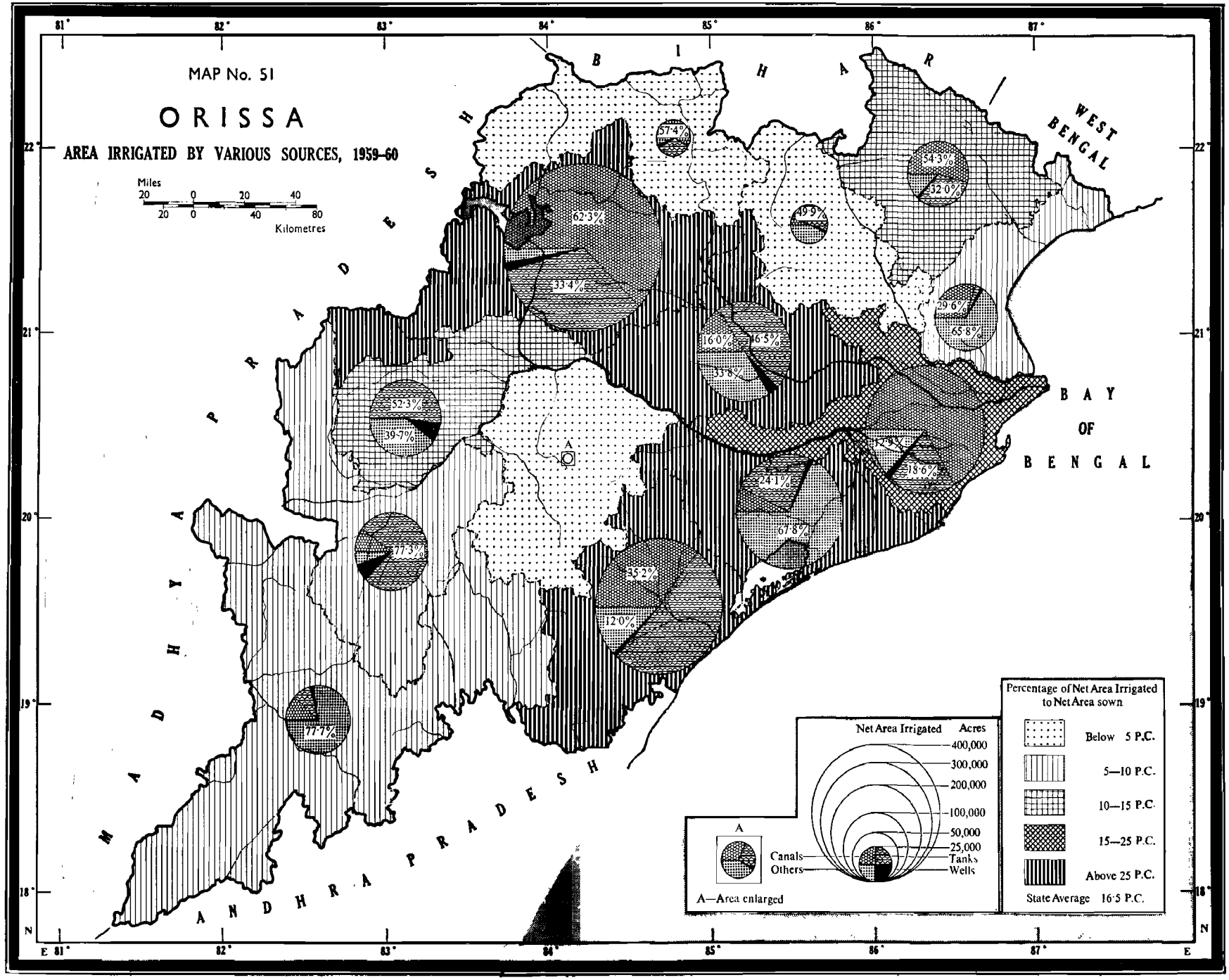
YIELD PER ACRE OF RICE, WHEAT AND PULSES, 1957—61

This triplet map shows the yield per acre of rice, wheat and pulses for a period of 5 years, 1957—61 in the districts of Orissa. The yield per acre of the above three crops is measured in pounds for these years and the annual average yield is worked out. The yield of rice, wheat and pulses is shown separately in three small maps drawn in one page. The yield per acre of rice is grouped into six ranges, viz., below 600, 600 to 650, 650 to 675, 675 to 700, 700 to 750 and above 750 lbs. The yield per acre of wheat is grouped into the same number of ranges, namely, six, as follows: below 400, 400 to 450, 450 to 500, 500 to 550, 550 to 650 and above 650 lbs. Lastly, the yield per acre of pulses is also grouped into the following six ranges, viz., below 500, 500 to 600, 600 to 800, 800 to 1,000, 1,000 to 1,100 and above 1,100 lbs. The districts are hatched in suitable black shades according to the ranges allotted. The highest per acre yield of rice, wheat and pulses is found in the districts of Ganjam, Cuttack and Koraput respectively. On the other hand, the lowest per acre yield of the above crops occurs in the districts of Baudh-Khondmals (for the first two crops) and Mayurbhanj respectively. The figures given above are based on departmental reports. They do not appear to be reliable in all the cases, but are given here for whatever they are worth.

The statement below gives the average yield per acre of rice, wheat and pulses in pounds in the districts of Orissa during 1957—61 :

District	Rice lbs.	Wheat lbs.	Pulses lbs.
State Average	674	500	774
Baudh-Khondmals	561	304	596
Balasore	596	575	919
Sambalpur	646	520	663
Kalahandi	623	523	794
Koraput	670	617	1,215
Sundargarh	664	629	1,059
Cuttack	679	691	1,027
Dhenkanal	694	353	518
Keonjhar	688	455	527
Bolangir	716	506	989
Mayurbhanj	736	503	484
Puri	724	403	776
Ganjam	762	426	497

Source — Director of Agriculture and Food Production Orissa


MAP No. 51
ORISSA
AREA IRRIGATED BY VARIOUS SOURCES, 1959-60
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
57·4%
62·3%
33·4%
49·9%
54·3%
32·0%
29·6%
65·8%
16·0%
16·5%
33·8%
52·3%
39·7%
32·9%
18·6%
24·1%
67·8%
77·3%
35·2%
12·0%
77·7%
A
Net Area Irrigated Acres
400,000
300,000
200,000
100,000
50,000
25,000
Canals
Others
Tanks
Wells
A—Area enlarged
Percentage of Net Area Irrigated to Net Area sown
Below 5 P.C.
5—10 P.C.
10—15 P.C.
15—25 P.C.
Above 25 P.C.
State Average 16·5 P.C.
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 51

AREA IRRIGATED BY VARIOUS SOURCES, 1959-60

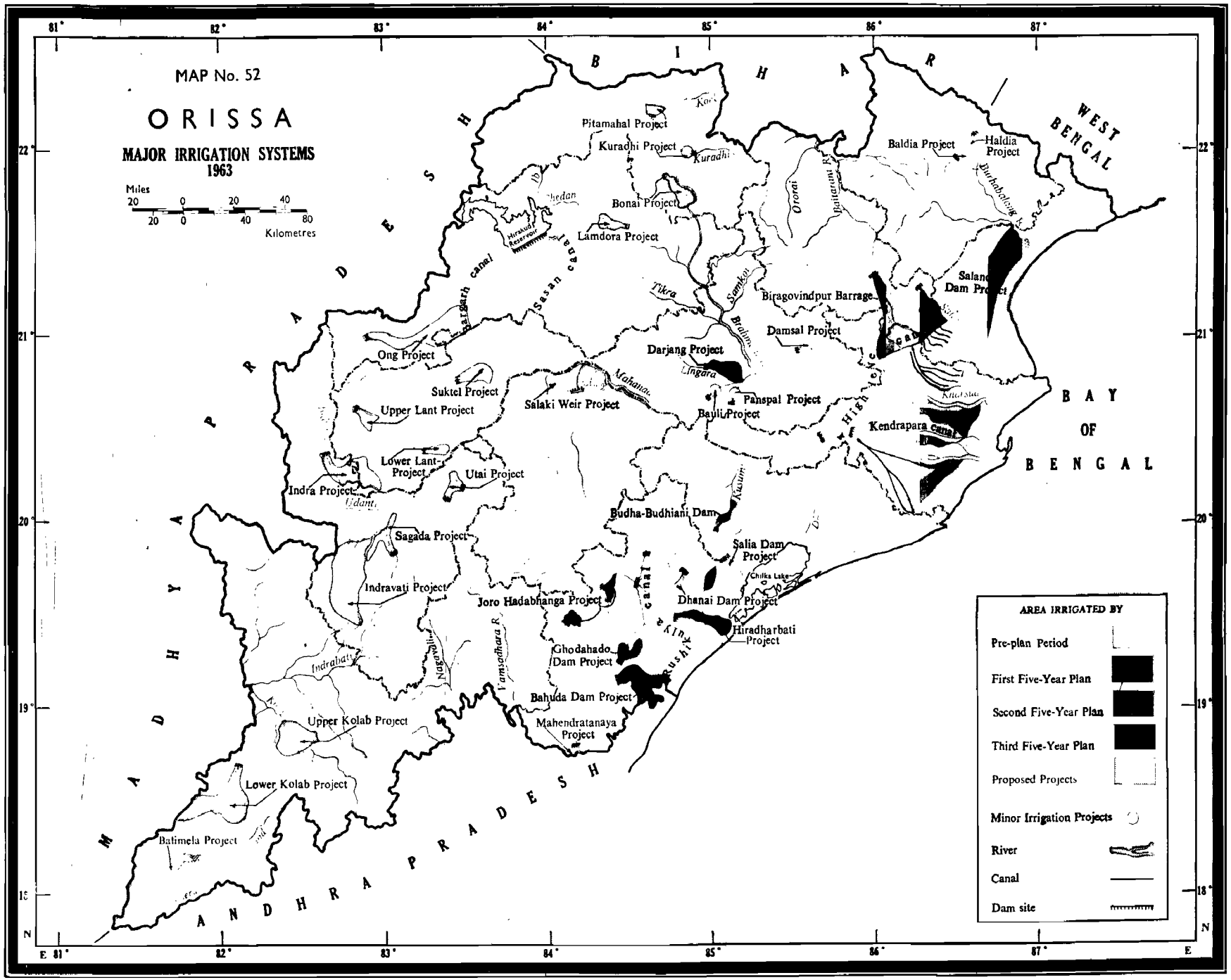
Irrigation is essential for a country like Orissa, where three-fourths of the State's population depend upon agriculture for their livelihood. The map is drawn to show the types of irrigation as well as the extent of area irrigated in the districts of Orissa during 1959-60. In each district, pie-graphs are drawn proportionate to the net irrigated area of the district. Each circle is subdivided by sectors, which represent the proportion of different kinds of irrigation sources, viz., canals, tanks, wells and other sources. The sectors are shaded to differentiate one source from the other. The percentage of net irrigated area to the net sown area is calculated for every district and grouped into five ranges, viz., below 5, 5 to 10, 10 to 15, 15 to 25 and above 25 per cent. The districts coming under the respective groups are hatched in suitable shades outside the circles.

The total area irrigated in the State is 2,429,439 acres which is 16·5 per cent of 14,695,526 acres, the net sown area. The district of Sambalpur has the largest irrigated area, viz., 603,082 acres, while Baudh-Khondmals the smallest, namely, 1,598 acres only. The coastal districts of Cuttack, Puri and Ganjam and the adjoining district of Dhenkanal are moderately benefited by irrigation.

The statement below gives the acreage under irrigation by various sources in the districts of Orissa:

State/District		Canals	Tanks	Wells	Other sources	Total area irrigated by various sources	Net sown area
ORISSA	..	917,827	866,512	55,536	589,564	2,429,439	14,695,526
Kalahandi	..	13,000	99,000	9,000	7,000	128,000	1,286,096
Koraput	..	11,320	9,040	1,630	76,150	98,140	1,732,172
Sambalpur	..	375,594	201,006	9,814	16,668	603,082	1,753,844
Bolangir	..	—	64,935	10,024	49,222	124,181	976,750
Baudh-Khondmals	..	500	408	32	658	1,598	805,366
Ganjam	..	138,557	204,417	3,418	47,617	394,009	1,424,860
Sundargarh	..	15,630	9,178	813	1,605	27,226	727,299
Dhenkanal	..	34,302	99,404	7,910	72,443	214,059	805,744
Puri	..	18,404	66,676	3,575	187,138	275,793	1,037,073
Keonjhar	..	1,700	16,111	630	13,830	32,271	662,459
Cuttack	..	233,000	65,000	6,000	45,000	349,000	1,535,800
Mayurbhanj	..	48,320	28,471	1,250	10,980	89,021	872,057
Balasore	..	27,500	2,866	1,440	61,253	93,059	1,076,006

Source — Director of Agriculture and Food Production, Orissa


MAP No. 52
ORISSA
MAJOR IRRIGATION SYSTEMS
1963
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Pitamahal Project
Kuradhi Project
Bonai Project
Lamdora Project
Baldia Project
Haldia Project
Biragovindpur Barrage
Damsal Project
Darjang Project
Ong Project
Suktel Project
Upper Lant Project
Salaki Weir Project
Panspal Project
Bauli Project
Kendrapara Canal
Lower Lant-Project
Utai Project
Indra Project
Budha-Budhiani Dam
Sagada Project
Salia Dam Project
Indravati Project
Joro Hadabhanga Project
Dhanai Dam Project
Hiradharbati Project
Ghodahado Dam Project
Bahuda Dam Project
Mahendratanaya Project
Upper Kolab Project
Lower Kolab Project
Balimela Project
AREA IRRIGATED BY
Pre-plan Period
First Five-Year Plan
Second Five-Year Plan
Third Five-Year Plan
Proposed Projects
Minor Irrigation Projects
River
Canal
Dam site

MAP No. 52

MAJOR IRRIGATION SYSTEMS, 1963

Due to favourable rainfall and physiography, Orissa has a large irrigation potential. This map shows the major irrigation systems and a few other important irrigation schemes of the State. The colour utilization is as follows:

Green Screen	...	Pre-Plan Period
Solid Blue	...	First Plan Period
Solid Green	..	Second Plan Period
Solid Pink	...	Third Plan Period
Green Circles	...	Minor Irrigation

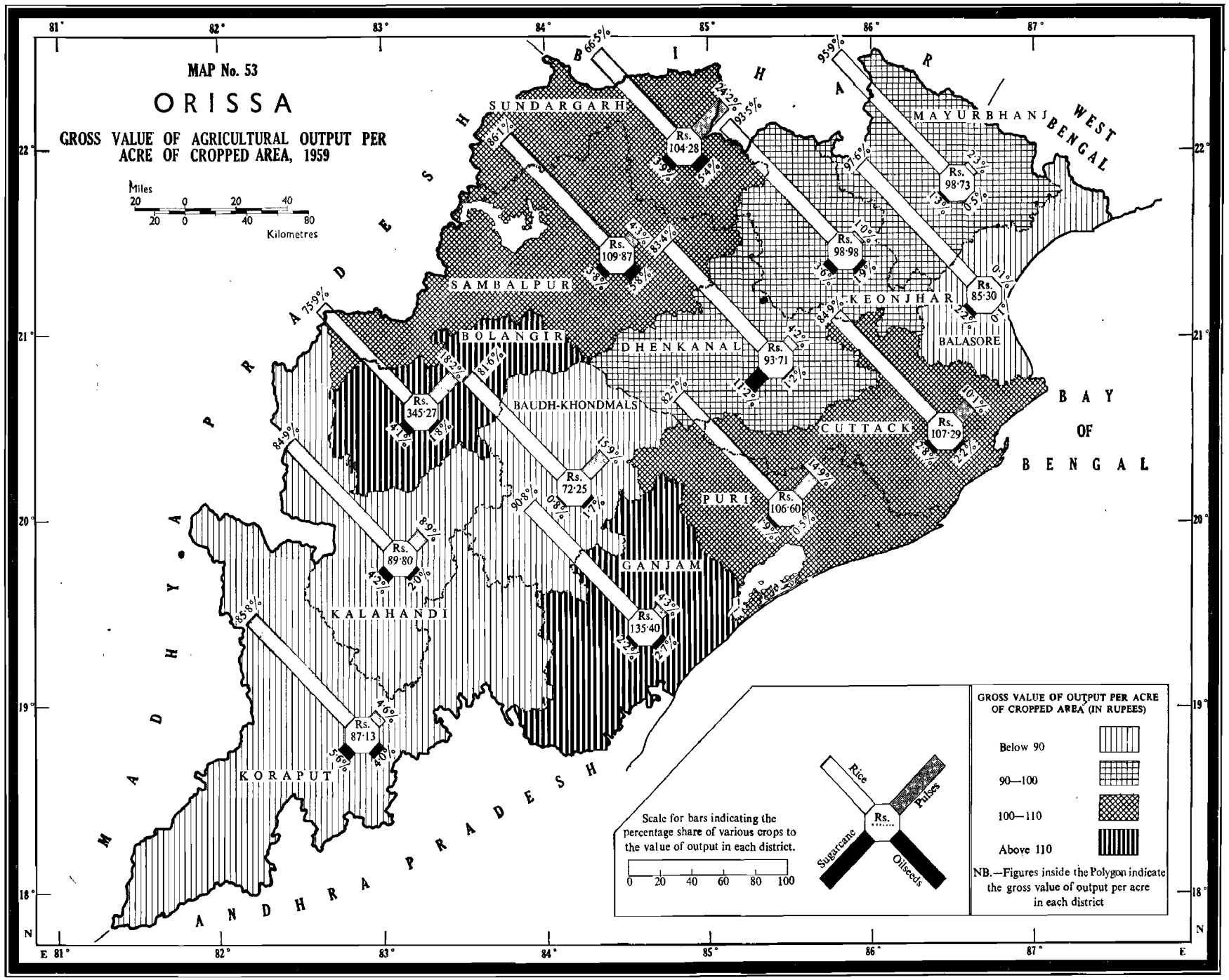
Pre-Plan Period—There were four large irrigation systems, namely, (i) Mahanadi and Brahmani canals in Cuttack and Balasore districts (ii) Rushikulya canals in Ganjam district (iii) Baldia and Haldia project in Mayurbhanj district and (iv) High Level Canal, Range III in Balasore district. These four systems commanded a total irrigated area of 3·7 lakh acres during the year 1951.

First & Second Plan Periods—A number of important major irrigation systems were built during the first two Plan periods, the important among them being the Hirakud canals, the Delta irrigation project, the Salandi project and a number of medium irrigation projects, viz., Salki, Salia, Derjang, Budhabudhiani, Dhanei and Ghodahado. The potential area benefited by irrigation from these schemes is 7·06 lakh acres. Thus by the year 1961 the total area of potential irrigation was 10·76 lakh acres.

Third Plan Period—In addition to some continuing projects, a number of new projects were taken up for execution during the Third Plan period. The important among such projects are Biragovindapur (Anandapur), Bahuda, Hiradharbati and Jorohadbhangi. The target of additional potential in the Third Plan period is 8·57 lakh acres. If this is achieved the total irrigation potential of the State will stand at 19·33 lakh acres by the end of the Third Five-Year Plan.

There is, however, a wide gap between the potential and the utilization areas. It has been estimated that the utilization at the end of the Second Plan was 8·72 lakh acres as against the potential area of 10·76 lakh acres at the outlets. The effort in the Third Plan is to achieve the utilization up to 89 per cent of the potential, viz., 16·93 lakh acres out of the potential of 19·33 lakh acres. The actuals may, however, be lesser in both aspects. The official estimate appears to be optimistic.

Source — (i) Chief Engineer, Irrigation, Orissa
(ii) Chief Engineer, Rural Engineering Organization, Orissa
(iii) Third Plan Mid-term Appraisal (Govt. of Orissa)


MAP No. 53
ORISSA
GROSS VALUE OF AGRICULTURAL OUTPUT PER ACRE OF CROPPED AREA, 1959
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH
SAMBALPUR
BOLANGIR
DHENKANAL
BAUDH-KHONDMALS
MAYURBHANJ
KEONJHAR
BALASORE
CUTTACK
PURI
GANJAM
KALAHANDI
KORAPUT
Rs. 104·28
Rs. 109·87
Rs. 345·27
Rs. 72·25
Rs. 89·80
Rs. 135·40
Rs. 87·13
Rs. 93·71
Rs. 98·98
Rs. 98·73
Rs. 85·30
Rs. 107·29
Rs. 106·60
BIHAR
WEST BENGAL
ORISSA
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Scale for bars indicating the percentage share of various crops to the value of output in each district.
0 20 40 60 80 100
Rice
Pulses
Rs.
Sugarcane
Oilseeds
GROSS VALUE OF OUTPUT PER ACRE OF CROPPED AREA (IN RUPEES)
Below 90
90—100
100—110
Above 110
NB.—Figures inside the Polygon indicate the gross value of output per acre in each district

MAP No. 53

GROSS VALUE OF AGRICULTURAL OUTPUT PER ACRE OF CROPPED AREA, 1959

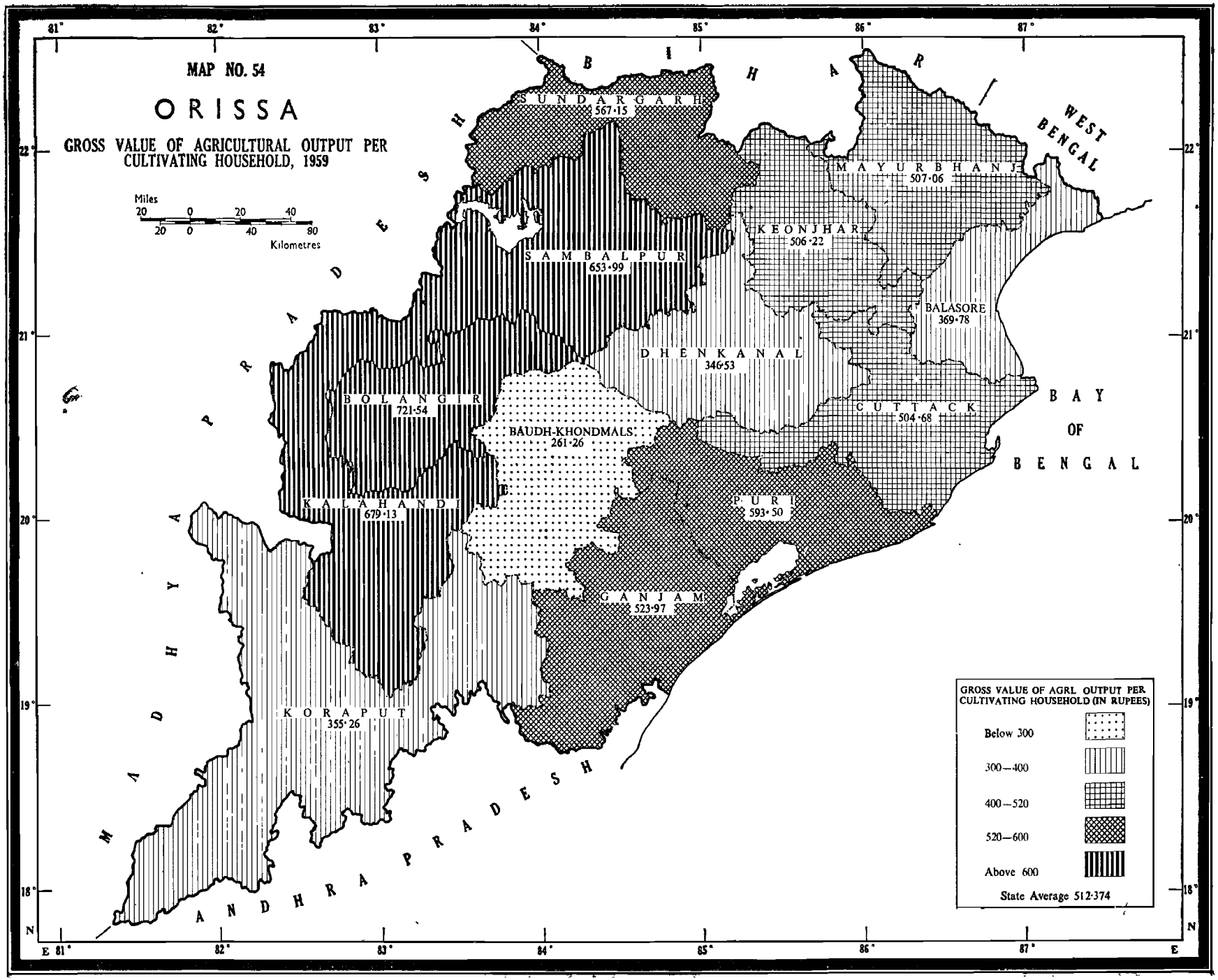
The gross value of agricultural products per acre of cropped area in a district is obtained by dividing the total value of agricultural products by the total acreages of land under cultivation of the respective crops. Polygons are drawn in all the districts and the value of agricultural output per acre of cropped area is put inside them. Along the sides of the polygon, four rectangles have been drawn proportionate to the percentage value of four different crops in the district, namely, rice, oil-seeds, pulses and sugar-cane. The percentage value of each crop is written at the head of the rectangle concerned, representing a particular crop. Thereafter the area outside the geometrical design (polygon and rectangles) is hatched by choropleth technique to show the variation in value of output per acre of cropped area. Such value of output per acre has been shown in rupees in four different ranges, namely, below Rs. 90, Rs. 90—100, Rs. 100—110 and above Rs. 110.

In the lowest range of gross value of output occur four districts, namely, Koraput, Kalahandi, Baudh-Khondmals and Balasore. They get a value of below Rs. 90 per acre of cropped area, the lowest value occurring in district Baudh-Khondmals (Rs. 72·25). In the highest range of gross value are included two districts, namely, Ganjam and Bolangir. The percentage value of cash crops, namely, pulses, oil-seeds and sugar-cane is comparatively higher in these two districts resulting in high increase in the gross value of total output. On the other hand, the districts which belong to the lowest range of gross value have poor percentage of cash crops grown. Balasore is a notable example where the highest percentage of value of crops, namely, 97·6 is attained on account of rice. Yet in respect of other crops the percentage value is so small that the gross value of output in the district has scaled down to the low range. Districts which have high percentage of rice among the crops grown are Balasore, Mayurbhanj, Keonjhar and Ganjam. The districts where the percentage of cash crops is high are Bolangir, Ganjam, Baudh-Khondmals and Sundargarh.

The following statement gives the value of agricultural output per acre and the percentage value of different crops grown in the districts of Orissa :

District	Value of output per acre	Percentage value of crops			
		Rice	Pulses	Oil-seeds	Sugar-cane
Kalahandi	89·80	84·9	8·9	2·0	4·2
Koraput	87·13	85·8	4·6	4·0	5·6
Sambalpur	109·87	86·1	4·3	5·8	3·8
Bolangir	345·27	75·9	18·2	1·8	4·1
Baudh-Khondmals	72·25	81·6	15·9	1·7	0·8
Ganjam	135·40	90·8	4·3	2·7	2·2
Sundargarh	104·28	66·5	24·2	5·4	3·9
Dhenkanal	93·71	83·4	4·2	1·2	11·2
Puri	106·60	82·7	14·9	0·5	1·9
Keonjhar	98·98	93·5	1·0	1·9	3·6
Cuttack	107·29	84·9	10·1	2·2	2·8
Mayurbhanj	98·73	95·9	2·3	0·5	1·3
Balasore	85·30	97·6	0·1	0·1	2·2

Source — (i) Director of Agriculture and Food Production, Orissa
(ii) Director of Marketing, Orissa


MAP NO. 54
ORISSA
GROSS VALUE OF AGRICULTURAL OUTPUT PER CULTIVATING HOUSEHOLD, 1959
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 567·15
MAYURBHANJ 507·06
KEONJHAR 506·22
SAMBALPUR 653·99
BALASORE 369·78
DHENKANAL 346·53
BOLANGIR 721·54
CUTTACK 504·68
BAUDH-KHONDMALS 261·26
KALAHAND 679·13
PURI 593·50
GANJAM 523·97
KORAPUT 355·26
GROSS VALUE OF AGRL OUTPUT PER CULTIVATING HOUSEHOLD (IN RUPEES)
Below 300
300—400
400—520
520—600
Above 600
State Average 512·374
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 54

GROSS VALUE OF AGRICULTURAL OUTPUT PER CULTIVATING HOUSEHOLD, 1959

The gross value of agricultural output per district was calculated on the basis of the acreage under different crops multiplied by the market rate per maund of the crop concerned as obtained from the Directorate of Marketing, Orissa. The figures available from this source do not appear to be firm. The results are, however, shown in the map for whatever worth they may have.

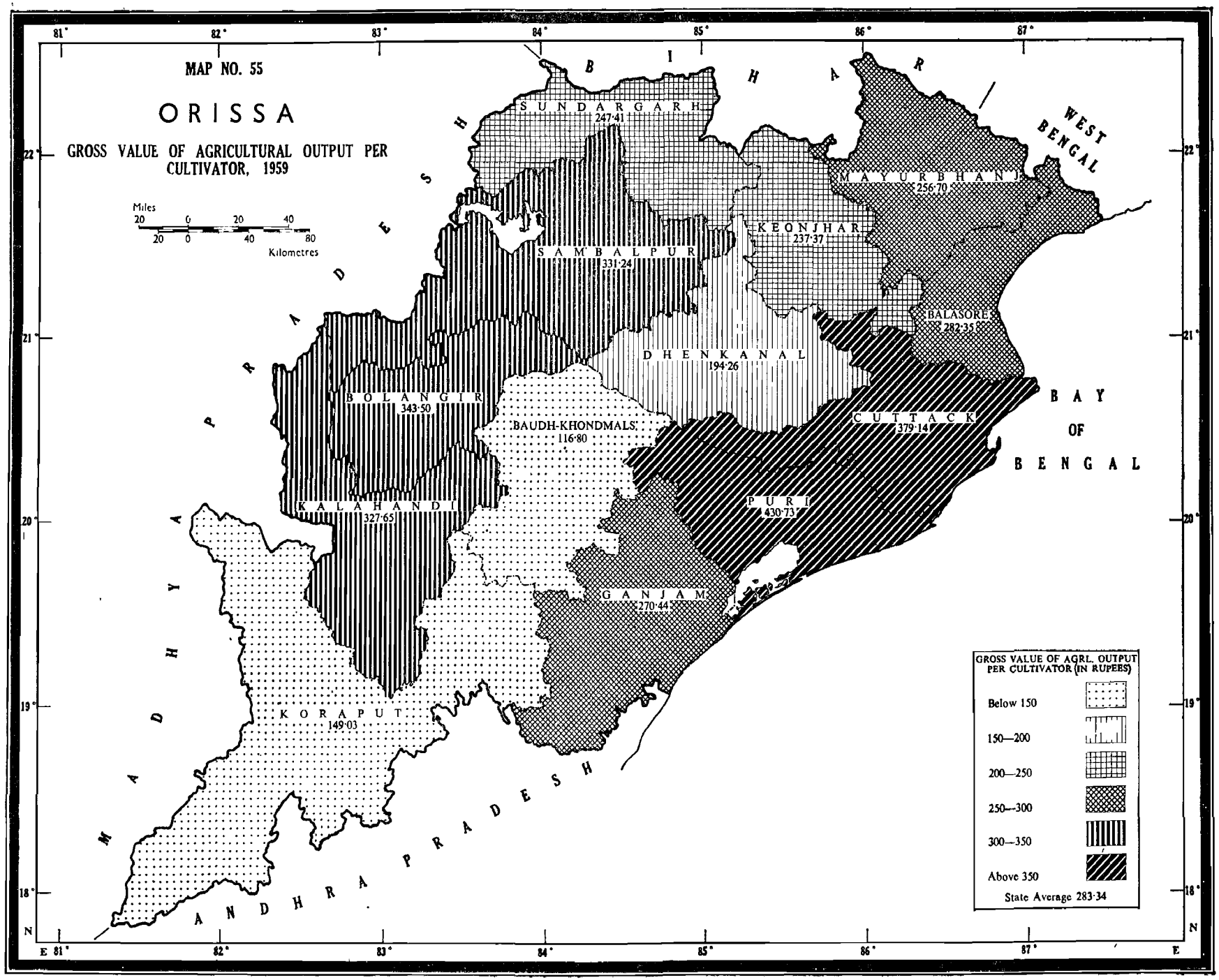
The gross value of agricultural output per district was divided by the number of cultivating households in the district. This number was obtained from the Census of India, which, however, maintains only the number of households calculated on a 20 per cent basis. The possibility of sampling error affecting the absolute number of households cannot be overruled.

According to the gross value available to a cultivating household, the districts have been grouped into five ranges, namely, below Rs. 300, Rs. 300—400, Rs. 400—520, Rs. 520—600 and above Rs. 600. Baudh-Khondmals is the only district which occurs in the lowest group, the gross value of agricultural output accruing to a cultivating household on the average being Rs. 261·26. In the next group of Rs. 300—400 occur three districts, namely, Koraput, Dhenkanal and Balasore. In these districts, the growing of cash crops is not popular. Moreover, in a district like Balasore the number of cultivating households is comparatively large and so the gross output per cultivating household has been low. The districts having the highest range of value, viz., above Rs. 600 are Kalahandi, Bolangir and Sambalpur.

The statement below gives the total number of cultivating households and the gross value of output in each district:

District	No. of cultivating households	Gross value of output in lakhs of rupees	Gross value per cultivating households
Kalahandi	130,510	886·34	679·13
Koraput	204,070	724·98	355·26
Sambalpur	226,210	1,479·39	653·99
Bolangir	146,620	1,057·92	721·54
Baudh-Khondmals	83,265	217·54	261·26
Ganjam	235,720	1,235·10	523·97
Sundargarh	93,715	531·51	567·15
Dhenkanal	139,755	484·30	346·53
Puri	251,795	1,494·40	593·50
Keonjhar	103,800	525·46	506·22
Cuttack	385,525	1,945·66	504·68
Mayurbhanj	181,540	920·51	507·06
Balasore	224,690	830·85	369·78

Source — (i) Director of Agriculture and Food Production, Orissa
(ii) Director of Marketing, Orissa


MAP NO. 55
ORISSA
GROSS VALUE OF AGRICULTURAL OUTPUT PER CULTIVATOR, 1959
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 247·41
MAYURBHANJ 256·70
KEONJHAR 237·37
SAMBALPUR 331·24
BALASORE 282·35
DHENKANAL 194·26
BOLANGIR 343·50
BAUDH-KHONDMALS 116·80
CUTTACK 379·14
KALAHANDI 327·65
PURI 430·73
GANJAM 270·44
KORAPUT 149·03
GROSS VALUE OF AGRL. OUTPUT PER CULTIVATOR (IN RUPEES)
Below 150
150—200
200—250
250—300
300—350
Above 350
State Average 283·34
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 55

GROSS VALUE OF AGRICULTURAL OUTPUT PER CULTIVATOR, 1959.

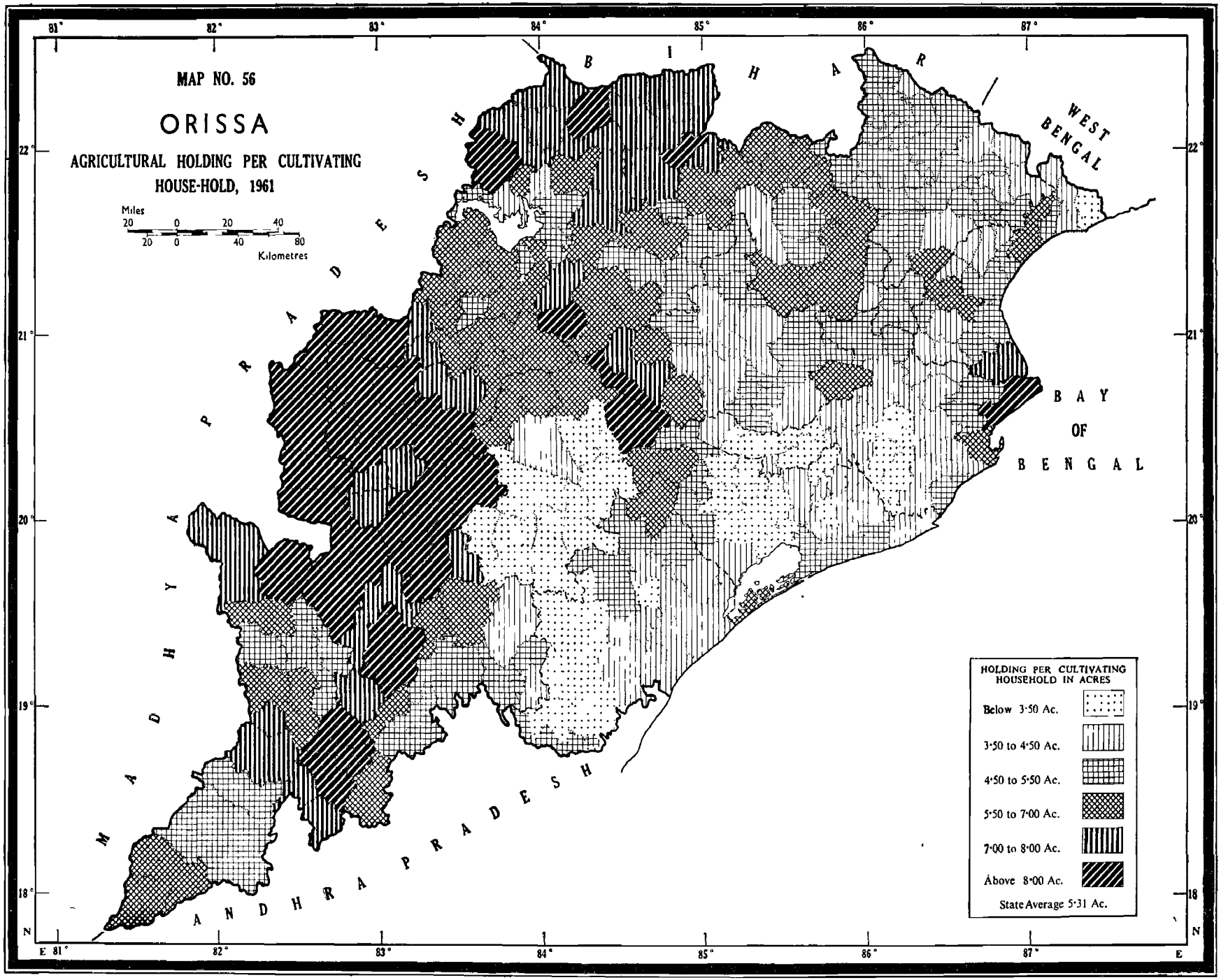
This map is drawn on the same principles as for the previous map (No. 54). Calculation has, however, been made of the gross value of agricultural output per cultivator in this map as against cultivating household in the previous one. The number of cultivators has been taken from the full count of Census figures of 1961, but the gross value of output has been obtained from the Directorates of Agriculture and of Marketing, relating to the year 1959. This anomaly gives a result which may be taken to be approximate. Moreover, there are certain inaccuracies in the departmental figures of output. The results are, however, presented for whatever they are worth.

The gross value obtainable by a cultivator on the average has been worked districtwise and grouped into six ranges, namely, below Rs. 150, Rs. 150—200, Rs. 200—250, Rs. 250—300, Rs. 300—350, and above Rs. 350. In the lowest range, Baudh-Khondmals and Koraput districts occur, with gross value per cultivator of Rs. 116·80 and Rs. 149·03 respectively. In the highest range two districts find place, namely, Cuttack and Puri, yielding Rs. 379·14 and Rs. 430·73 respectively. Ganjam, Balasore and Mayurbhanj are in the medium range of Rs. 250—300.

The following statement gives the relevant figures :

District	No. of Cultivators	Gross value of output in lakhs of rupees	Gross value per Cultivator
Kalahandi	270,512	886·34	327·65
Koraput	486,464	724·98	149·03
Sambalpur	446,610	1,479·39	331·24
Bolangir	307,982	1,057·92	343·50
Baudh-Khondmals	186,246	217·54	116·80
Ganjam	456.705	1,235·10	270·44
Sundargarh	214,829	531·51	247·41
Dhenkanal	249,307	484·30	194·26
Puri	346,942	1,494·40	430·73
Keonjhar	221,368	525·46	237·37
Cuttack	513,179	1,945·66	379·14
Mayurbhanj	358,601	920·51	256·70
Balasore	294,267	830·85	282·35

Source — (i) Director of Agriculture and Food Production, Orissa
(ii) Director of Marketing, Orissa


MAP NO. 56
ORISSA
AGRICULTURAL HOLDING PER CULTIVATING HOUSE-HOLD, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
HOLDING PER CULTIVATING HOUSEHOLD IN ACRES
Below 3·50 Ac.
3·50 to 4·50 Ac.
4·50 to 5·50 Ac.
5·50 to 7·00 Ac.
7·00 to 8·00 Ac.
Above 8·00 Ac.
State Average 5·31 Ac.
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 56

AGRICULTURAL HOLDING PER CULTIVATING HOUSEHOLD, 1961

The average size of agricultural holdings measured in acres in each police station of the State is shown in the map. Each cultivating household is presumed to possess one agricultural holding, irrespective of its size, which may vary from less than one acre to above 50 acres. The mean acreage of each of the different sizes of holdings being multiplied by the number of cultivating households respectively possessing them, when added gives the aggregate cultivating area within a police station. Such aggregate figure is divided by the number of cultivating households in order to get the average size of agricultural holdings within the police station. In this manner the average size of holdings are calculated for all the police stations in the State, and are grouped into six ranges, viz., below 3·50, 3·50 to 4·50, 4·50 to 5·50, 5·50 to 7·0, 7·0 to 8·0 and above 8·0 acres. The police stations are shaded by choropleth method according to the ranges in which they fall.

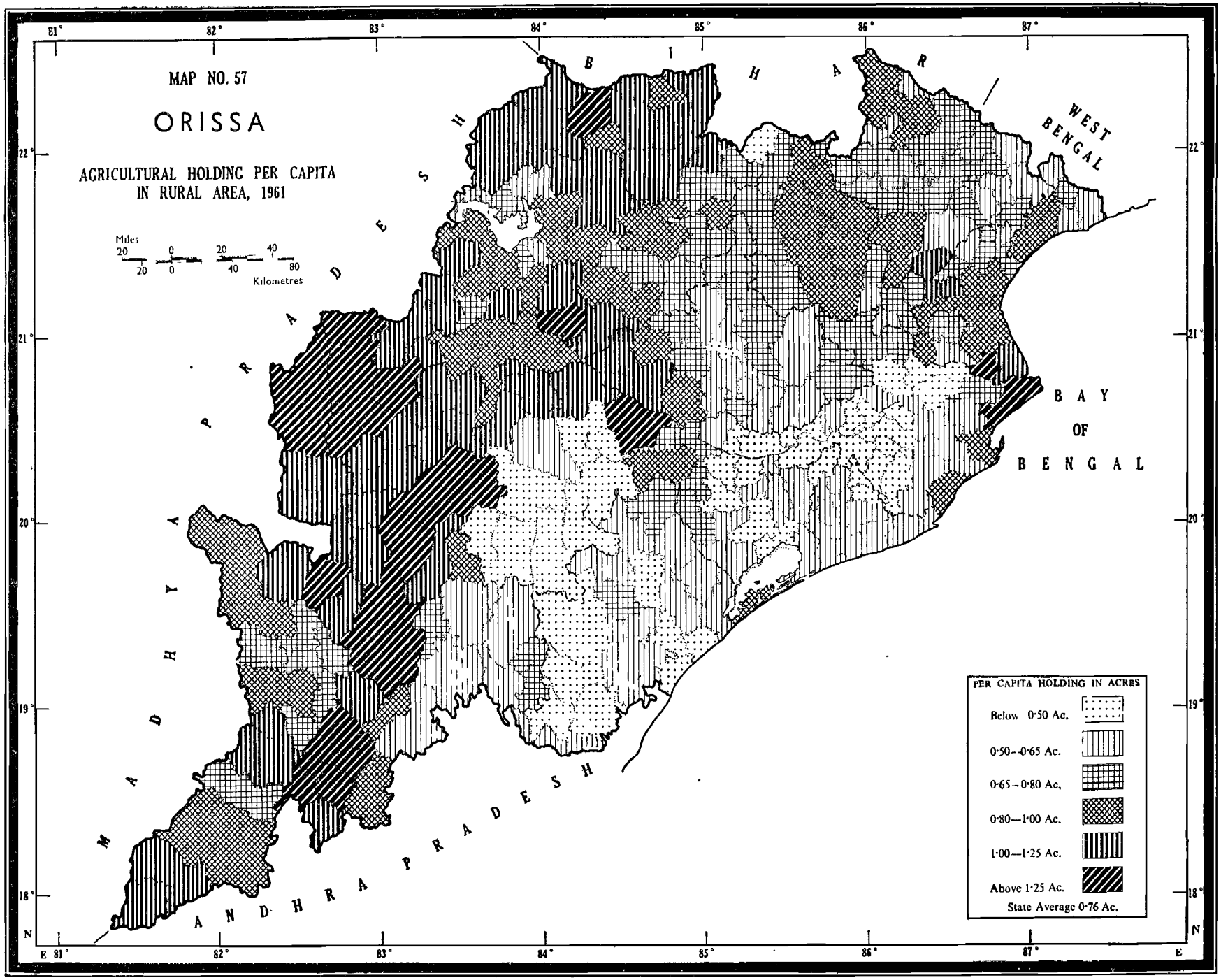
The average extent of acreage per household comes to 5·31 only in the State. Kalahandi district has the largest average size of holdings, viz., 9·57 acres, while Ganjam has the smallest with 3·90 acres only. Among the police stations, Khaprakhol (12·11) and Turekela (11·78) in Bolangir and Narla (11·58) and Komna (11·52) in Kalahandi have the largest average size of holdings. The police station with the smallest size is Daringibadi (1·99) in the district of Baudh-Khondmals. The agricultural holdings in the districts farther from the coast and situated towards the northern and western borders have a greater acreage than those of the coastal districts.

The average size of agricultural holdings in different districts is given below:

District	Agricultural holdings (in acres)
Kalahandi	9·57
Bolangir	7·90
Sundargarh	7·34
Sambalpur	6·31
Koraput	6·19
Keonjhar	5·43
State Average	5·31
Dhenkanal	4·91
Balasore	4·89
Mayurbhanj	4·77
Baudh-Khondmals	4·29
Cuttack	3·95
Puri	3·91
Ganjam	3·90

Source—Table B-XI of the Household Economic Tables appearing in Part III of Vol. XII, Census of India, 1961 (Orissa)

N.B. —Original data was collected in the Household Schedules of 1961 Census. Only 20% of the households selected on random sample basis were utilized in building up Table B-XI. In case the full (100%) absolute figures are wanted, the figures shown in the table may be multiplied by 5. The results will be approximate, being subject to the errors and discrepancies inherent in sampled figures.


MAP NO. 57
ORISSA
AGRICULTURAL HOLDING PER CAPITA
IN RURAL AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PER CAPITA HOLDING IN ACRES
Below 0·50 Ac.
0·50–0·65 Ac.
0·65–0·80 Ac.
0·80–1·00 Ac.
1·00–1·25 Ac.
Above 1·25 Ac.
State Average 0·76 Ac.
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 57

AGRICULTURAL HOLDING PER CAPITA IN RURAL AREAS, 1961

The map displays the per capita agricultural holding in the rural areas of the State in 1961. Total acreage of cultivated land in every police station is divided by its rural population. The result obtained is the per capita holding which is divided into six ranges, viz., below 0·50, 0·50 to 0·65, 0·65 to 0·80, 0·80 to 1·00, 1·00 to 1·25 and above 1·25 acres. All the police stations are shaded suitably in black.

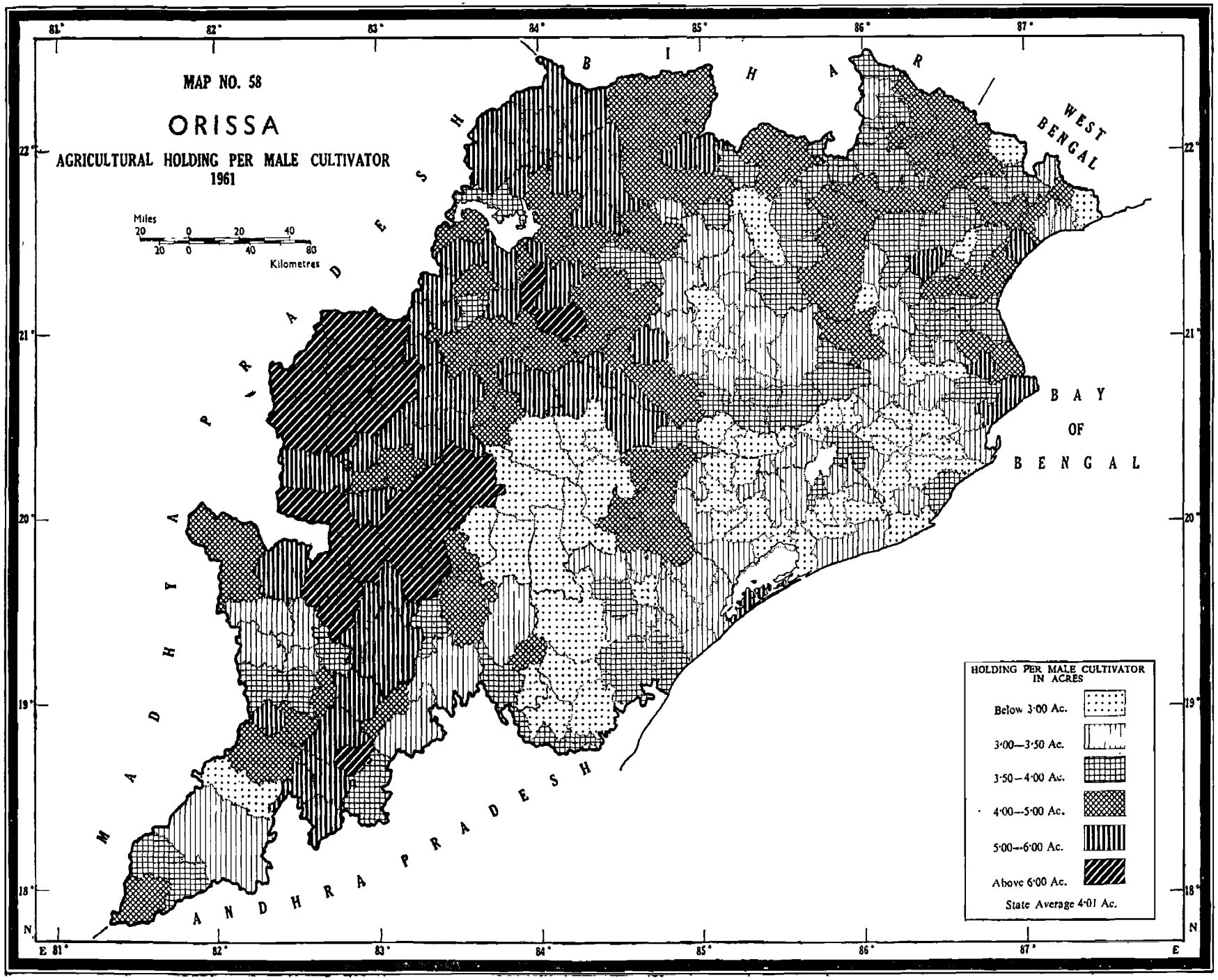
In the rural areas of the State, the total extent of agricultural holdings is 12,575,378 acres*, and the population is 16,439,196. The per capita holding thus worked out comes to 0·76 acres only which is poor in size. Kalahandi has the maximum size of per capita holding (1·25 acres), while Ganjam (0·52 acres) has the minimum. Jagdalpur (1·74 acres) and Paikmal (1·61 acres) police stations in Sambalpur district have the largest per capita holdings in the State. On the other hand, Daringibadi PS (0·34 acres) in Baudh-Khondmals and Barbil PS (0·35 acres) in Keonjhar district have the smallest size of per capita holdings.

* Based on Table B-XI, as indicated under 'Source' of Map No. 56.

A look at the map will show that the size of per capita holdings in the regions bordering the west and the north is larger than in the coastal areas. It is mainly due to excessive fragmentation in the coastal regions on account of higher density of population.

The per capita holding in the districts is given below:

District	Per capita holding (in acres)
Kalahandi	1·25
Bolangir	1·12
Sundargarh	1·08
Sambalpur	1·01
Koraput	0·87
Balasore	0·81
Keonjhar	0·78
State Average	0·76
Mayurbhanj	0·73
Baudh-Khondmals	0·70
Dhenkanal	0·68
Puri	0·56
Cuttack	0·53
Ganjam	0·52


MAP NO. 58
ORISSA
AGRICULTURAL HOLDING PER MALE CULTIVATOR
1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
HOLDING PER MALE CULTIVATOR IN ACRES
Below 3·00 Ac.
3·00—3·50 Ac.
3·50—4·00 Ac.
4·00—5·00 Ac.
5·00—6·00 Ac.
Above 6·00 Ac.
State Average 4·01 Ac.
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 58

AGRICULTURAL HOLDING PER MALE CULTIVATOR, 1961

Agricultural holding per male cultivator during 1961 in the State is shown in this map. In other words, it shows the average size of agricultural holding held by a male cultivator in different police stations of the State. The sizes are valued in acres and grouped into six ranges, viz., below 3·0, 3·0 to 3·50, 3·50 to 4·0, 4·0 to 5·0, 5·0 to 6·0 and above 6·0 acres. The police stations are hatched by suitable black shades accordingly.

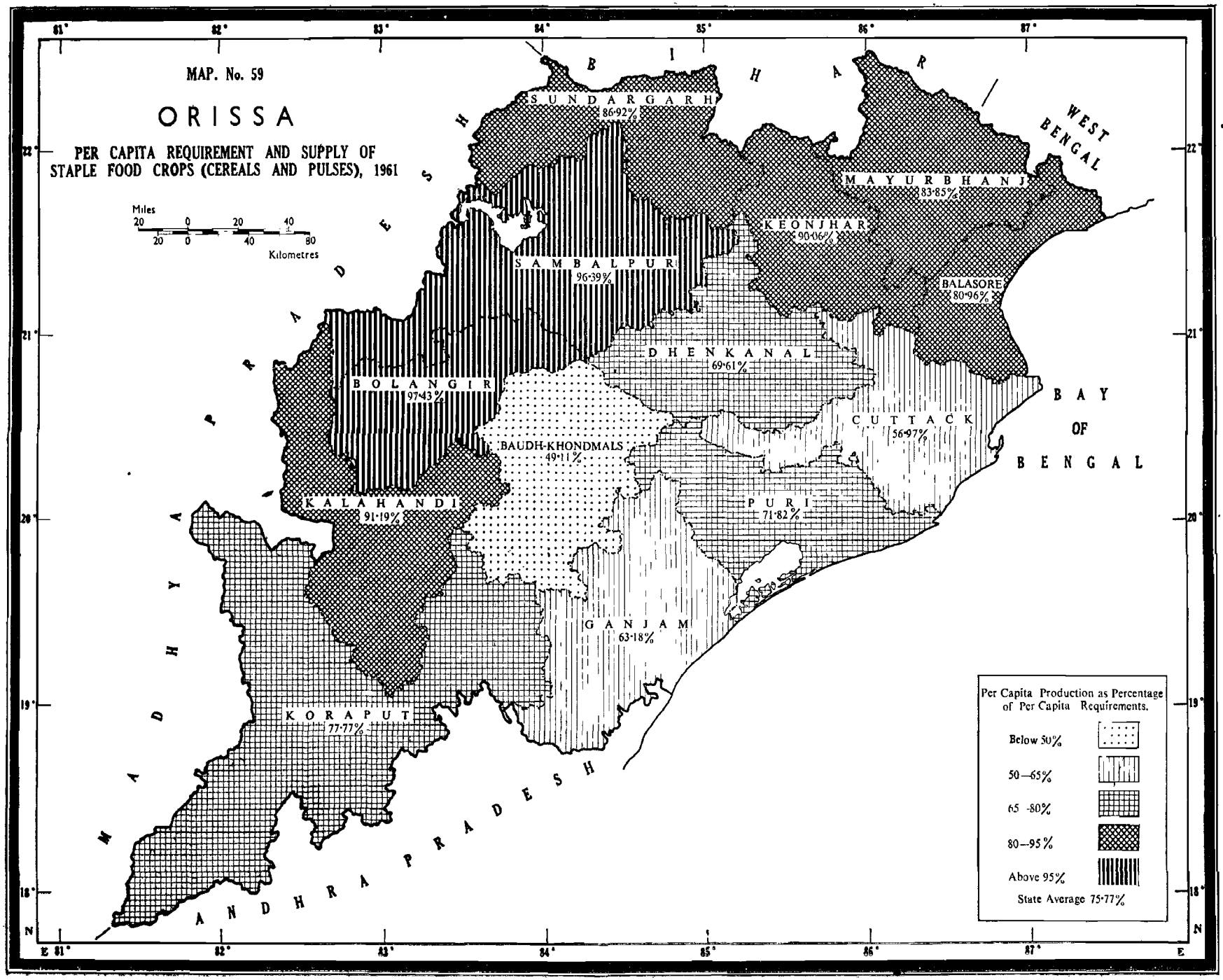
The number of male cultivators in Orissa is 3,185,128(*) having 12,780,691·5(**) acres of agricultural land, the average being 4·01 acres. Here too, Kalahandi tops the list with 6·47 acres per every male cultivator, followed closely by Bolangir (5·36) and Sambalpur (5·15). Among the police stations, Turekela (7·91) and Khaprakhol (7·55) in Bolangir and Kesinga (7·68), Narla (7·58) and Jaipatna (7·57) in Kalahandi district have the highest acreage per male cultivator. On the other hand, the police stations of Mohana (1·55), R. Udayagiri (1·86) in Ganjam and Daringibadi (1·66), Kotgarh (1·68) and Belghar (1·85) in Baudh-Khondmals have quite a low acreage per male cultivator. A general view of the map indicates higher acreage in the bordering districts of Kalahandi, Bolangir, Sambalpur and Sundargarh and lower acreage in the coastal districts.

The average size of agricultural holding per male cultivator in the districts is given below:

Districts	Size of agricultural holding per male cultivator (in acres)
Kalahandi	6·47
Bolangir	5·36
Sambalpur	5·15
Sundargarh	5·04
Koraput	4·07
State Average	4·01
Mayurbhanj	3·93
Balasore	3·87
Keonjhar	3·76
Dhenkanal	3·65
Baudh-Khondmals	3·36
Ganjam	3·26
Cuttack	3·07
Puri	3·01

(*) Based on Primary Census Abstract contained in General Population Tables, Part II-A, Vol. XII, Census of India, 1961 (Orissa).

(**) Worked out from Table B-XI as indicated under 'Source' of Map No. 56


MAP. No. 59
ORISSA
PER CAPITA REQUIREMENT AND SUPPLY OF STAPLE FOOD CROPS (CEREALS AND PULSES), 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 86·92%
MAYURBHANJ 83·85%
KEONJHAR 90·06%
SAMBALPUR 96·39%
BALASORE 80·96%
DHENKANAL 69·61%
BOLANGIR 97·43%
CUTTACK 56·97%
BAUDH-KHONDMALS 49·11%
KALAHANDI 91·19%
PURI 71·82%
GANJAM 63·18%
KORAPUT 77·77%
Per Capita Production as Percentage of Per Capita Requirements.
Below 50%
50—65%
65 -80%
80—95%
Above 95%
State Average 75·77%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 59

PER CAPITA REQUIREMENT AND SUPPLY OF STAPLE FOOD CROPS (CEREALS AND PULSES), 1961

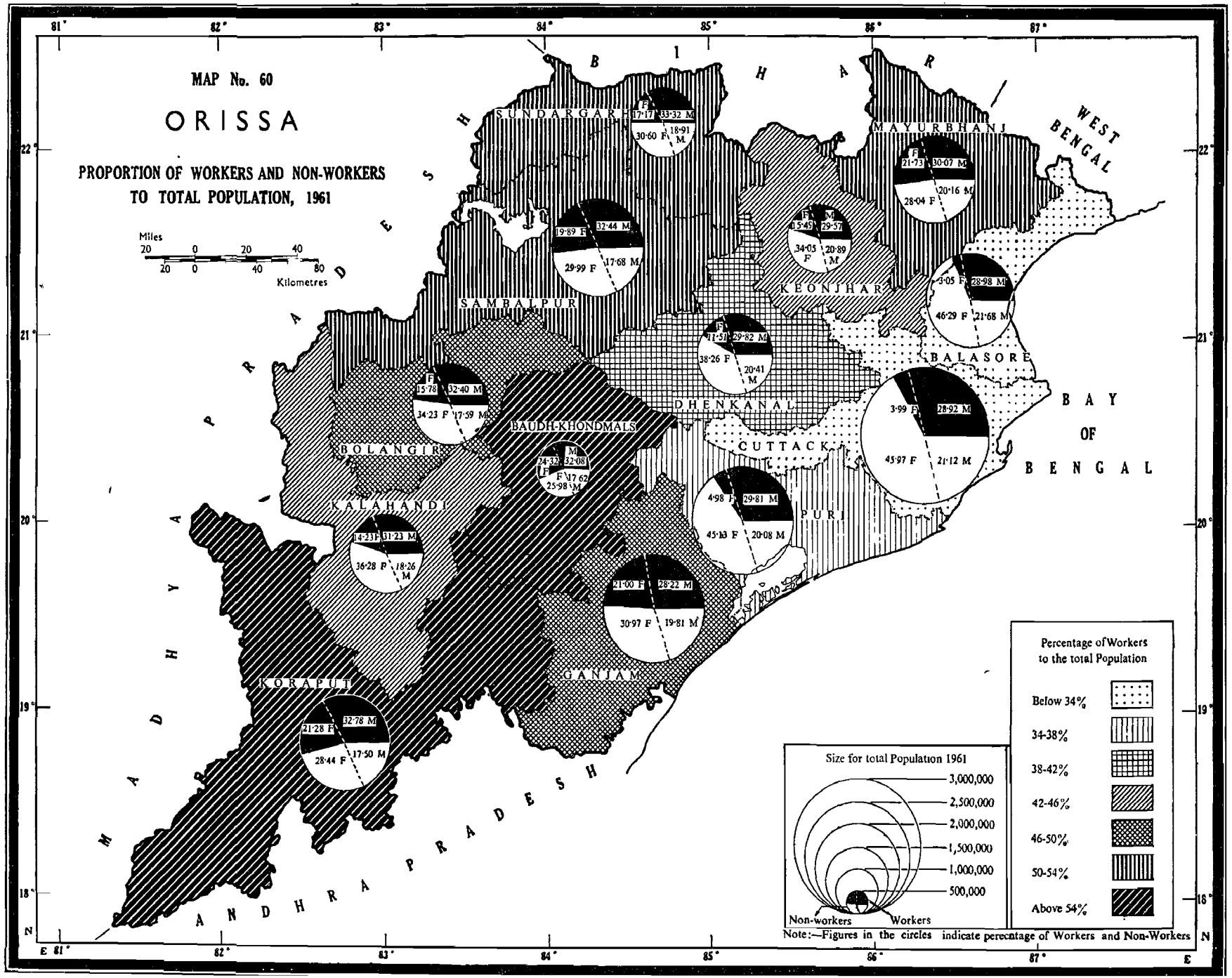
The calculations for this map have been done by taking 17 ozs. of staple food items, namely, 9 ozs. of rice, 5 ozs. of wheat or millet and 3 ozs. of pulses as the standard requirement of cereals and pulses by a male adult. This standard has been recommended by the Nutritive Advisory Committee as indicated under 'Source' below. The relevant data was processed by the Map Officer to the Registrar General, India by taking into account the population in different age-groups, the requirement of cereals and pulses per person per day in calories, the total requirement in calories per year, the yearly production of supplies of cereals and pulses, the amount of calories available from the quantity of cereals and pulses supplied and lastly the per capita production of cereals and pulses as percentage of per capita requirement. The percentage ratios between per capita supply and per capita requirement for each district were calculated and grouped into five ranges of below 50 per cent, 50—65 per cent, 65—80 per cent, 80—95 per cent and above 95 per cent. The districts were hatched according to these ranges.

It appears from the map that the per capita production in all cases is lower than the per capita requirement. The ratio, however, is the highest in the districts of Bolangir and Sambalpur and is the lowest in Baudh-Khondmals. The percentage ratio of different districts is indicated on the map.

The statement below gives the relevant data as worked out in the office of the Registrar General, India :

District/ State	Per capita net production of cereals and pulses (in calories)	Per capita requirement of cereals and pulses (in calories)	Per capita production as percentage of per capita requirements
Kalahandi	401,664	440,478	91·19
Koraput	361,545	464,890	77·77
Sambalpur	449,098	465,933	96·39
Bolangir	441,906	453,571	97·43
Baudh-Khondmals	223,720	455,586	49·11
Ganjam	282,611	447,286	63·18
Sundargarh	397,356	457,166	86·92
Dhenkanal	309,438	444,552	69·61
Puri	330,113	459,615	71·82
Keonjhar	400,410	444,599	90·06
Cuttack	261,972	459,834	56·97
Mayurbhanj	372,572	444,336	83·85
Balasore	366,728	452,965	80·96
ORISSA	344,390	454,535	75·77

Source—Factors worked out by Office of the Registrar General, India on the basis of the 'Food Balance Sheet' for India and on the recommendations of the Nutritive Advisory Committee contained in Health Bulletin No. 23 by W. R. Aykroyd.


MAP No. 60
ORISSA
PROPORTION OF WORKERS AND NON-WORKERS TO TOTAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
MAYURBHANJ
KEONJHAR
BALASORE
DHENKANAL
CUTTACK
BAUDH-KHONDMALS
BOLANGIR
KALAHANDI
PURI
GANJAM
KORAPUT
F 17·17 M 33·32
30·60 F 18·91 M
19·89 F 32·44 M
29·99 F 17·68 M
F 21·73 M 30·07
28·04 F 20·16 M
F 15·45 M 29·57
34·05 F 20·89 M
3·05 F 28·98 M
46·29 F 21·68 M
F 11·51 M 29·82
38·26 F 20·41 M
3·99 F 28·92 M
45·97 F 21·12 M
F 15·78 M 32·40
34·23 F 17·59 M
M 32·08
24·32 F 17·62
25·98 M
4·98 F 29·81 M
45·63 F 20·08 M
14·23 F 31·23 M
36·28 F 18·26 M
21·00 F 28·22 M
30·97 F 19·81 M
21·28 F 32·78 M
28·44 F 17·50 M
Size for total Population 1961
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
Non-workers
Workers
Percentage of Workers to the total Population
Below 34%
34-38%
38-42%
42-46%
46-50%
50-54%
Above 54%
Note:—Figures in the circles indicate percentage of Workers and Non-Workers

MAP No. 60

PROPORTION OF TOTAL WORKERS AND NON-WORKERS TO THE TOTAL POPULATION, 1961

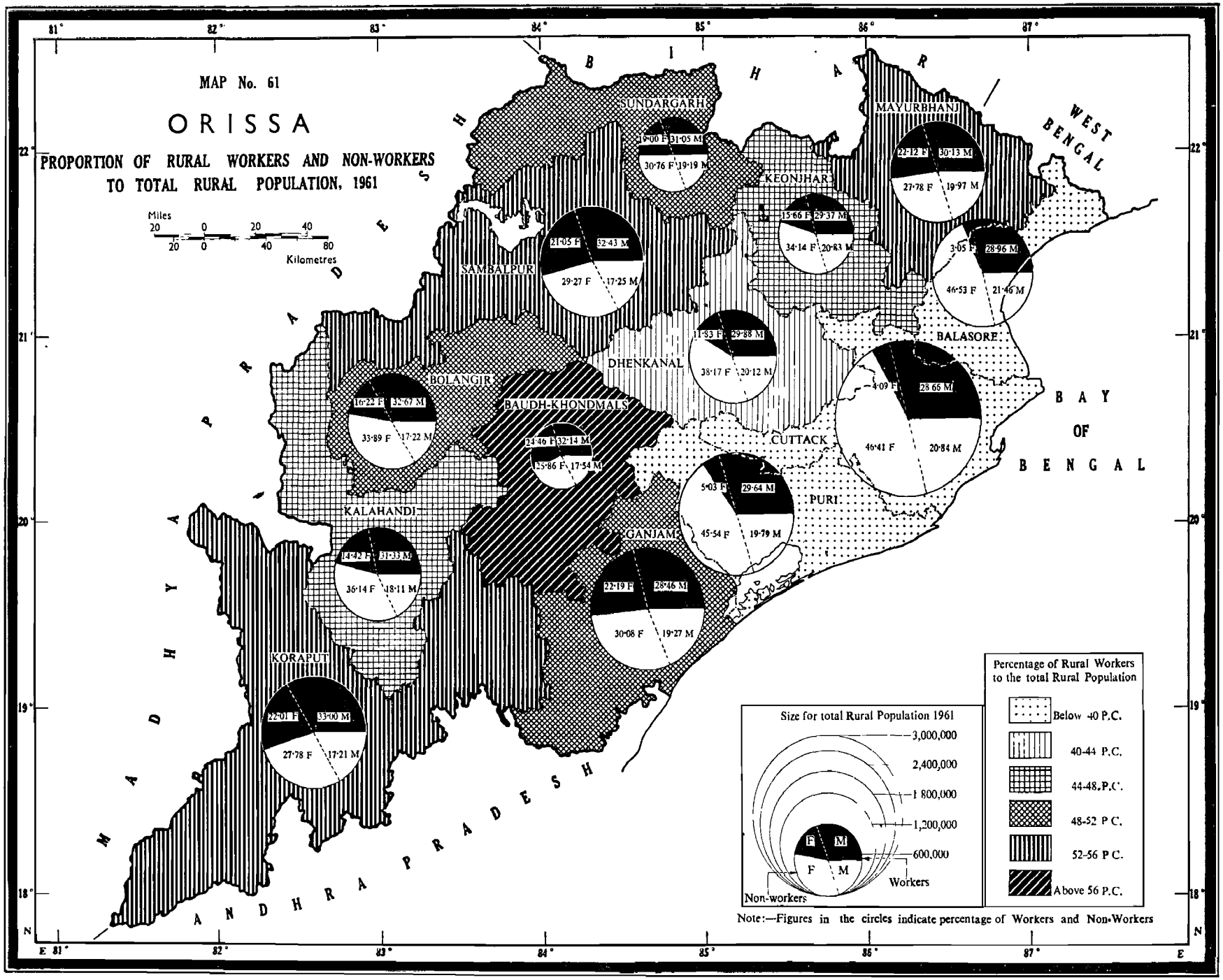
The map brings out the percentage of total workers and non-workers to the total population in the districts of Orissa in 1961. Pie-graphs are drawn in each district proportionate to the total population of the district. The circles are divided into sectors to represent the percentage of workers and non-workers according to their proportion. Again these sectors are subdivided by dashed line to indicate the proportion of males and females in the working and non-working groups. The percentage of workers is grouped into seven ranges, viz., below 34, 34 to 38, 38 to 42, 42 to 46, 46 to 50, 50 to 54 and above 54 per cent. The districts are hatched accordingly in seven different shades by choropleth technique.

Out of the total population of 17,548,846 in the State, 7,661,529 persons are workers, which amounts to 43·66 per cent. The rest come under the non-worker group. Out of 43·66 per cent of the working population, 30·36 per cent are males and 13·30 per cent are females.

The districts having a high percentage of workers are Baudh-Khondmals (56·40%) and Koraput (54·06%). On the other hand, Balasore has the lowest percentage of workers (32·03%) followed by Cuttack (32·91%). Only four districts, viz., Balasore, Cuttack, Puri and Dhenkanal have each a percentage of workers lower than the State average (43·66%). The rest of the districts are well above it.

The following statement gives the percentage figures of working and non-working population in the districts of Orissa in 1961:

District	Total population	Workers in percentage			Non-workers	
		Male	Female	Total	Male	Female
Baudh-Khondmals	514,427	32·08	24·32	56·40	17·62	25·98
Koraput	1,498,271	32·78	21·28	54·06	17·50	28·44
Sambalpur	1,508,686	32·44	19·89	52·33	17·68	29·99
Mayurbhanj	1,204,043	30·07	21·73	51·80	20·16	28·04
Sundargarh	758,617	33·32	17·17	50·49	18·91	30·60
Ganjam	1,872,530	28·22	21·00	49·22	19·81	30·97
Bolangir	1,068,686	32·40	15·78	48·18	17·59	34·23
Kalahandi	1,009,654	31·23	14·23	45·46	18·26	36·28
Keonjhar	743·315	29·57	15·49	45·06	20·89	34·05
State Average	17,548,846	30·36	13·30	43·66	19·61	36·73
Dhenkanal	1,028,935	29·82	11·51	41·33	20·41	38·26
Puri	1,865,439	29·81	4·98	34·79	20·08	45·13
Cuttack	3,060,320	28·92	3·99	32·91	21·12	45·97
Balasore	1,415,923	28·98	3·05	32·03	21·68	46·29


MAP No. 61
ORISSA
PROPORTION OF RURAL WORKERS AND NON-WORKERS TO TOTAL RURAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
19·00 F 31·05 M
30·76 F 19·19 M
MAYURBHANJ
22·12 F 30·13 M
27·78 F 19·97 M
KEONJHAR
15·66 F 29·37 M
34·14 F 20·83 M
SAMBALPUR
21·05 F 32·43 M
29·27 F 17·25 M
3·05 F 28·96 M
46·53 F 21·46 M
BALASORE
11·83 F 29·88 M
38·17 F 20·12 M
DHENKANAL
BOLANGIR
16·22 F 32·67 M
33·89 F 17·22 M
BAUDH-KHONDMALS
24·46 F 32·14 M
25·86 F 17·54 M
4·09 F 28·66 M
46·41 F 20·84 M
CUTTACK
5·03 F 29·64 M
45·54 F 19·79 M
PURI
KALAHANDI
14·42 F 31·33 M
36·14 F 18·11 M
GANJAM
22·19 F 28·46 M
30·08 F 19·27 M
KORAPUT
22·01 F 33·00 M
27·78 F 17·21 M
Size for total Rural Population 1961
3,000,000
2,400,000
1 800,000
1,200,000
600,000
F M
F M
Workers
Non-workers
Percentage of Rural Workers to the total Rural Population
Below 40 P.C.
40-44 P.C.
44-48 P.C.
48-52 P C.
52-56 P C.
Above 56 P.C.
Note:—Figures in the circles indicate percentage of Workers and Non-Workers

MAP No. 61

PROPORTION OF RURAL WORKERS AND NON-WORKERS TO THE TOTAL RURAL POPULATION WITH MALE AND FEMALE DIVISIONS, 1961

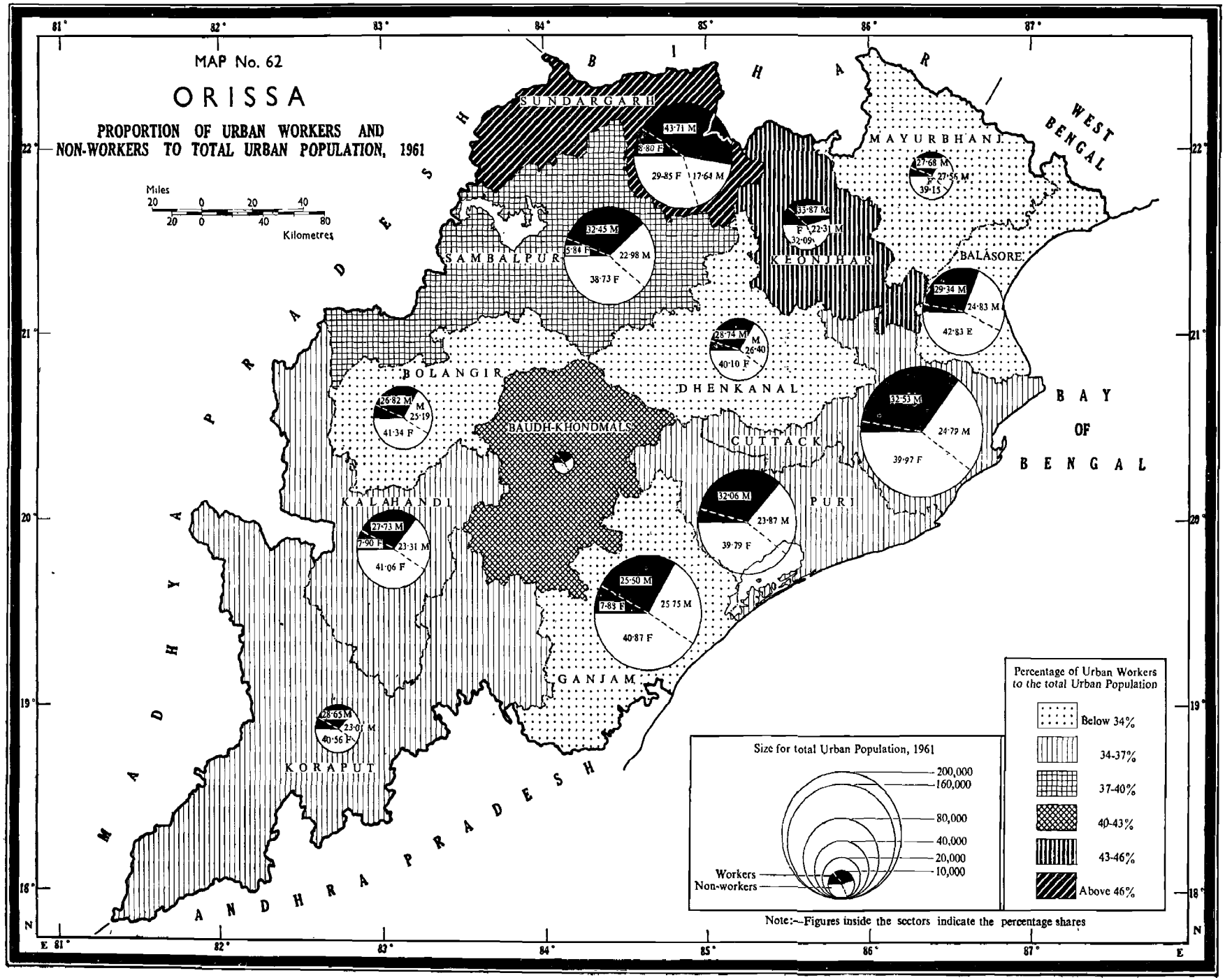
The map represents the proportion of workers and non-workers to the total rural population with male and female break-up in 1961. These proportions have been calculated for the districts and the State as a whole in percentage. Pie-graphs are drawn in each district proportionate to the rural population of the district. The circles are divided by sectors showing the proportion of workers and non-workers. The sector showing workers is shaded in black in all the circles. Again both the sectors are subdivided by pecked lines to indicate the proportion of males and females in each group. The percentage of workers to the total rural population of the districts is thereafter calculated and graded into six groups, viz., below 40, 40 to 44, 44 to 48, 48 to 52, 52 to 56 and above 56 per cent. The districts falling under the above groups are hatched in six different shades by choropleth technique.

The total rural population of the State in 1961 is 16,439,196 and out of this the percentage of workers and non-workers is 44·07 and 55·93 respectively. The percentage of workers to the rural population of the district is lowest in Balasore (32·01) and highest in the district of Baudh-Khondmals (56·60). The districts of Sundargarh, Ganjam, Mayurbhanj, Sambalpur, Koraput and Baudh-Khondmals have a larger percentage of workers than non-workers while in the rest of the districts the number of non-workers predominates over that of workers. The proportion of male workers to the female workers is highest in the district of Balasore (28·96% to 3·05%) while it is lowest in Baudh-Khondmals (32·14% to 24·46%).

The statement below gives the absolute and percentage figures of male and female workers and non-workers to the total rural population in the districts of Orissa in 1961 :

State/District		Total Rural population	Workers		Non-workers	
			Male	Female	Male	Female
ORISSA	(a)	16,439,196	4,977,082	2,268,129	3,179,516	6,014,469
	(b)	100	30·27	13·80	19·34	36·59
Kalahandi	(a)	981,081	307,345	141,443	177,718	354,575
	(b)	100	31·33	14·42	18·11	36·14
Koraput	(a)	1,421,300	469,069	312,773	244,569	394,889
	(b)	100	33·00	22·01	17·21	27·78
Sambalpur	(a)	1,393,311	451,917	293,330	240,291	407,773
	(b)	100	32·43	21·05	17·25	29·27
Bolangir	(a)	1,019,027	332,888	165,334	175,507	345,298
	(b)	100	32·67	16·22	17·22	33·89
Baudh-Khondmals	(a)	508,339	163,373	124,317	89,189	131,460
	(b)	100	32·14	24·46	17·54	25·86
Ganjam	(a)	1,716,686	488,642	380,895	330,822	516,327
	(b)	100	28·46	22·19	19·27	30·08
Sundargarh	(a)	622,857	193,413	118,329	119,514	191,601
	(b)	100	31·05	19·00	19·19	30·76
Dhenkanal	(a)	981,847	293,329	116,156	197,551	374,811
	(b)	100	29·88	11·83	20·12	38·17
Puri	(a)	1,732,033	513,321	87,225	342,722	788,765
	(b)	100	29·64	5·03	19·79	45·54
Keonjhar	(a)	711,351	208,953	111,381	148,180	242,837
	(b)	100	29·37	15·66	20·83	34·14
Cuttack	(a)	2,851,723	817,207	116,535	594,465	1,323,516
	(b)	100	28·66	4·09	20·84	46·41
Mayurbhanj	(a)	1,175,623	354,225	260,033	234,832	326,533
	(b)	100	30·13	22·12	19·97	27·78
Balasore	(a)	1,324,018	383,400	40,378	284,156	616,084
	(b)	100	28·96	3·05	21·46	46·53

(a) = Absolute figure
(b) = Percentage figure


MAP No. 62
ORISSA
PROPORTION OF URBAN WORKERS AND NON-WORKERS TO TOTAL URBAN POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
43·71 M
8·80 F
29·85 F
17·64 M
MAYURBHANJ
27·68 M
27·56 M
39·15
SAMBALPUR
32·45 M
5·84 F
22·98 M
38·73 F
KEONJHAR
33·87 M
22·31 M
32·09
BALASORE
29·34 M
24·83 M
42·83 E
BOLANGIR
28·74 M
26·40
40·10 F
DHENKANAL
26·82 M
25·19
41·34 F
BAUDH-KHONDMALS
CUTTACK
32·53 M
24·79 M
39·97 F
KALAHANDI
27·73 M
7·90 F
23·31 M
41·06 F
32·06 M
23·87 M
39·79 F
PURI
25·50 M
7·83 F
25·75 M
40·87 F
GANJAM
28·65 M
23·01 M
40·56 F
KORAPUT
Size for total Urban Population, 1961
200,000
160,000
80,000
40,000
20,000
10,000
Workers
Non-workers
Percentage of Urban Workers to the total Urban Population
Below 34%
34-37%
37-40%
40-43%
43-46%
Above 46%
Note:—Figures inside the sectors indicate the percentage shares

MAP No. 62

PROPORTION OF URBAN WORKERS AND NON-WORKERS TO THE TOTAL URBAN POPULATION WITH MALE AND FEMALE DIVISIONS, 1961

The map demonstrates the proportion of workers and non-workers in the urban population with male and female divisions. This proportion has been shown districtwise in percentage for the year 1961.

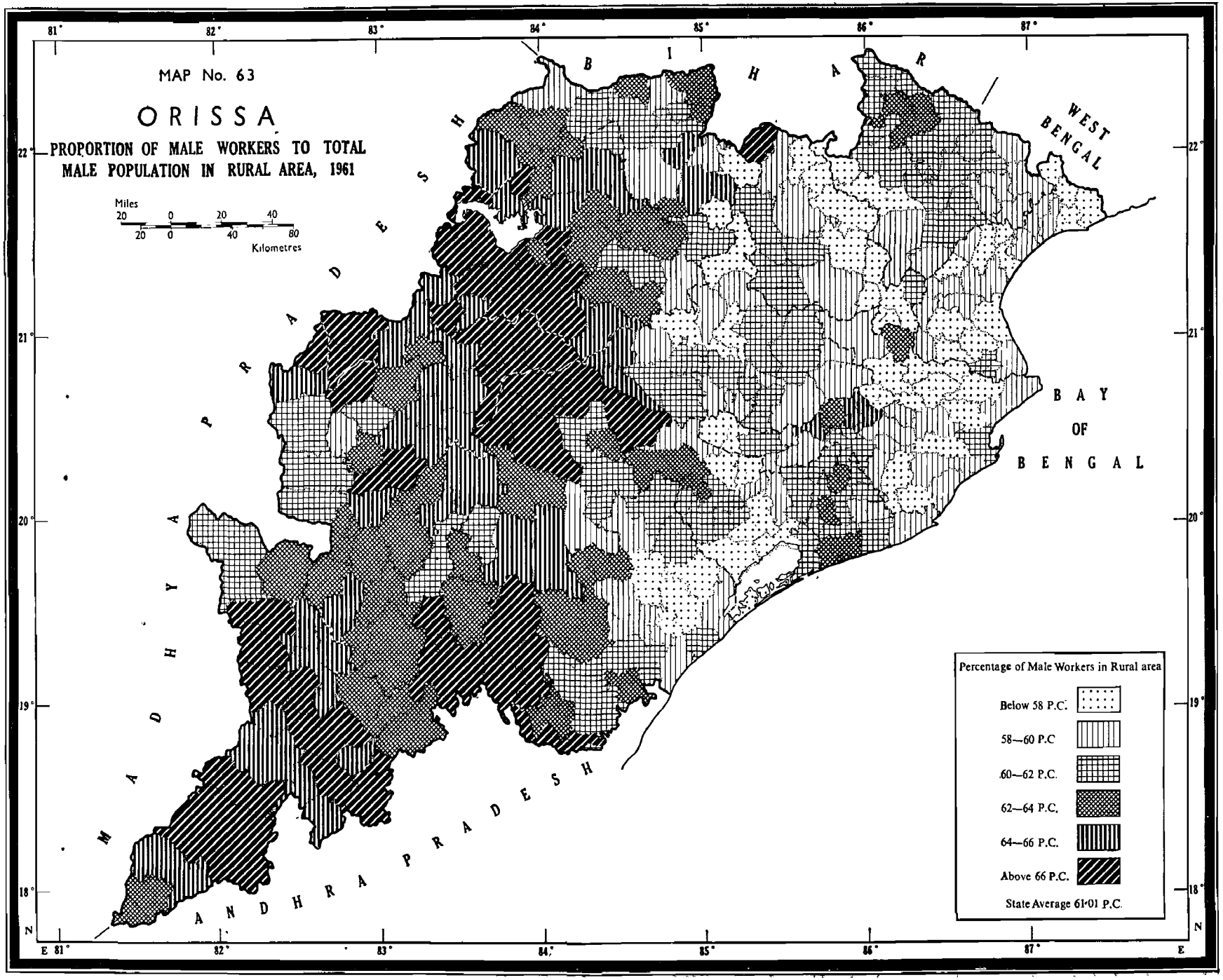
The urban population of each district is represented by proportionate pie-graphs drawn in the respective district. The circles are then proportionately divided to represent the strength of workers and non-workers, which again are subdivided by pecked lines to show male and female divisions. The percentage value of workers to the total population is calculated for each district and grouped into six divisions, above and below the State average (37·52%), viz., below 34, 34 to 37, 37 to 40, 40 to 43, 43 to 46 and above 46. The districts falling under these divisions are hatched in black shades by choropleth method.

There are 1,109,650 persons living in the urban areas of the State of whom 351,284 males and 65,034 females fall under the workers' groups. The remaining 262,704 males and 430,628 females are non-workers. In other words, about 32 per cent males and 6 per cent females are workers while 24 per cent males and 38 per cent females are non-workers.

Sundargarh district has the highest percentage of male workers (43·71%) while Baudh-Khondmals has the highest percentage of female workers (13·22%). Similarly, in the case of non-workers, Mayurbhanj tops the list in male category (27·56%) and Balasore in female category (42·83%). When the workers of both sexes are put together, Sundargarh district occupies the top (52·51%) and Balasore the bottom (32·34%). Evidently, there is the maximum extent of unemployment in urban areas of Balasore district.

The statement below gives the percentage of males and females in the workers and non-workers groups in the districts of Orissa in 1961:

State/District	Urban population	Workers		Non-workers	
		Male	Female	Male	Female
ORISSA	1,109,650	31·66	5·86	23·67	38·81
Sundargarh	135,760	43·71	8·80	17·64	29·85
Keonjhar	31,964	33·87	11·73	22·31	32·09
Baudh-Khondmals	6,088	27·20	13·22	24·10	35·48
Sambalpur	115,375	32·45	5·84	22·98	38·73
Koraput	76,971	28·65	7·78	23·01	40·56
Puri	133,406	32·06	4·28	23·87	39·79
Kalahandi	28,573	27·73	7·90	23·31	41·06
Cuttack	208,597	32·53	2·71	24·79	39·97
Dhenkanal	47,088	28·74	4·76	26·40	40·10
Bolangir	49,659	26·82	6·65	25·19	41·34
Ganjam	155,844	25·50	7·88	25·75	40·87
Mayurbhanj	28,420	27·68	5·61	27·56	39·15
Balasore	91,905	29·34	3·00	24·83	42·83


MAP No. 63
ORISSA
PROPORTION OF MALE WORKERS TO TOTAL MALE POPULATION IN RURAL AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Percentage of Male Workers in Rural area
Below 58 P.C.
58—60 P.C
60—62 P.C.
62—64 P.C.
64—66 P.C.
Above 66 P.C.
State Average 61·01 P.C.
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 63

PROPORTION OF MALE WORKERS TO THE TOTAL MALE POPULATION IN RURAL AREAS, 1961

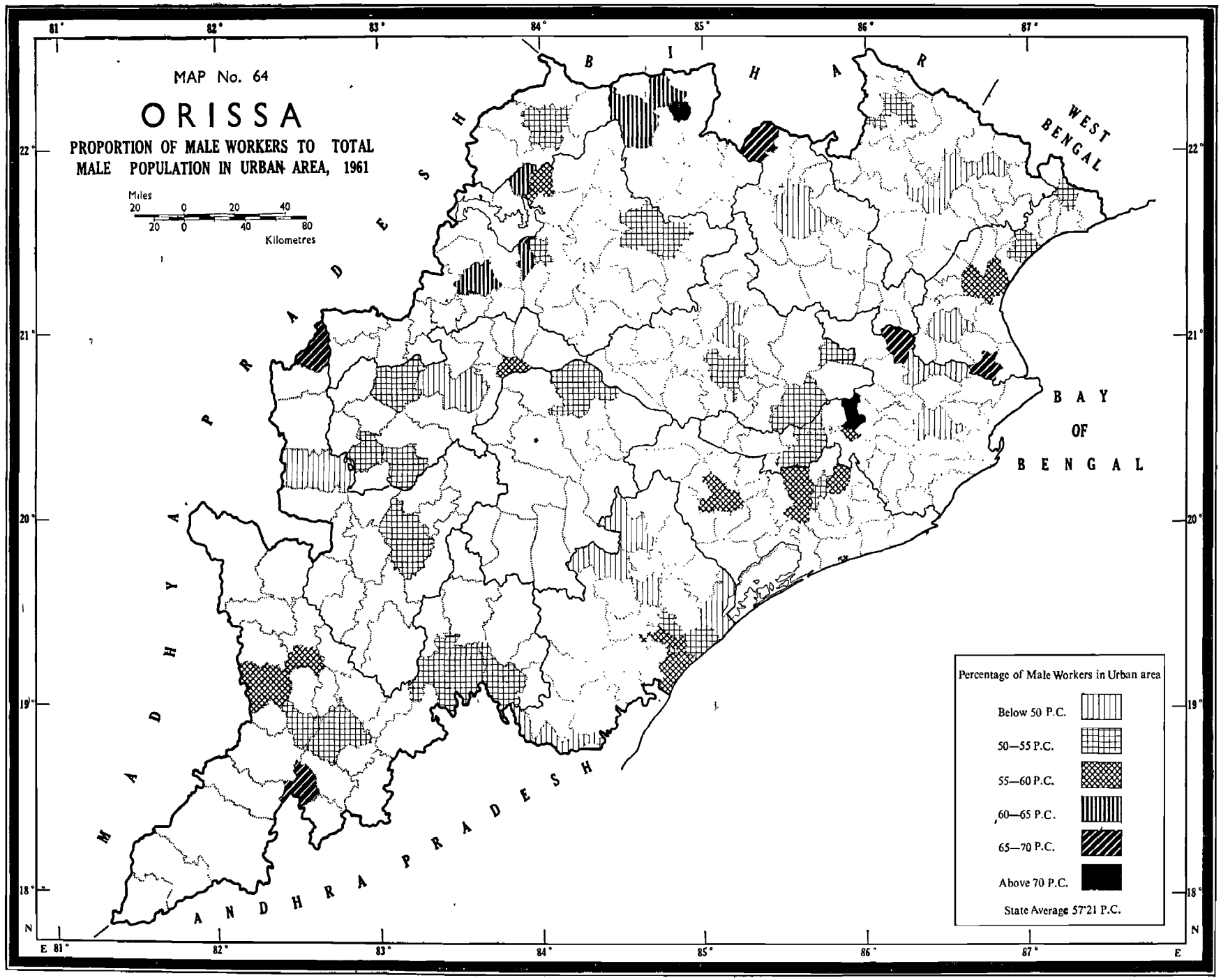
The map brings out the proportion of male workers to the total male population in rural areas of the State in 1961. The proportion has been calculated on percentage basis for each police station in the State, and is divided into six ranges above and below the State average, viz., below 58, 58 to 60, 60 to 62, 62 to 64, 64 to 66 and above 66 per cent. The different ranges are hatched in suitable shades in black by choropleth method.

There are 295 police stations in the State having rural population. The total male population in rural areas comes to 8,156,598 out of which 4,977,082 persons (61·02%) are workers. Burla PS in the district of Sambalpur has the highest percentage of rural male workers (70·51%) followed by Birmaharajpur PS (69·59%) in Bolangir district and Padmapur PS (69·29%) in Koraput district.

A glance over the map will give a clear picture of the concentration of male workers in rural areas. If a line is drawn running from Sundargarh in the north to the common border of Koraput and Ganjam in the south, further extending up to the south-western tip of Koraput district, it will pass through quite a heavy concentration of rural male workers. The eastern half of the State is poor in this regard as compared with the western half.

The following statement gives the percentage figures of rural male workers in the districts of the State in 1961 :

District	Percentage
Koraput	65·73
Bolangir	65·48
Sambalpur	65·29
Baudh-Khondmals	64·69
Kalahandi	63·36
Sundargarh	61·81
State Average	61·02
Mayurbhanj	60·13
Puri	59·96
Dhenkanal	59·76
Ganjam	59·63
Keonjhar	58·51
Cuttack	57·89
Balasore	57·43


MAP No. 64
ORISSA
PROPORTION OF MALE WORKERS TO TOTAL MALE POPULATION IN URBAN AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Percentage of Male Workers in Urban area
Below 50 P.C.
50—55 P.C.
55—60 P.C.
60—65 P.C.
65—70 P.C.
Above 70 P.C.
State Average 57·21 P.C.
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 64

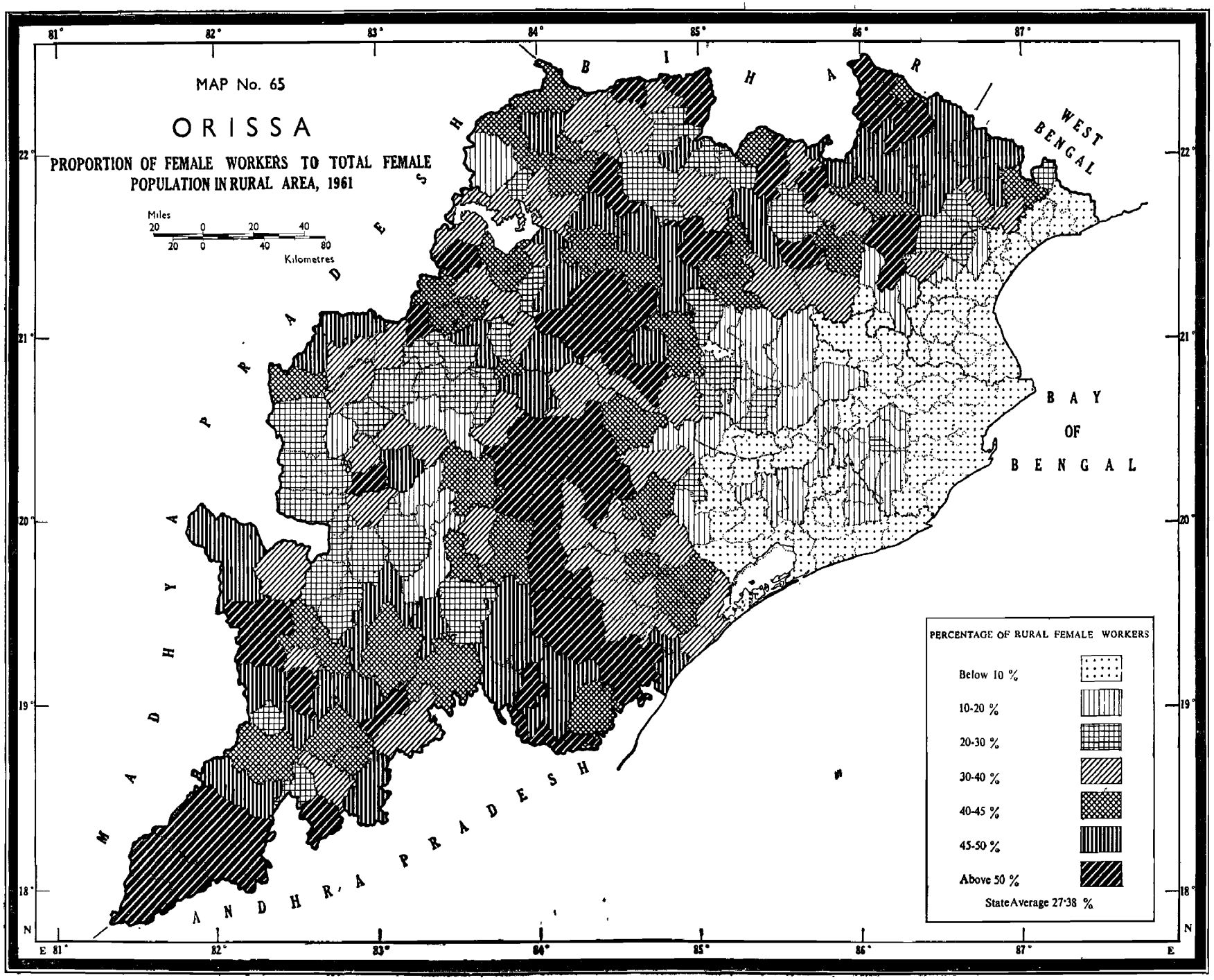
PROPORTION OF MALE WORKERS TO THE TOTAL MALE POPULATION IN URBAN AREAS, 1961

The proportion of male workers to the total male population of each urban area of the State is calculated percentagewise. The percentage figures are graded into six divisions, viz., below 50, 50 to 55, 55 to 60, 60 to 65, 65 to 70 and above 70. The police stations in which the respective towns occur, or the urban localities, which extend over one or more police stations wholly, are hatched in six different shades by choropleth method.

There are 62 towns spread over 61 police stations in the State. The total urban male population in the State is 613,988 and out of this 351,284 persons (57·21%) are workers. Chowdwar PS has the highest percentage of male workers (72·90%) followed by Rourkela town PS (75·85%). On the other hand, the police stations having the lowest percentage are Khariar (43·86%), and Surada (44·84%). The proportion of male workers is quite high in almost all the industrial centres, viz., the police stations of Rourkela, Chowdwar, Jonk, Chandbali, Korai, Brajarajnagar and Barbil.

The statement below gives the percentage figures of urban male workers of the districts in 1961 :

District	Percentage
Sundargarh	71·25
Keonjhar	60·29
Sambalpur	58·54
Puri	57·32
State Average	57·21
Cuttack	56·76
Koraput	55·47
Kalahandi	54·32
Balasore	54·17
Baudh-Khondmals	53·03
Dhenkanal	52·12
Bolangir	51·56
Mayurbhanj	50·11
Ganjam	49·75


MAP No. 65
ORISSA
PROPORTION OF FEMALE WORKERS TO TOTAL FEMALE POPULATION IN RURAL AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E
PERCENTAGE OF RURAL FEMALE WORKERS
Below 10 %
10-20 %
20-30 %
30-40 %
40-45 %
45-50 %
Above 50 %
State Average 27·38 %

MAP No. 65

PROPORTION OF FEMALE WORKERS TO THE TOTAL FEMALE POPULATION IN RURAL AREAS, 1961

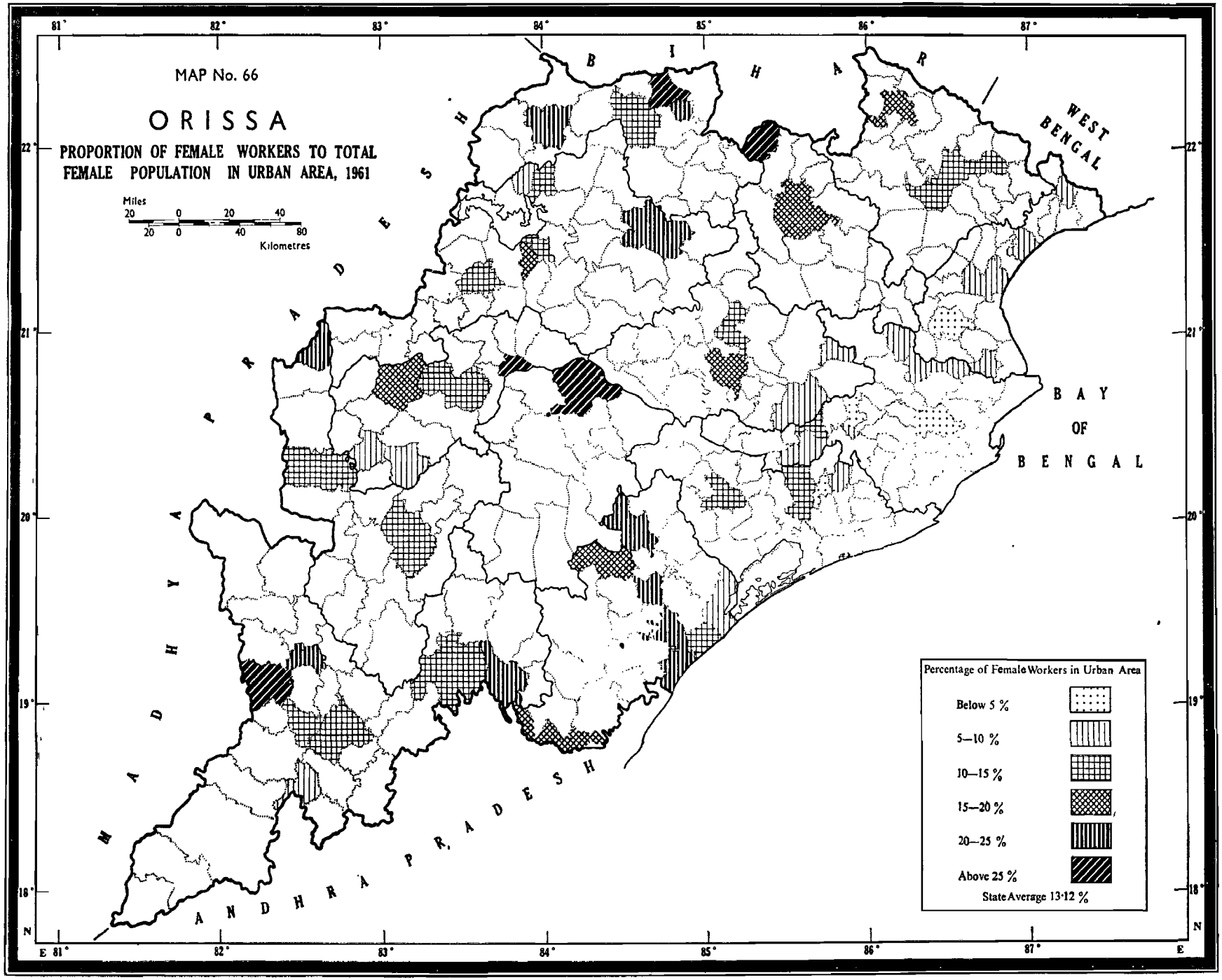
The map brings out the proportion of female workers to the total female population in rural areas of the State in 1961. The proportion has been calculated on percentage basis for each police station in the State and divided into seven ranges above and below the State average, viz., below 10, 10 to 20, 20 to 30, 30 to 40, 40 to 45, 45 to 50 and above 50. The different ranges are hatched in suitable shades in black by choropleth method.

There are 295 police stations in the State having rural population. The total female population in the rural areas of the State comes to 8,282,598 out of which 2,268,129 females (27·38%) are workers. The police stations having the highest percentage of rural female workers are Phiringia (63·7%), Naktideul (59·5%) and Bisoi (59·02%) in the districts of Baudh-Khondmals, Sambalpur and Mayurbhanj respectively. On the other hand, the police stations having the lowest percentage of rural female workers are Bhograi (2·24%) in Balasore district, Rajnagar (2·81%) in Cuttack district, Bhandaripokhari (2·86%) and Bansada (2·93%) in Balasore district.

Similar to Map No. 63, a glance over the map will give a clear picture of the concentration of female workers in rural areas. Excluding the coastal districts of Cuttack, Puri, Balasore and parts of Dhenkanal and Ganjam, the rest of the State has a thicker concentration of female workers. A closer study of the map shows that the central part or the spine of the State running from NE to SW has the maximum concentration of female workers. These regions are mostly mountainous or elevated plains, being offshoots of the Eastern Ghats.

The following statement gives the percentage figures of rural female workers in the districts of Orissa in 1961 :

District	Percentage
Balasore	6·15
Cuttack	8·09
Puri	9·96
Dhenkanal	23·66
State Average	27·38
Kalahandi	28·52
Keonjhar	31·44
Bolangir	32·38
Sundargarh	38·18
Sambalpur	41·84
Ganjam	42·45
Koraput	44·20
Mayurbhanj	44·33
Baudh-Khondmals	48·60


MAP No. 66
ORISSA
PROPORTION OF FEMALE WORKERS TO TOTAL FEMALE POPULATION IN URBAN AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
Percentage of Female Workers in Urban Area
Below 5 %
5—10 %
10—15 %
15—20 %
20—25 %
Above 25 %
State Average 13·12 %

MAP No. 66

PROPORTION OF FEMALE WORKERS TO THE TOTAL FEMALE POPULATION IN URBAN AREAS, 1961

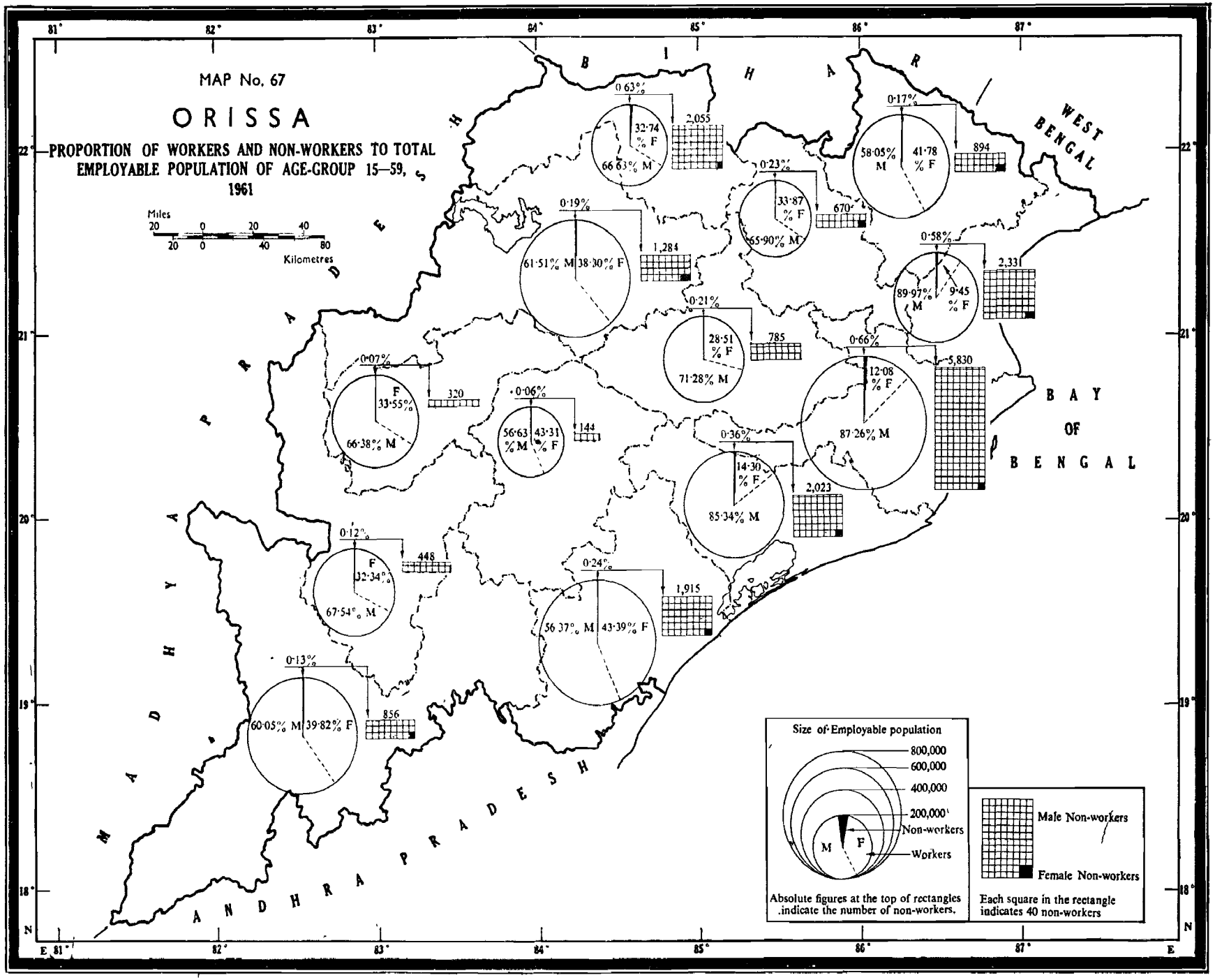
The map brings out the proportion of female workers to the total female population in urban areas of the State during 1961. In other words, the map shows the percentage of female workers of the towns of those police stations which have urban population. This map is a counterpart of the Map No. 64, which represents the proportion of male workers in urban areas.

Proportion of female workers in urban areas to the total female population of those areas is calculated on percentage basis and divided into six groups above and below the State average, viz., below 5, 5 to 10, 10 to 15, 15 to 20, 20 to 25 and above 25 per cent. The police stations having urban population and falling under the above groups are hatched in six different shades. There are 61 police stations in the State having urban population. The total female population in urban areas of the State is 495,662 of which 65,034 (13·12%) are workers. The police station having the highest percentage of urban female workers is Birmitrapur (34·64) followed by Barbil (34·16) and Sonepur (31·38) whereas the police stations having the lowest percentage of urban female workers are Kendrapara (3·69) and Bhadrak (3·97).

A study of the map indicates that the percentage of female workers is lower in the eastern part of the State than in the rest. Social customs are primarily responsible for this divergent pattern.

The following statement gives the district-wise percentage figures of female workers in urban areas in 1961 :

District	Percentage
Baudh-Khondmals	27·15
Keonjhar	26·77
Sundargarh	22·76
Ganjam	16·16
Kalahandi	16·14
Koraput	16·10
Bolangir	13·86
State Average	13·12
Sambalpur	13·10
Mayurbhanj	12·53
Dhenkanal	10·62
Puri	9·71
Balasore	6·54
Cuttack	6·36


MAP No. 67
ORISSA
—PROPORTION OF WORKERS AND NON-WORKERS TO TOTAL EMPLOYABLE POPULATION OF AGE-GROUP 15—59, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
BAY OF BENGAL
MADHYA PRADESH
ANDHRA PRADESH
0·63%
32·74 % F
66·63% M
2,055
0·17%
58·05% M
41·78 % F
894
0·23%
33·87 % F
65·90% M
670
0·19%
61·51% M 38·30% F
1,284
0·58%
89·97% M
9·45 % F
2,331
0·21%
28·51 % F
71·28% M
785
0·66%
12·08 % F
87·26% M
5,830
0·07%
F 33·55%
66·38% M
320
0·06%
56·63 % M
43·31 % F
144
0·36%
14·30 % F
85·34% M
2,023
0·12%
F 32·34%
67·54% M
448
0·24%
56·37% M 43·39% F
1,915
0·13%
60·05% M 39·82% F
856
Size of Employable population
800,000
600,000
400,000
200,000
Non-workers
Workers
M
F
Absolute figures at the top of rectangles indicate the number of non-workers.
Male Non-workers
Female Non-workers
Each square in the rectangle indicates 40 non-workers
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 67

PROPORTION OF WORKERS AND NON-WORKERS TO THE TOTAL EMPLOYABLE POPULATION OF AGE-GROUP 15—59, 1961

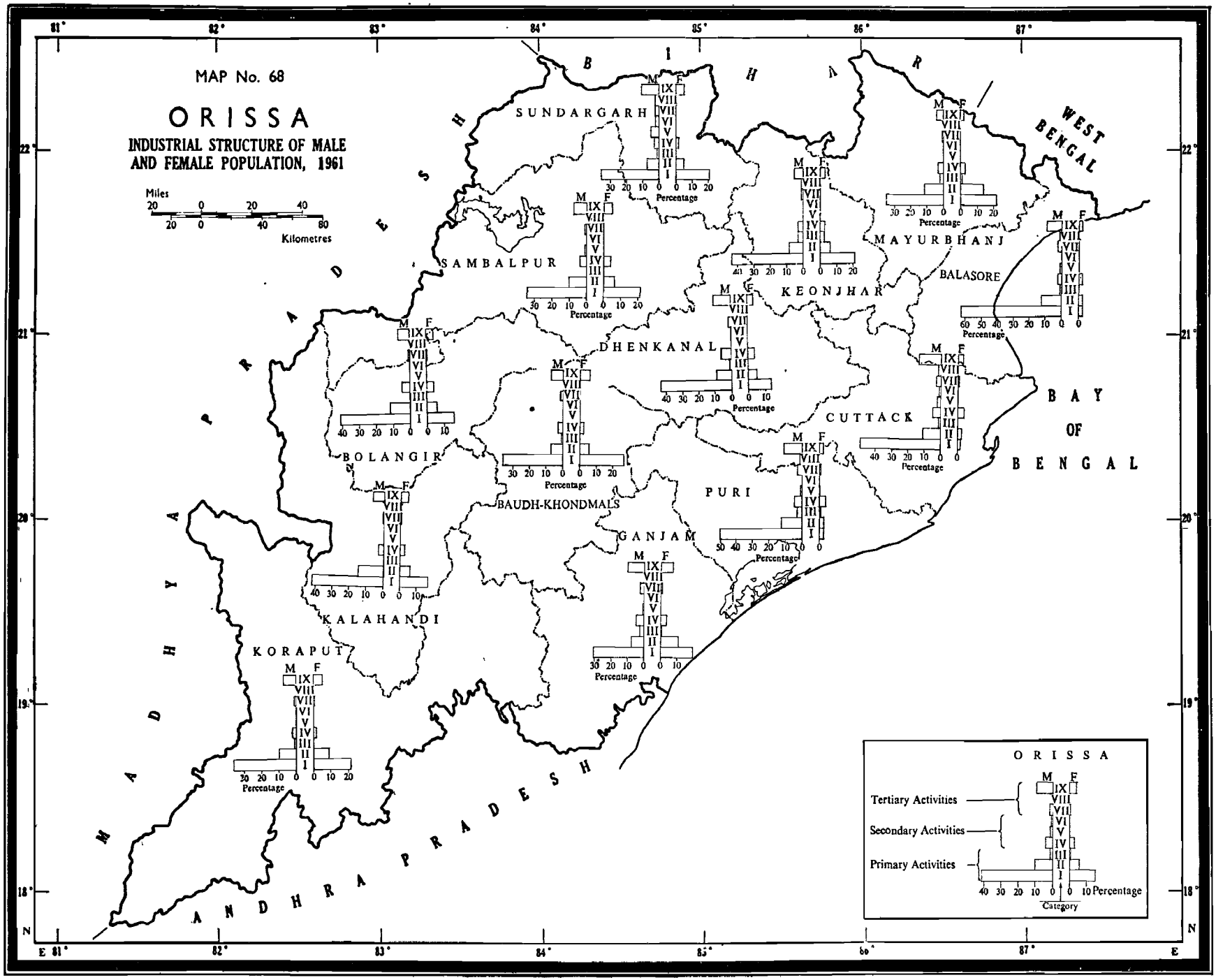
The map brings out the proportion of workers and non-workers to the total employable population in 1961. This proportion is measured in percentage for each district with sexwise divisions. Employable population for purpose of this map is taken to mean the number of persons in the age-group 15—59, excluding those engaged in household duties and those who are full-time students, disabled persons, rentiers, beggars and inmates of institutions. In other words, employable population includes (i) all workers and (ii) among non-workers, only those persons who are seeking employment for the first time and those who were employed before but are now out of employment, belonging to the above mentioned age-group.

Pie-graphs are drawn in each district, proportionate to the total employable population of the district. Sectors are drawn in each circle to demarcate workers and non-workers. The sector showing non-workers is shaded in black. The sectors are again demarcated by dashed line to show the proportion of males and females. But the percentage of non-workers is so low that the black sectors in each circle look exceedingly slender. Consequently, it is impossible to run a dashed line through it to demonstrate sex divisions. Therefore the proportion of non-workers is represented in each district by rectangular blocks. These blocks are divided into small squares and the proportion of females is shaded in black. Each small square represents 40 non-workers among employable population.

The number of employable persons in the State in 1961 was 6,568,275 of whom 6,548,720 were workers and only 19,555 were non-workers. Among the workers 4,547,315 were males and 2,001,405 females, whereas among non-workers there were 19,114 males and only 441 females. The male workers and non-workers constituted 69·23 per cent and 0·29 per cent respectively. Cuttack district had the highest employable population (890,098) of whom 884,268 were workers (776,726 males and 107,542 females) and 5,830 non-workers (5,779 males and 51 females). Closely following Cuttack is the district of Ganjam. The district having the lowest employable population is Baudh-Khondmals with 248,850 persons, of whom 140,924 were male workers and 107,782 female workers, while there were 140 male non-workers and only 4 non-working females.

The statement below gives a list of workers and employable non-workers in the districts of Orissa in 1961 :

State/District	Total Employable population	Workers		Employable Non-workers	
		Males	Females	Males	Females
ORISSA	6,568,275	4,547,315	2,001,405	19,114	441
Kalahandi	377,559	254,991	122,120	445	3
Koraput	680,141	408,437	270,848	826	30
Sambalpur	682,100	419,542	261,274	1,222	62
Bolangir	428,943	284,726	143,897	320	—
Baudh-Khondmals	248,850	140,924	107,782	140	4
Ganjam	775,324	437,021	336,388	1,871	44
Sundargarh	329,163	219,337	107,771	2,029	26
Dhenkanal	367,835	262,186	104,864	780	5
Puri	564,604	481,834	80,747	1,975	48
Keonjhar	289,069	190,506	97,893	620	50
Cuttack	890,098	776,726	107,542	5,779	51
Mayurbhanj	531,823	308,719	222,210	835	59
Balasore	402,766	362,366	38,069	2,272	59


MAP No. 68
ORISSA
INDUSTRIAL STRUCTURE OF MALE AND FEMALE POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
MAYURBHANJ
KEONJHAR
BALASORE
DHENKANAL
CUTTACK
BOLANGIR
BAUDH-KHONDMALS
PURI
GANJAM
KALAHANDI
KORAPUT
Percentage
ORISSA
Tertiary Activities
Secondary Activities
Primary Activities
Category

MAP No. 68

INDUSTRIAL STRUCTURE OF MALE AND FEMALE POPULATION, 1961

The map displays the pattern of industrial occupations of the working population of each district by sexes. The number of workers belonging to each category is calculated in percentage. Such percentages are shown by drawing two vertical parallel lines from which 9 horizontal rectangular bars are drawn on either side, the bars being proportionate in length to the respective percentages of industrial categories. The serial number of the category is indicated against the bars within the space in between the two vertical lines. The bars to the left represent males and to the right represent females.

The working population is divided into 9 industrial categories as given below :

Category I—Cultivator

Category II—Agricultural Labourer

Category III—Mining, quarrying, livestock, forestry, fishing, hunting and plantations, orchards and allied activities

Category IV—Household Industry

Category V—Manufacturing other than household industry

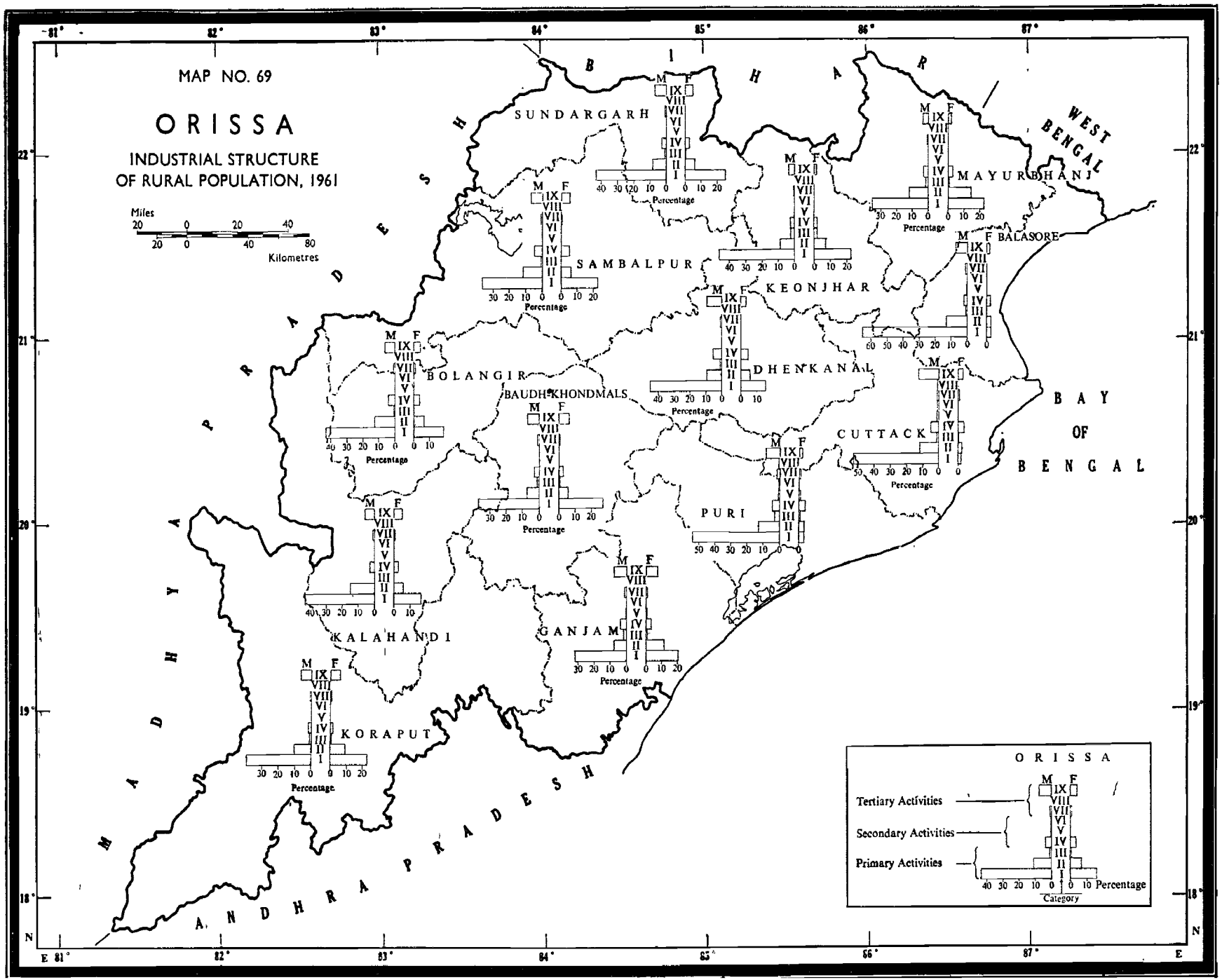
Category VI—Construction

Category VII—Trade and commerce

Category VIII—Transport, storage and communications

Category IX—Other Services

In Category I, the highest percentage of males are found in Balasore and the lowest percentage in Ganjam, while the highest percentage of females are noticed in Baudh-Khondmals and the lowest percentage in Cuttack. Among the agricultural labourers (Category II) the highest percentage of males is found in Kalahandi and of females in Mayurbhanj, while the lowest percentage of males is found in Sundargarh and of females in Baudh-Khondmals. In Category IX 'Other Services', the highest percentage among both sexes is seen in Ganjam and the lowest percentage both among males and females occurs in Mayurbhanj.


MAP NO. 69
ORISSA
INDUSTRIAL STRUCTURE
OF RURAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
BOLANGIR
BAUDH-KHONDMALS
DHENKANAL
CUTTACK
PURI
KALAHANDI
GANJAM
KORAPUT
Percentage
ORISSA
Tertiary Activities
Secondary Activities
Primary Activities
Category
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

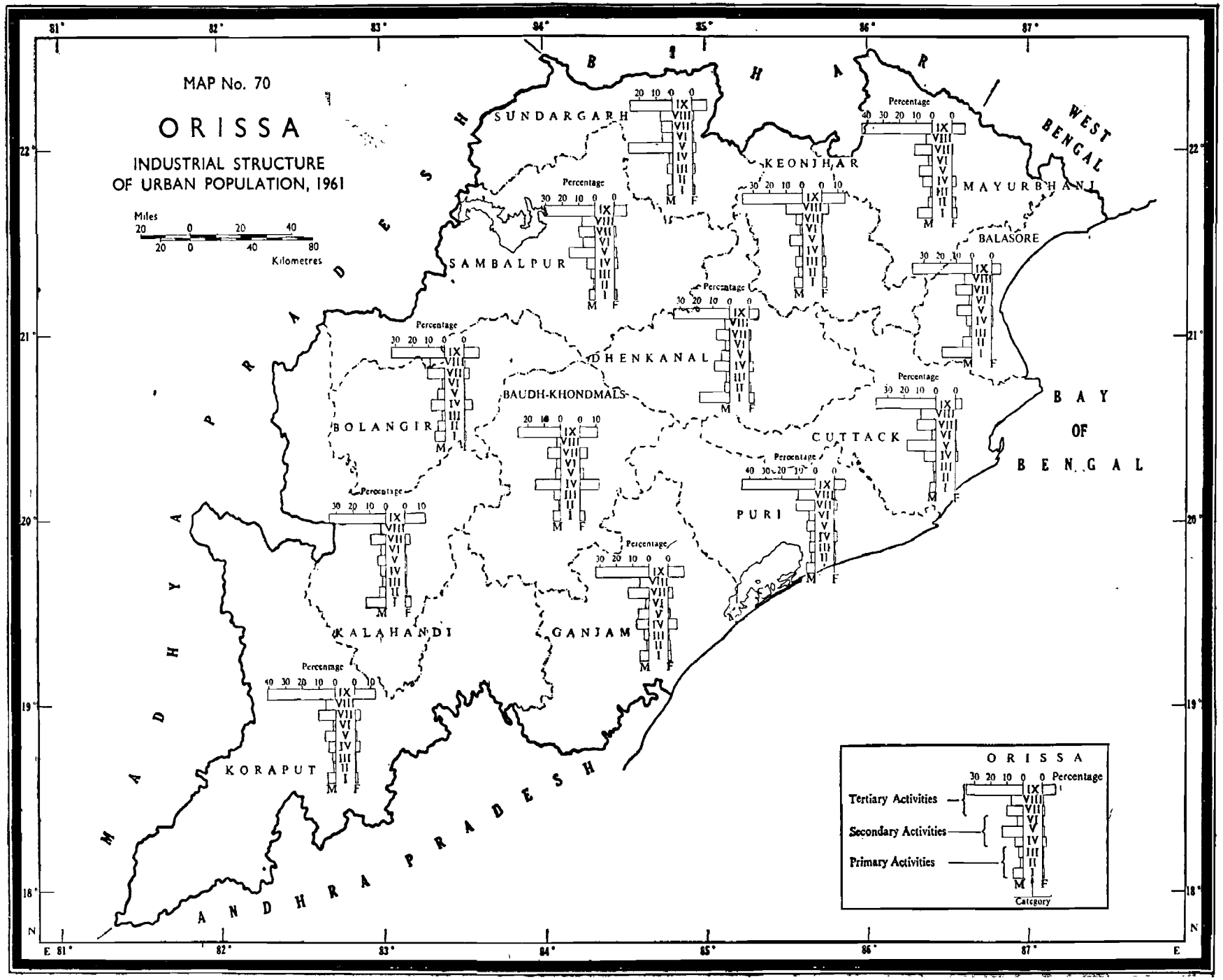
MAP No. 69

INDUSTRIAL STRUCTURE OF RURAL POPULATION, 1961

The pattern of industrial occupations of the rural population of all the districts is shown in the map in two divisions, males and females. It is drawn on the same principle as mentioned in the Explanatory Note to the previous Map (No. 68).

Categories I and II (Cultivators and Agricultural Labourers) constitute the largest percentages in all the districts. The next significant group is Category IX 'Other Services'.

Considered sexwise, the females of three coastal districts—Balasore, Cuttack and Puri show poor rate of participation in industrial occupations. Other districts, particularly Baudh-Khondmals, have much better performance in this regard.

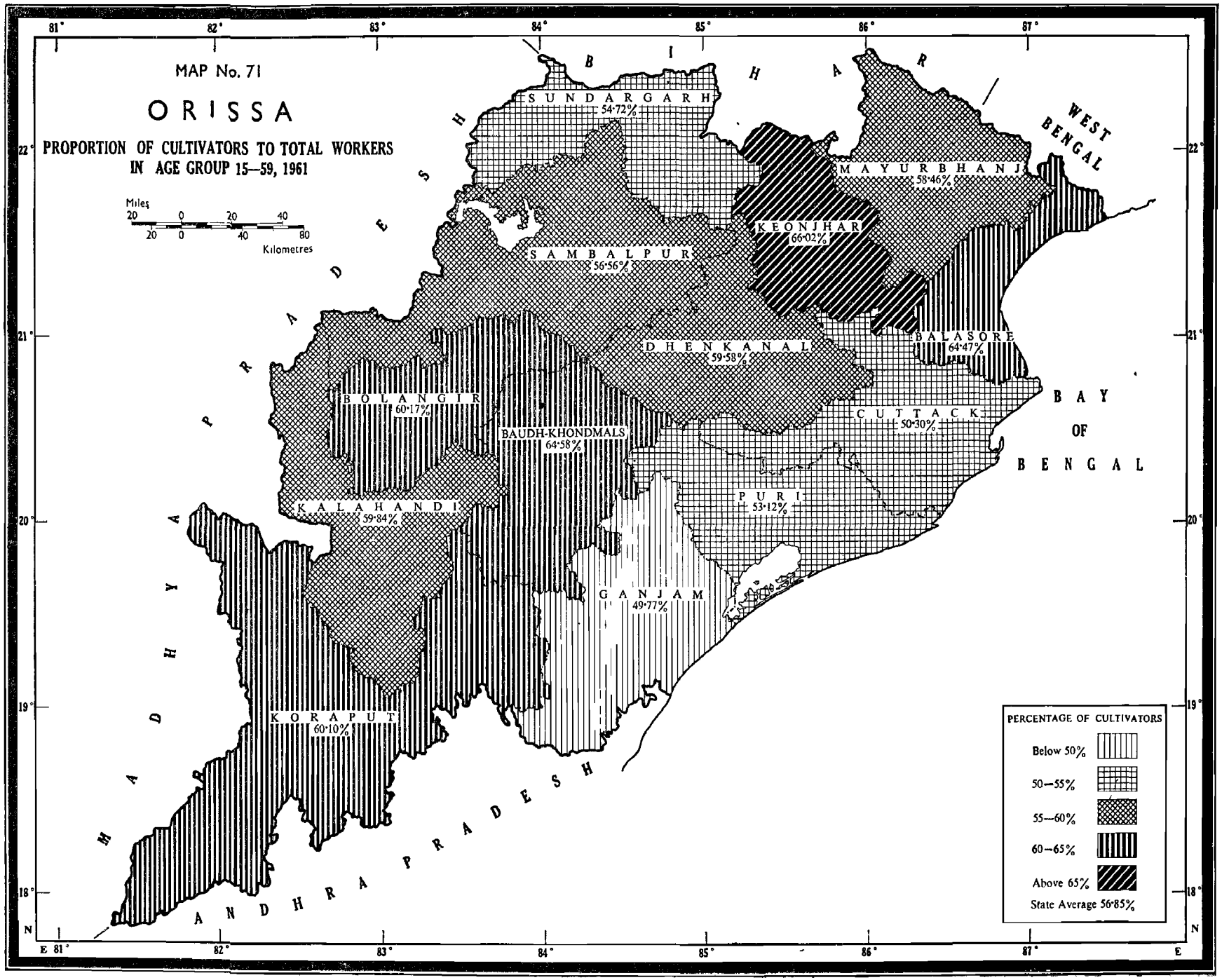

MAP No. 70
ORISSA
INDUSTRIAL STRUCTURE
OF URBAN POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
KEONJHAR
MAYURBHANJ
SAMBALPUR
BALASORE
DHENKANAL
BAUDH-KHONDMALS
BOLANGIR
CUTTACK
PURI
KALAHANDI
GANJAM
KORAPUT
Percentage
M F
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N E
ORISSA
Percentage
Tertiary Activities
Secondary Activities
Primary Activities
Category

MAP No. 70

INDUSTRIAL STRUCTURE OF URBAN POPULATION, 1961

The map shows the pattern of industrial occupations of the urban population of each district by sexes. It is drawn on the same principle as the two previous maps, namely, Map Nos. 68 and 69. The principle involved is explained in the Explanatory Note to Map No. 68.

The structure obtained, as the map shows, is an inverted pyramid in each district. The base is much less extensive than the roof. In this aspect the urban structure presents a picture which is just opposite to that of the rural structure. This is natural because in all urban localities, Categories I and II connected with agriculture claim much less percentage than other categories, particularly Category IX (Other Services). The categories occurring in between the first and the last are of varying percentages, but generally each one is larger than the first and smaller than the last.


MAP No. 71
ORISSA
PROPORTION OF CULTIVATORS TO TOTAL WORKERS IN AGE GROUP 15—59, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 54·72%
SAMBALPUR 56·56%
KEONJHAR 66·02%
MAYURBHANJ 58·46%
BALASORE 64·47%
DHENKANAL 59·58%
CUTTACK 50·30%
BOLANGIR 60·17%
BAUDH-KHONDMALS 64·58%
PURI 53·12%
KALAHANDI 59·84%
GANJAM 49·77%
KORAPUT 60·10%
PERCENTAGE OF CULTIVATORS
Below 50%
50—55%
55—60%
60—65%
Above 65%
State Average 56·85%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 71

PROPORTION OF CULTIVATORS TO TOTAL WORKERS IN AGE-GROUP 15—59, 1961

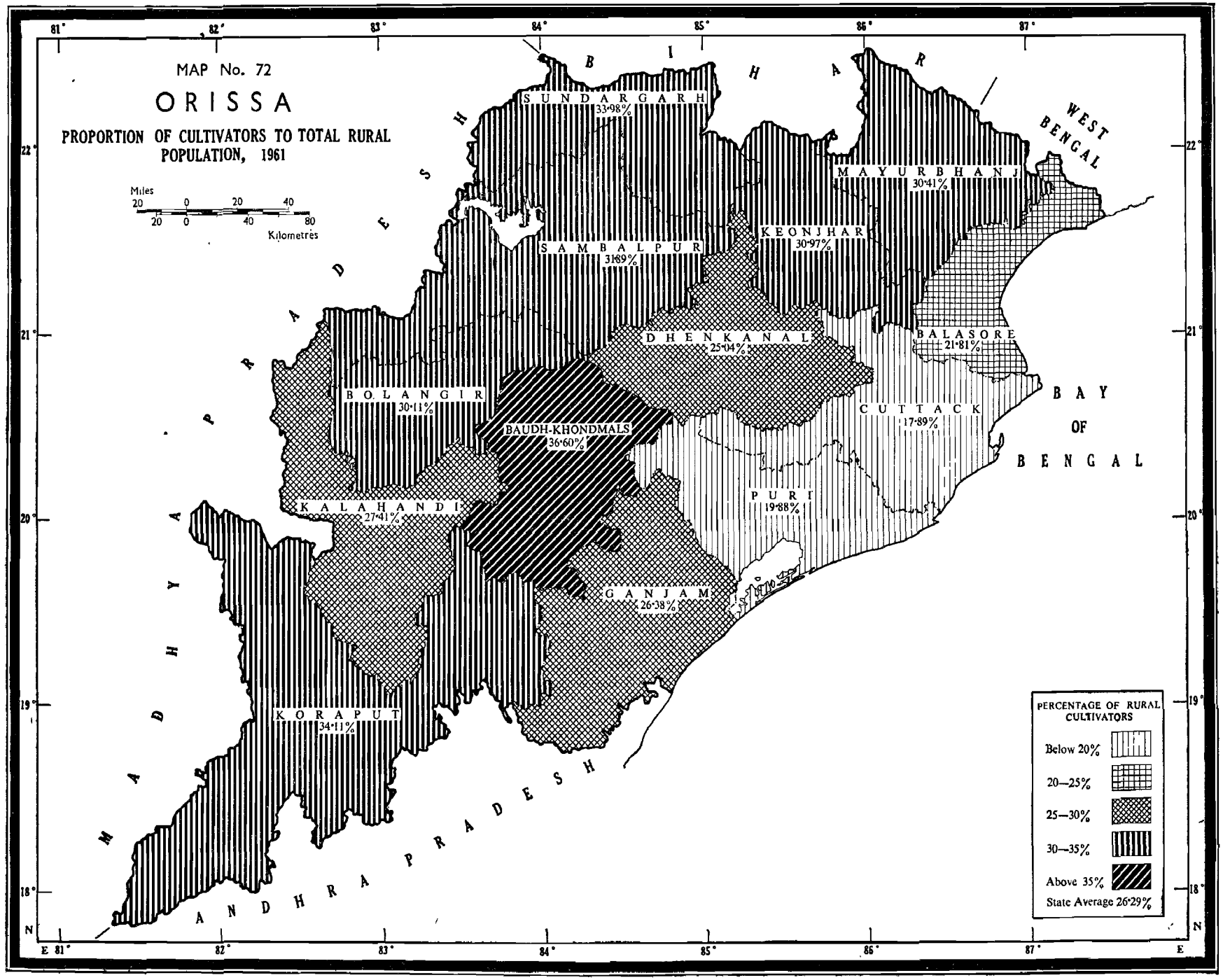
The map represents the proportion of cultivators to total workers in age-group 15—59 in the districts of Orissa in 1961. Such proportion is calculated in percentage and grouped into five ranges above and below the State average (56·85%), viz., below 50, 50 to 55, 55 to 60, 60 to 65, and above 65 per cent. The districts have been hatched in different shades corresponding to the ranges in which they fall.

There are 6,548,720 workers in the age-group 15—59 in Orissa, out of which 3,722,649 persons or 56·85% are cultivators. The districts of Ganjam (49·77%) and Cuttack (50·30%) have the lowest percentage of cultivators. The district at the top is Keonjhar (66·02%) followed by Baudh-Khondmals (64·58%) and Balasore (64·47%). The districts having percentage higher than the State's are Kalahandi, Koraput, Bolangir, Baudh-Khondmals, Dhenkanal, Keonjhar, Mayurbhanj and Balasore, while the rest of the districts are below the State average.

The map shows two darker patches, one in the N.E. and the other in the S.W. indicating that the percentage of cultivators is higher in these areas than in the rest of the State.

The following statement gives the percentage of cultivators in districts in 1961 :

District	Percentage
Keonjhar	66·02
Baudh-Khondmals	64·58
Balasore	64·47
Bolangir	60·17
Koraput	60·10
Kalahandi	59·84
Dhenkanal	59·58
Mayurbhanj	58·46
State Average	56·85
Sambalpur	56·56
Sundargarh	54·72
Puri	53·12
Cuttack	50·30
Ganjam	49·77


MAP No. 72
ORISSA
PROPORTION OF CULTIVATORS TO TOTAL RURAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 33·98%
SAMBALPUR 31·89%
KEONJHAR 30·97%
MAYURBHANJ 30·41%
DHENKANAL 25·04%
BALASORE 21·81%
BOLANGIR 30·11%
BAUDH-KHONDMALS 36·60%
CUTTACK 17·89%
PURI 19·88%
KALAHANDI 27·41%
GANJAM 26·38%
KORAPUT 34·11%
PERCENTAGE OF RURAL CULTIVATORS
Below 20%
20—25%
25—30%
30—35%
Above 35%
State Average 26·29%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 72

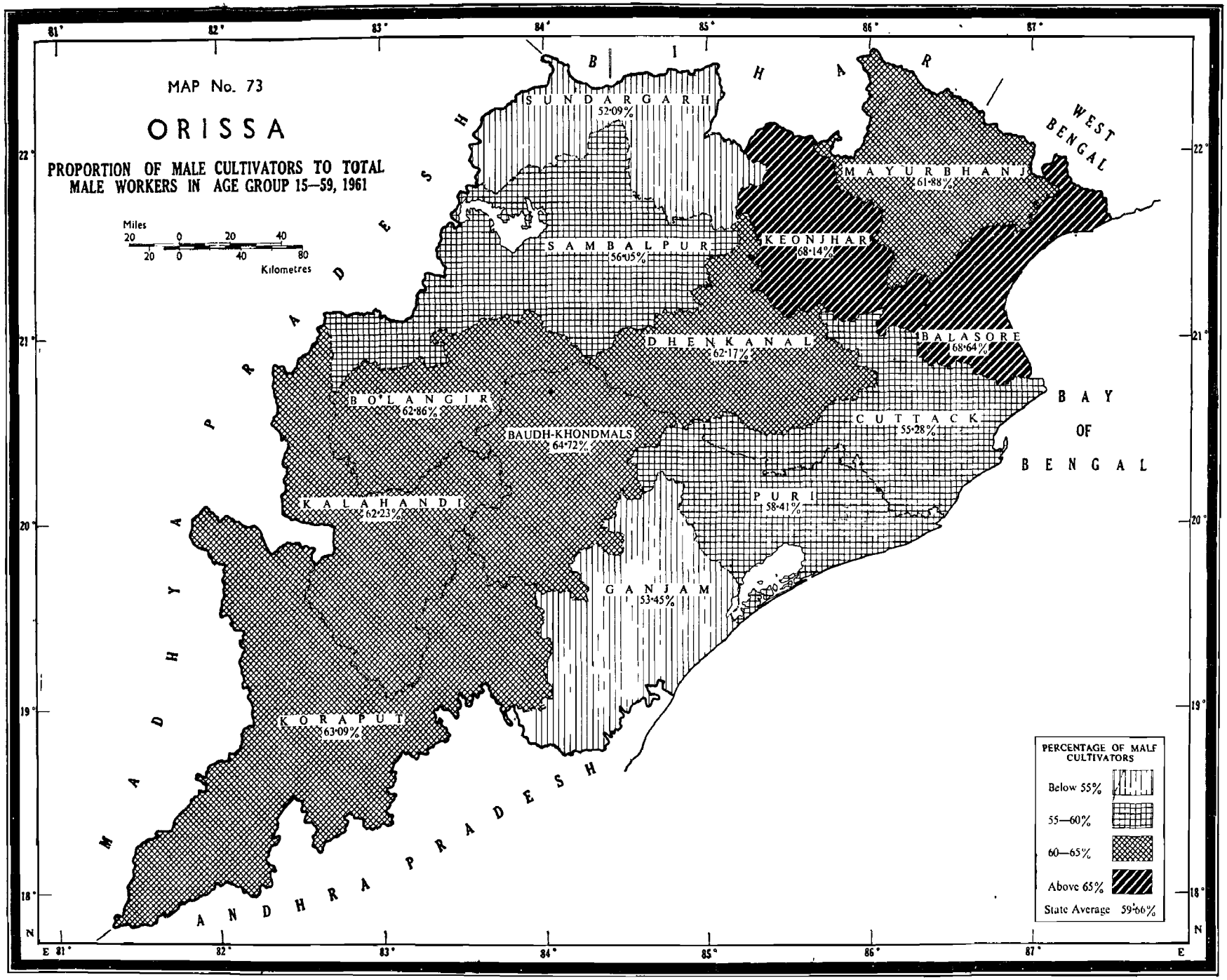
PROPORTION OF CULTIVATORS TO TOTAL RURAL POPULATION, 1961

The map exhibits the proportion of cultivators in the rural areas to the total rural population of districts in 1961. The proportion is measured in percentage and grouped into six ranges, above and below the State average (26·29%), viz., below 40, 40 to 46, 46 to 52, 52 to 58, 58 to 64, and above 64 per cent. The districts falling under these groups are hatched in suitable shades.

In 1961, there were 16,439,196 persons in the rural areas of the State out of which 4,322,465 persons or 26·29 per cent were working as cultivators. Cuttack district has the lowest percentage of cultivators, namely, 17·89 per cent. On the other hand, Baudh-Khondmals has the highest percentage of 36·60. The districts having a higher percentage than the State average are Kalahandi, Koraput, Bolangir, Sambalpur, Baudh-Khondmals, Ganjam, Sundargarh, Keonjhar and Mayurbhanj. A study of the map will indicate that the coastal districts, viz., Balasore, Cuttack, Puri and also Dhenkanal have a lower percentage of cultivators than other districts. The mountainous districts of Koraput, Baudh-Khondmals and Sundargarh have a high percentage of cultivators.

The percentage of cultivators to the rural population of each district is given below:

District	Percentage
Baudh-Khondmals	36·60
Koraput	34·11
Sundargarh	33·98
Sambalpur	31·89
Keonjhar	30·97
Mayurbhanj	30·41
Bolangir	30·11
Kalahandi	27·41
Ganjam	26·38
State Average	26·29
Dhenkanal	25·04
Balasore	21·81
Puri	19·88
Cuttack	17·89


MAP No. 73
ORISSA
PROPORTION OF MALE CULTIVATORS TO TOTAL MALE WORKERS IN AGE GROUP 15—59, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH 52·09%
SAMBALPUR 56·05%
KEONJHAR 68·14%
MAYURBHANJ 61·88%
BALASORE 68·64%
DHENKANAL 62·17%
BOLANGIR 62·86%
BAUDH-KHONDMALS 64·72%
CUTTACK 55·28%
KALAHANDI 62·23%
PURI 58·41%
GANJAM 53·45%
KORAPUT 63·09%
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE OF MALE CULTIVATORS
Below 55%
55—60%
60—65%
Above 65%
State Average 59·66%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 73

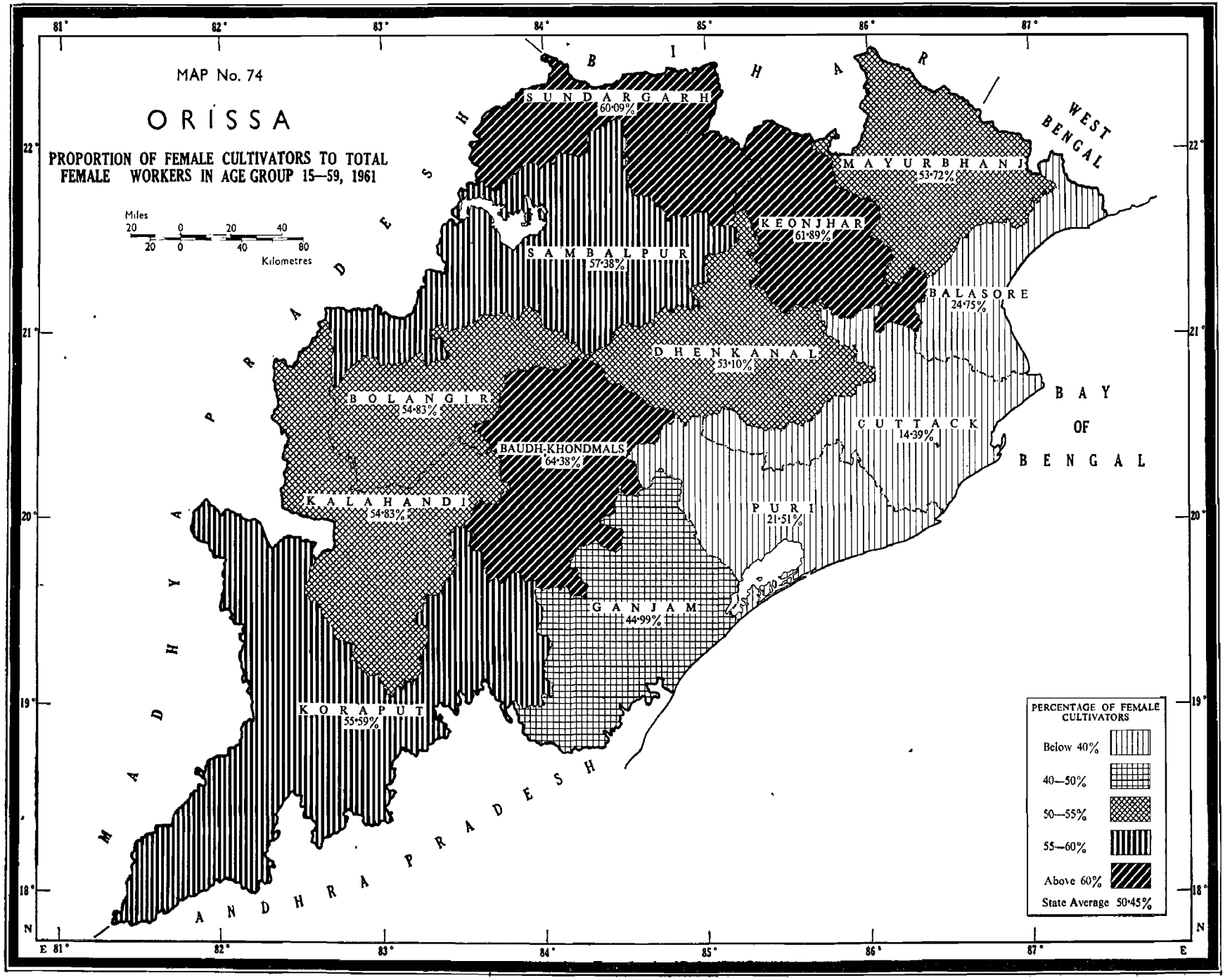
PROPORTION OF MALE CULTIVATORS TO TOTAL MALE WORKERS IN THE AGE-GROUP 15—59, 1961

The map represents the proportion of male cultivators to the total male workers in the age-group 15—59 in the districts of Orissa in 1961. The proportion is indicated in percentage and has been grouped into four ranges, above and below the State average (59·66%), viz., below 55, 55 to 60, 60 to 65 and above 65 per cent. Choropleth method is used to hatch the districts in suitable shades, corresponding to their groups.

In 1961, there were 4,865,305 males in the age-group 15—59, living in the State, while 3,384,497 persons (74·43%) were actively engaged in cultivation. Sundargarh district has the lowest percentage (52·09%) of cultivators, whereas Balasore has the highest (68·64%). The next in order are the districts of Keonjhar (68·14%) and Baudh-Khondmals (64·72%) respectively. The low percentage of cultivators in Sundargarh district may be explained by the shift in employment in favour of industrial avocations in the district.

A glance over the map will show one darker patch in the north-east consisting of Balasore and Keonjhar districts. This shows that the people in these districts are mostly agriculturists. The percentage of cultivators to the total male workers in the age-group 15—59 of each district is given below:

District	Percentage
Balasore	68·64
Keonjhar	68·14
Baudh-Khondmals	64·72
Koraput	63·09
Bolangir	62·86
Kalahandi	62·23
Dhenkanal	62·17
Mayurbhanj	61·88
State Average	59·66
Puri	58·41
Sambalpur	56·05
Cuttack	55·28
Ganjam	53·45
Sundargarh	52·09


MAP No. 74
ORISSA
PROPORTION OF FEMALE CULTIVATORS TO TOTAL FEMALE WORKERS IN AGE GROUP 15—59, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 60·09%
SAMBALPUR 57·38%
MAYURBHANJ 53·72%
KEONJHAR 61·89%
BALASORE 24·75%
DHENKANAL 53·10%
BOLANGIR 54·83%
CUTTACK 14·39%
BAUDH-KHONDMALS 64·38%
KALAHANDI 54·83%
PURI 21·51%
GANJAM 44·99%
KORAPUT 55·59%
PERCENTAGE OF FEMALE CULTIVATORS
Below 40%
40—50%
50—55%
55—60%
Above 60%
State Average 50·45%
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E

MAP No. 74

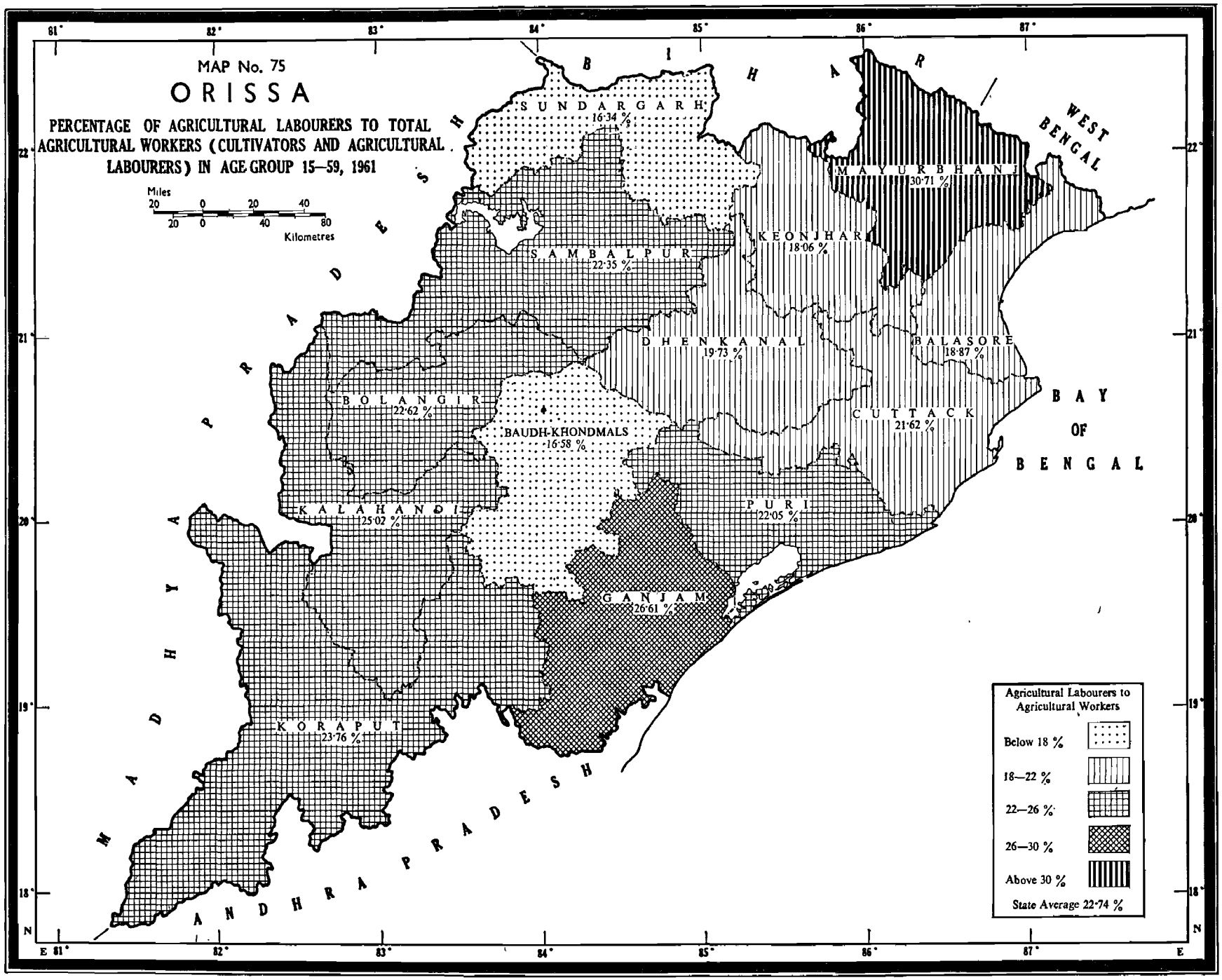
PROPORTION OF FEMALE CULTIVATORS TO TOTAL FEMALE WORKERS IN AGE-GROUP 15—59, 1961

The map shows the proportion of female cultivators to the total female workers in age-group 15—59 in each district of Orissa. This map is akin to the previous map. The principle of drawing the map too is similar to the previous map. The percentages of female cultivators for the districts are grouped into five ranges above and below the State average (50·45%), viz., below 40, 40 to 50, 50 to 55, 55 to 60 and above 60 per cent. The districts are hatched in suitable shades accordingly.

There were 2,001,405 women workers in the State in 1961, out of whom 1,009,742 females (50·45%) were cultivators. Baudh-Khondmals district has the largest percentage of female cultivators, namely, (64·38%) followed by Keonjhar with 61·89 per cent. On the other hand, the district with the lowest percentage of female cultivators is Cuttack (14·39%) followed by Puri (21·51%).

The following statement gives the percentage figures of females engaged in cultivation in each district of Orissa in 1961:

District	Percentage
Baudh-Khondmals	64·38
Keonjhar	61·89
Sundargarh	60·09
Sambalpur	57·38
Koraput	55·59
Kalahandi	54·83
Bolangir	54·83
Mayurbhanj	53·72
Dhenkanal	53·10
State Average	50·45
Ganjam	44·99
Balasore	24·75
Puri	21·51
Cuttack	14·39


MAP No. 75
ORISSA
PERCENTAGE OF AGRICULTURAL LABOURERS TO TOTAL AGRICULTURAL WORKERS (CULTIVATORS AND AGRICULTURAL LABOURERS) IN AGE GROUP 15—59, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 16·34 %
SAMBALPUR 22·35 %
MAYURBHANJ 30·71 %
KEONJHAR 18·06 %
DHENKANAL 19·73 %
BALASORE 18·87 %
BOLANGIR 22·62 %
BAUDH-KHONDMALS 16·58 %
CUTTACK 21·62 %
KALAHANDI 25·02 %
PURI 22·05 %
GANJAM 26·61 %
KORAPUT 23·76 %
Agricultural Labourers to Agricultural Workers
Below 18 %
18—22 %
22—26 %
26—30 %
Above 30 %
State Average 22·74 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 75

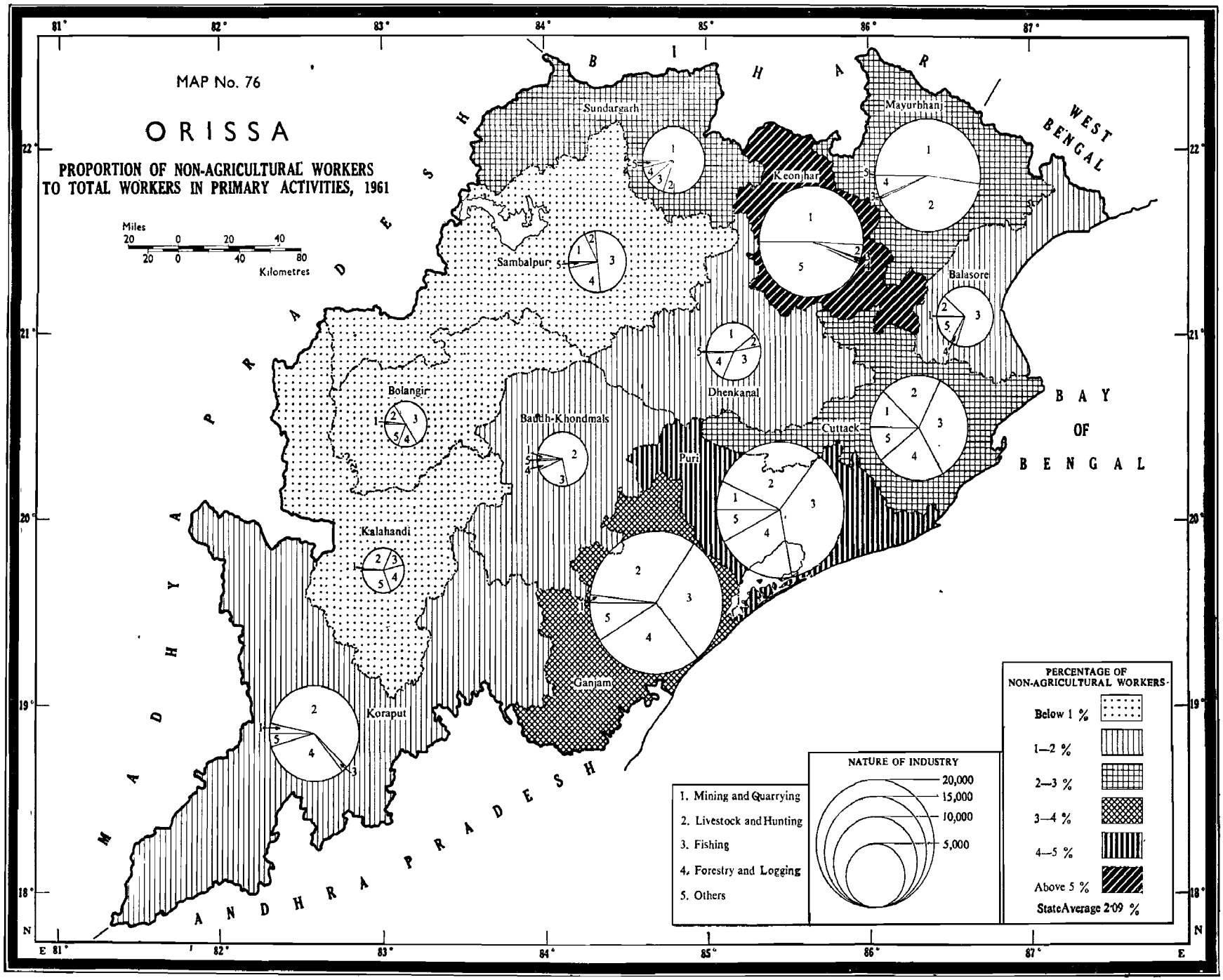
PERCENTAGE OF AGRICULTURAL LABOURERS TO TOTAL AGRICULTURAL WORKERS (CULTIVATORS AND AGRICULTURAL LABOURERS) IN AGE-GROUP 15—59, 1961.

The map displays the proportion of landless agricultural labourers to the total agricultural workers in the age-group 15—59. The proportion has been calculated in percentage for each district for the year 1961. This has been grouped into five ranges, above and below the State average (22·74%), viz., below 18, 18 to 22, 22 to 26, 26 to 30 and above 30 per cent. The districts are hatched in appropriate black shades by choropleth method.

There are 4,818,397 agricultural workers in the State out of which 1,095,748 persons (22·74%) are agricultural labourers or landless cultivators in the working age-group 15—59. This proportion is not high as compared with other States. Sundargarh district has the lowest percentage of landless cultivators, viz., 16·34 only. The district following Sundargarh is Baudh-Khondmals having 16·58 per cent of landless cultivators. On the other hand, Mayurbhanj district has the highest percentage of such workers with 30·71 per cent. Four out of the thirteen districts in Orissa, viz., Kalahandi, Koraput, Ganjam and Mayurbhanj have a higher percentage of landless cultivators than the State average of 22·74 per cent.

The following statement gives the district-wise percentage figures of agricultural labourers during 1961 :

District	Percentage
Mayurbhanj	30·71
Ganjam	26·61
Kalahandi	25·02
Koraput	23·76
State Average	22·74
Bolangir	22·62
Sambalpur	22·35
Puri	22·05
Cuttack	21·62
Dhenkanal	19·73
Balasore	18·87
Keonjhar	18·06
Baudh-Khondmals	16·58
Sundargarh	16·34


MAP No. 76
ORISSA
PROPORTION OF NON-AGRICULTURAL WORKERS TO TOTAL WORKERS IN PRIMARY ACTIVITIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Sundargarh
Mayurbhanj
Keonjhar
Sambalpur
Balasore
Bolangir
Dhenkanal
Baudh-Khondmals
Cuttack
Puri
Kalahandi
Ganjam
Koraput
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E
NATURE OF INDUSTRY
20,000
15,000
10,000
5,000
1. Mining and Quarrying
2. Livestock and Hunting
3. Fishing
4. Forestry and Logging
5. Others
PERCENTAGE OF NON-AGRICULTURAL WORKERS
Below 1 %
1—2 %
2—3 %
3—4 %
4—5 %
Above 5 %
State Average 2·09 %

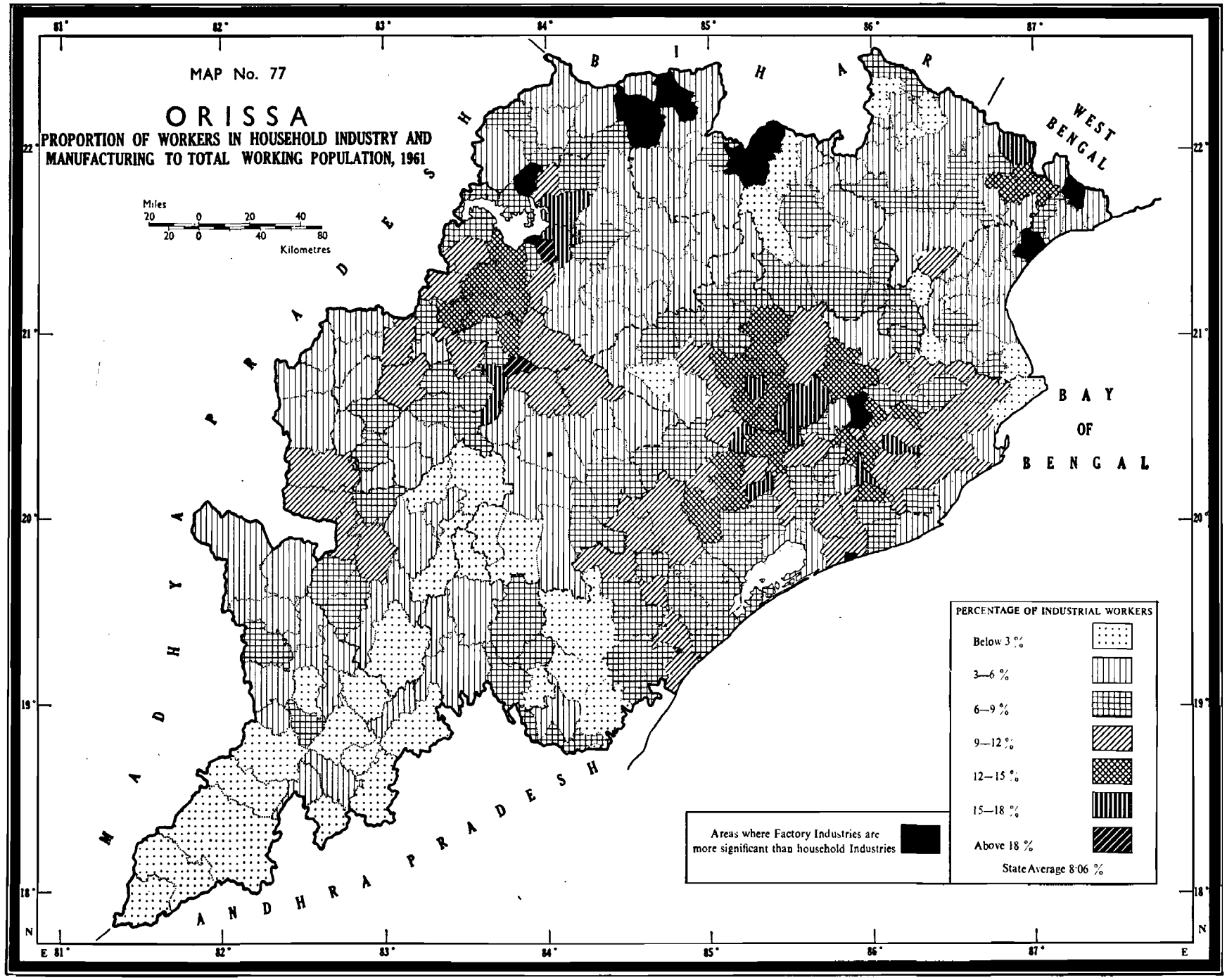
MAP No. 76

PROPORTION OF NON-AGRICULTURAL WORKERS TO TOTAL WORKERS IN PRIMARY ACTIVITIES, 1961

The map shows the proportion of non-agricultural primary workers to the total number of workers in primary activities in different districts of Orissa in 1961 as far as non-household industries are concerned. The non-agricultural primary workers belong to Category III of the working population, being engaged in mining, quarrying, livestock, forestry, fishing, hunting, plantations, orchards and allied activities. The workers in the primary activities belong to the Category I (cultivators), Category II (agricultural labourers) and Category III (mining, quarrying, livestock, etc.). The percentage ratio between non-agricultural primary workers and the total workers under primary activities in each district is calculated. These percentages are grouped into suitable ranges, viz., below 1 per cent, 1 to 2 per cent, 2 to 3 per cent, 3 to 4 per cent, 4 to 5 per cent and above 5 per cent, the State average being 2·28 per cent. Thereafter circles are drawn on pie-method within the districts proportionate to the number of non-agricultural primary workers within the districts. The circles are divided into five sectors corresponding to the number of workers under (i) mining and quarrying, (ii) livestock and hunting, (iii) fishing, (iv) forestry and logging, and (v) others, including plantations, orchards and allied activities. After the circles are drawn, each district is hatched outside the circle according to the ranges indicating percentage ratios between non-agricultural workers and total workers under primary activities as mentioned above.

The following statement gives the absolute figures relating to the number of workers in primary activities and the number of workers in non-agricultural primary activities in each district of the State together with the percentage between the two figures:

State/ District	No. of workers in Primary Activities	No. of workers in Non-agricultural Non-household Primary Activities	Percentage
ORISSA	5,788,519	131,996	2·28
Kalahandi	369,082	2,453	0·66
Koraput	651,319	11,237	1·73
Sambalpur	583,788	4,796	0·82
Bolangir	404,390	2,483	0·61
Baudh-Khondmals	228,657	3,662	1·60
Ganjam	652,125	25,368	3·89
Sundargarh	264,726	5,581	2·11
Dhenkanal	315,549	4,220	1·34
Puri	466,802	22,745	4·87
Keonjhar	286,741	15,440	5·38
Cuttack	663,054	13,644	2·06
Mayurbhanj	536,779	15,820	2·95
Balasore	365,507	4,547	1·24


MAP No. 77
ORISSA
PROPORTION OF WORKERS IN HOUSEHOLD INDUSTRY AND MANUFACTURING TO TOTAL WORKING POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
PERCENTAGE OF INDUSTRIAL WORKERS
Below 3 %
3—6 %
6—9 %
9—12 %
12—15 %
15—18 %
Above 18 %
State Average 8·06 %
Areas where Factory Industries are more significant than household Industries

MAP No. 77

PROPORTION OF WORKERS IN HOUSEHOLD INDUSTRY AND MANUFACTURING TO TOTAL WORKING POPULATION, 1961

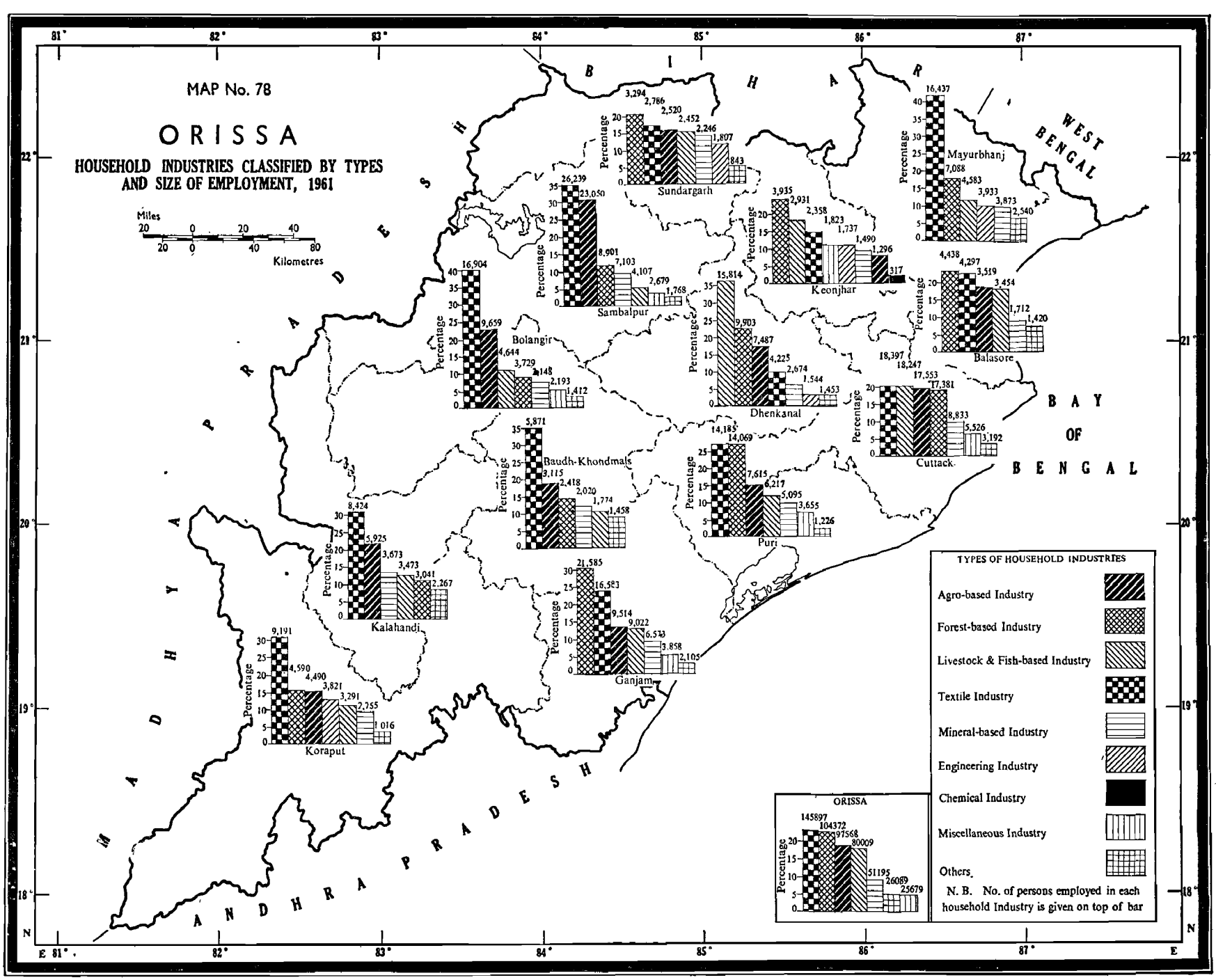
The map represents the proportion of workers engaged in household industry and manufacturing other than household industry to the total working population in 1961. The percentage ratio has been worked out for each police station in the State and grouped into seven ranges above and below the State average (8·06%), viz., below 3, 3 to 6, 6 to 9, 9 to 12, 12 to 15, 15 to 18 and above 18 per cent. Hatching in black shades is done by choropleth method. Thereafter the percentage ratio of workers in manufacturing is compared with that of household industry. If the percentage of the former exceeds that of the latter in any police station, the area is shaded in red, which indicates that the percentage of factory workers is greater than that of the household industry workers.

There are 7,661,529 persons in the State under the category of working population during 1961, while the number of workers engaged in the industries concerned is 617,006, the percentage being 8·06. The police station having the lowest percentage of industrial workers is Venkatapalam (0·35) whereas Chowdwar police station has the highest percentage of workers (38·15) in the State. There are twelve police stations having a higher percentage of workers engaged in factory industries than in household industries, viz., Hirakud, Brajarajnagar, Rourkela, Rajgangpur, Birmitrapur, Koira, Chowdwar, Cuttack city, Balasore, Jaleswar, Barbil and Puri town.

MAP No. 78

ORISSA

HOUSEHOLD INDUSTRIES CLASSIFIED BY TYPES AND SIZE OF EMPLOYMENT, 1961



MAP No. 78

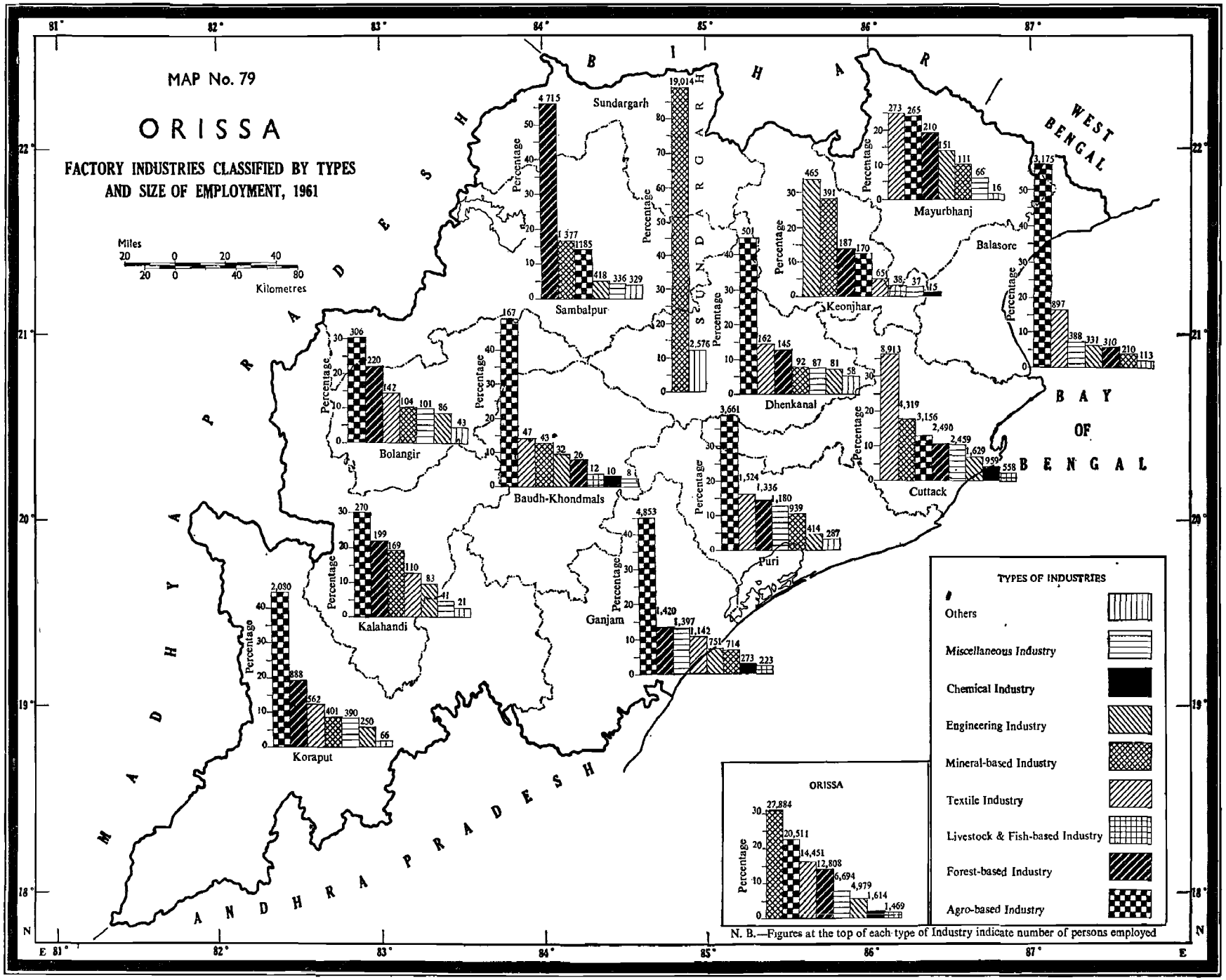
HOUSEHOLD INDUSTRIES CLASSIFIED BY TYPES AND SIZE OF EMPLOYMENT, 1961

The map shows the employment structure under different types of household industries in the districts of Orissa in 1961. The activities under household industry have been classified into eight groups, viz., (i) agro-based, (ii) forest-based, (iii) livestock and fish-based, (iv) textile, (v) mineral-based, (vi) engineering, (vii) chemical-based, and (viii) miscellaneous. The percentage of workers engaged in the above activities is calculated for each group districtwise, the total workers being taken as 100. Histograms are drawn in each district to show the structure of each of these groups of activities. But if any particular group in a district is insignificant in extent, such a group is shown under 'Others' instead of being shown as an independent unit in the map. In the right-hand corner, another histogram is drawn to show the types and structure employment in household industries of the State as a whole. The bars are arranged from high to low sizes corresponding to their percentage share in each district respectively.

It is noteworthy that in almost all the districts, textile industry occupies an important position as the largest number of workers are engaged in it. In eight districts textile industry enjoys the first place, the leading districts being Sambalpur, Cuttack, Bolangir, Ganjam, Mayurbhanj, Koraput, Kalahandi and Baudh-Khondmals. The next in importance is forest-based industry.

The list below gives the number of workers engaged in different types of household industries in Orissa :

Textile industry	...	145,897
Forest-based industry	...	104,372
Agro-based industry	...	97,568
Livestock and fish-based industry ...	...	80,009
Mineral-based industry	...	51,195
Others ...	...	26,089
Miscellaneous	...	25,679


MAP No. 79
ORISSA
FACTORY INDUSTRIES CLASSIFIED BY TYPES AND SIZE OF EMPLOYMENT, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
Sundargarh
Sambalpur
Bolangir
Baudh-Khondmals
Kalahandi
Koraput
Ganjam
Puri
Dhenkanal
Keonjhar
Mayurbhanj
Balasore
Cuttack
BIHAR
WEST BENGAL
ORISSA
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
TYPES OF INDUSTRIES
Others
Miscellaneous Industry
Chemical Industry
Engineering Industry
Mineral-based Industry
Textile Industry
Livestock & Fish-based Industry
Forest-based Industry
Agro-based Industry
Percentage
N. B.—Figures at the top of each type of Industry indicate number of persons employed

MAP No. 79

FACTORY INDUSTRIES CLASSIFIED BY TYPES AND SIZES OF EMPLOYMENT, 1961.

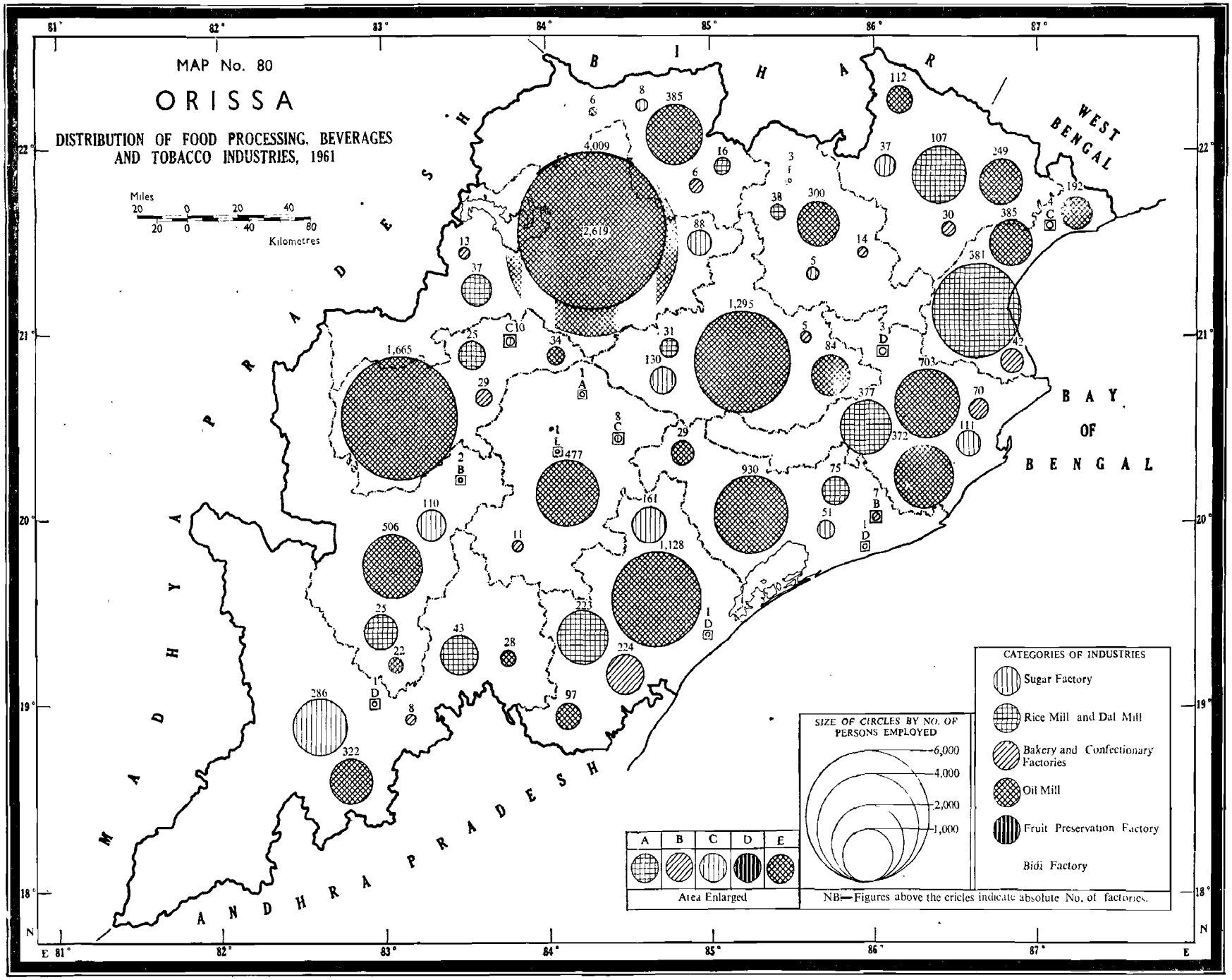
The map depicts the types and sizes of employment in factory industry in the districts of Orissa in 1961. Factory industry comprises workers of Category V (manufacturing other than household industry) together with the workers belonging to plantation crops, which constitutes major group 01 of Category III of the Census Economic Classification Scheme. There are eight groups of activities under the head "Factory Industry," viz., (i) agro-based, (ii) forest-based, (iii) livestock and fish-based, (iv) textile, (v) mineral-based, (vi) engineering, (vii) chemical and (vii) miscellaneous. An additional group, namely, 'Others' is formed so as to cover those groups of activities which are insignificant in extent.

The principle of drawing this map is similar to that of the previous one. Histograms are drawn in each district to show the employment structure. Each bar in the histograms represents the proportion of workers engaged in a particular group of activity. The bars are hatched in suitable shades and arranged according to their sizes from high to low corresponding to their respective proportions. A histogram showing the types and sizes of employment in the factory industry of the State is inserted in the right-hand corner.

A study of the map will indicate that the maximum number of workers are employed in the mineral-based industry. In this industry Sundargarh district alone has 19,014 persons engaged out of the total number of 27,884 persons in the State. The next in importance is the agro-based industry which engages 20,511 workers in the State. Ganjam district has 4,853 workers engaged in it. The third important industry of the State is textile which engages 14,451 workers. Textile is the premier factory industry of Cuttack district which engages 8,913 persons. The chemical-based group is more massive in the factory industry, employing 1,614 workers than in the household industry which offers employment to 1,278 workers only. The lowest number of workers (1,469) is engaged in livestock and fish-based group of factory industry.

The following list gives the number of persons employed in different categories of factory industry in the State during 1961 :

Mineral-based industry	...	27,884
Agro-based industry	...	20,511
Forest-based industry	...	12,808
Textile industry	...	14,451
Miscellaneous industry	...	6,698
Engineering industry	...	4,979
Chemical-based industry	...	1,614
Livestock and fish-based industry	...	1,469


MAP No. 80
ORISSA
DISTRIBUTION OF FOOD PROCESSING, BEVERAGES AND TOBACCO INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E
4,009
2,619
1,665
1,295
930
1,128
506
477
385
322
286
CATEGORIES OF INDUSTRIES
Sugar Factory
Rice Mill and Dal Mill
Bakery and Confectionary Factories
Oil Mill
Fruit Preservation Factory
Bidi Factory
SIZE OF CIRCLES BY NO. OF PERSONS EMPLOYED
6,000
4,000
2,000
1,000
A B C D E
Area Enlarged
NB—Figures above the cricles indicate absolute No. of factories.

MAP No. 80

DISTRIBUTION OF FOOD PROCESSING, BEVERAGES AND TOBACCO INDUSTRIES, 1961

The food processing industries have a number of groups based on the particular items of food processed in the factory. The following factories or establishments are involved in various food processing and beverage industries:

(a) Rice Mill
(b) Dal Mill
(c) Oil Mill
(d) Bakery and Confectionery Factory
(e) Sugar Factory
(f) Fruit Preservation Factory
(g) Hydrogenated Oil Factory
(h) Dairy Establishments

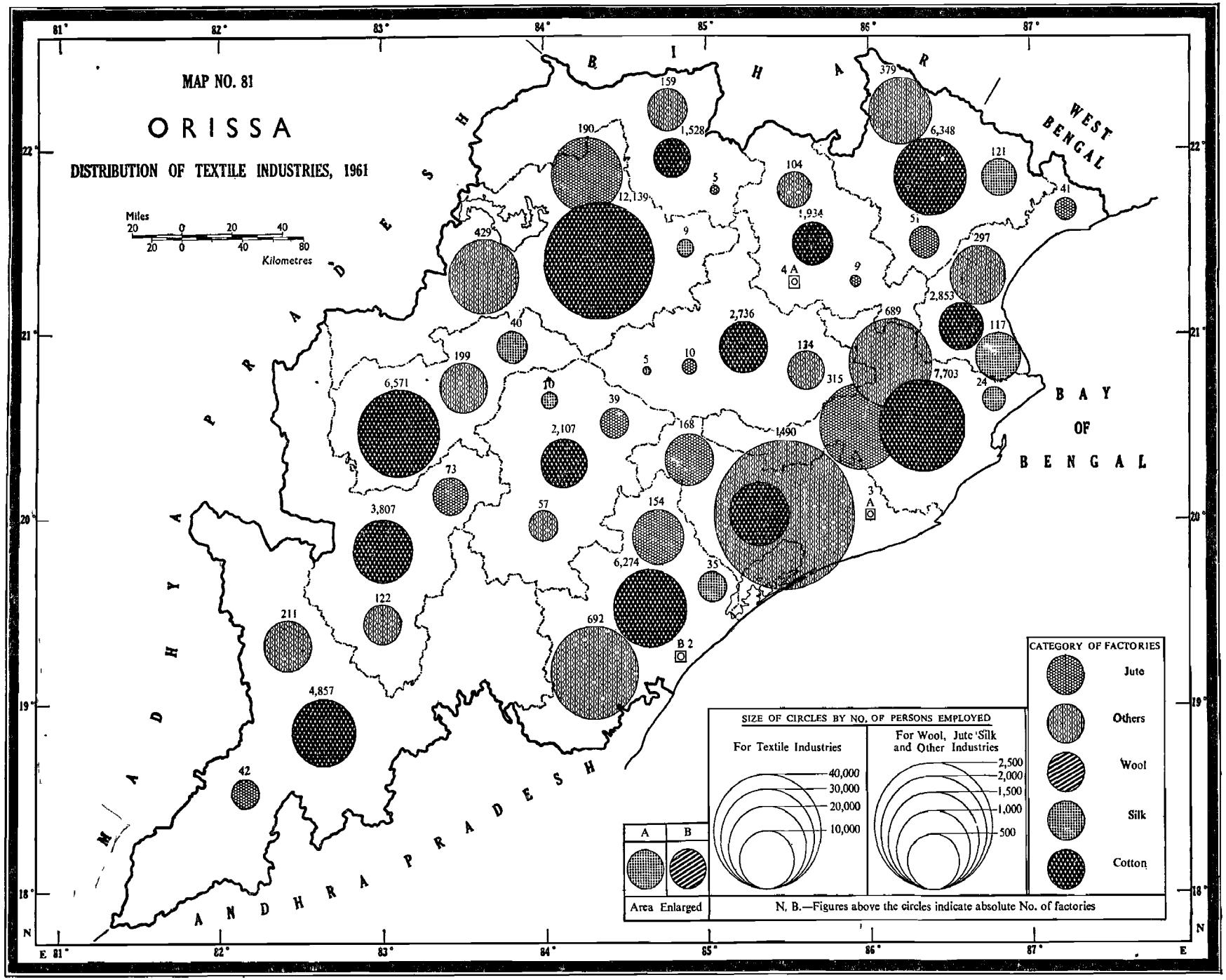
All these classes of factories are, however, not existent in Orissa. Those that are in existence have been plotted on the map, namely, Sugar factory, Rice mill and Dal mill, Bakery and Confectionery factory, Oil mill and Fruit preservation factory. As regards the Tobacco industries, there is only one category, namely, Bidi factory which is to be found extensively in Orissa. Other categories of the industry, such as, Coffee curing. Cigarette factory and Tea processing factory do not exist in Orissa.

The employment data of all the factories mentioned above were collected. Pie circles were drawn proportionate to the size of employment. These circles were then hatched according to the marks shown in the legend. On the head of each circle is indicated the absolute number of factories of each kind within a district.

Oil mills and Bidi factories give employment in all the districts. The volume of these industries in Sambalpur is the largest. Rice mills and Sugar factories are found in all the districts, but the principal ones are located in Koraput, Ganjam, Kalahandi, Mayurbhanj and Cuttack. Balasore has the highest number of employees in rice mills among the districts of Orissa. Bakery and Confectionery factories are found in all the districts, but considerable volume exists mainly in Ganjam, Cuttack and Balasore. Fruit preservation industry has limited scope.

The following statement gives the number of persons employed in different industries in the districts of Orissa:

District	No. of persons employed in					
	Sugar factory	Rice and Dal mills	Bakery and Confectionery factories	Oil mills	Fruit preservation factory	Bidi factory
Kalahandi	357	450	2	1,435	—	55
Koraput	1,106	549	31	714	4	60
Sambalpur	211	338	41	8,400	—	11,894
Bolangir	25	282	86	5,315	—	84
Baudh-Khondmals	13	4	39	1,521	—	1
Ganjam	452	1,015	558	3,073	4	207
Sundargarh	49	88	64	1,238	—	23
Dhenkanal	255	119	34	3,625	—	584
Puri	112	326	18	2,082	4	169
Keonjhar	51	75	30	676	—	3
Cuttack	207	987	131	1,625	11	1,316
Mayurbhanj	156	1,105	66	718	—	215
Balasore	12	3,030	178	725	—	361


MAP NO. 81
ORISSA
DISTRIBUTION OF TEXTILE INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
159
1,528
379
6,348
121
190
104
41
12,139
5
1,934
51
429
9
297
4A
9
2,853
40
2,736
689
117
199
5
10
134
315
7,703
24
6,571
10
39
2,107
168
1490
73
3
A
3,807
57
154
6,274
35
122
211
692
B 2
4,857
42
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E
CATEGORY OF FACTORIES
Jute
Others
Wool
Silk
Cotton
SIZE OF CIRCLES BY NO. OF PERSONS EMPLOYED
For Textile Industries
40,000
30,000
20,000
10,000
For Wool, Jute Silk and Other Industries
2,500
2,000
1,500
1,000
500
A
B
Area Enlarged
N. B.—Figures above the circles indicate absolute No. of factories

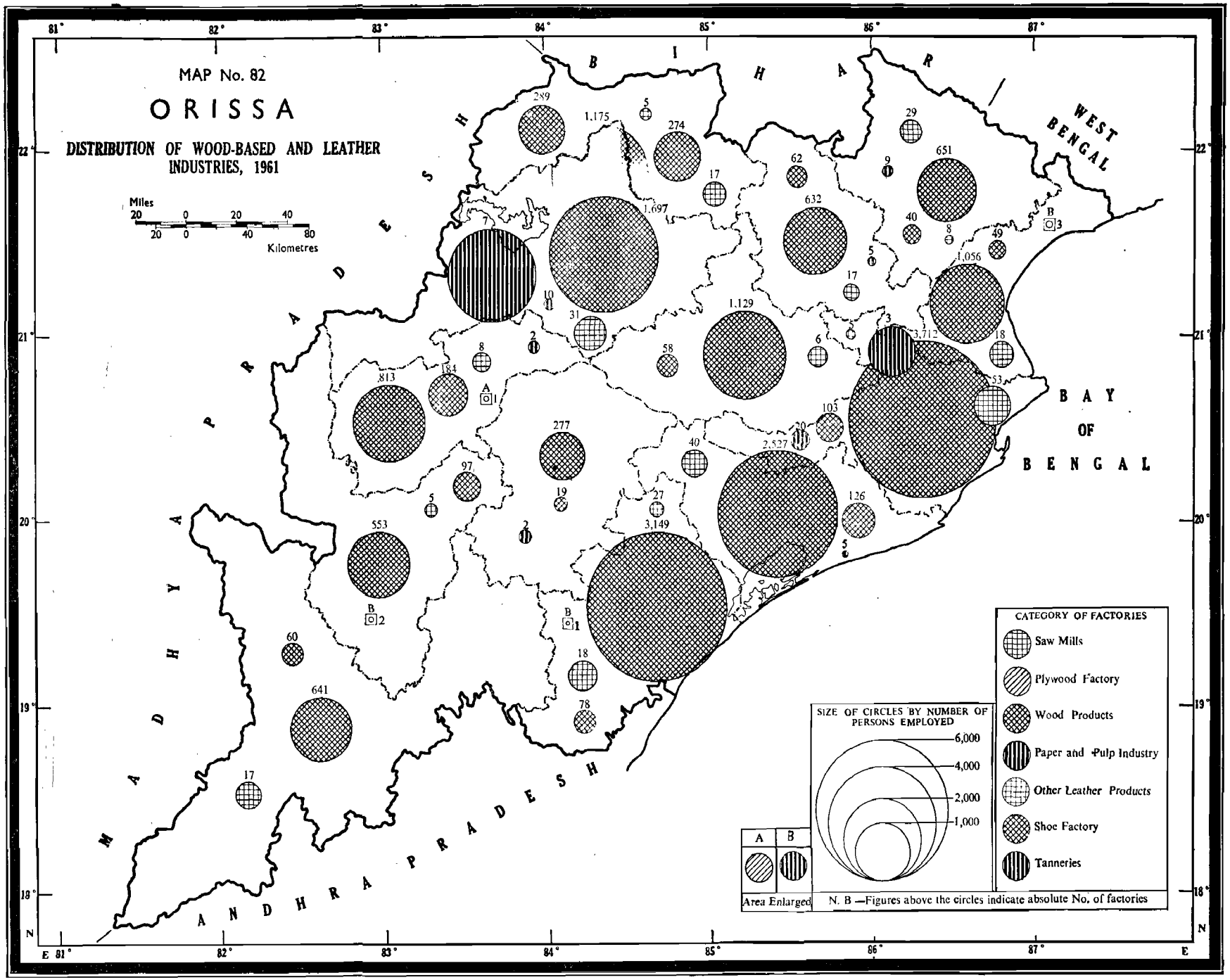
MAP No. 81

DISTRIBUTION OF TEXTILE INDUSTRIES, 1961

The distribution of different textile industries in all the districts of Orissa is indicated in the map. There are four important groups under the textile industry based on the material used, viz., Cotton, Silk, Wool and Jute. Another group having industries relating to coir and hosiery, etc. is classified as 'Others'. Pie-graphs are drawn in all the districts proportionate to the size of employment in each category of textile industry. The circles are marked with suitable shades. Scale of pie-graphs for silk and wool industries in Ganjam, Puri and Keonjhar has been enlarged for convenience of study.

Textile industry is found in all the districts of Orissa. Special mention may be made of cotton textile which absorbs quite a large number of workers (194,934). Sambalpur district alone has 41,940 persons engaged in cotton textile. The next important industry is under the heading 'Others', which includes carpet and coir products. The number of persons in Orissa engaged in this industry is 10,220. Jute industry employs 3,673 persons while silk has 1,023 persons. Orissa has little of wool industry, for there are only 2 establishments in the district of Ganjam. The statement below gives the number of persons employed in different textile industries in the districts of Orissa :

State/District	No. of persons employed in				
	Cotton	Jute	Wool	Silk	Others
ORISSA	194,934	3,673	7	1,023	10,220
Kalahandi	11,840	210	—	—	254
Koraput	13,453	123	—	—	404
Sambalpur	41,940	892	—	40	904
Bolangir	22,812	—	—	145	402
Baudh-Khondmals	7,056	142	—	40	144
Ganjam	18,102	441	7	137	1,378
Sundargarh	4,597	13	—	—	263
Dhenkanal	7,773	35	—	8	229
Puri	12,181	420	—	3	3,516
Keonjhar	5,437	17	—	4	217
Cuttack	25,400	1,147	—	83	1,238
Mayurbhanj	17,787	154	—	213	710
Balasore	6,556	79	—	350	561


MAP No. 82
ORISSA
DISTRIBUTION OF WOOD-BASED AND LEATHER INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
289
1,175
5
274
17
62
29
9
651
1,697
632
40
8
49
B 3
1,056
17
5
10
31
1,129
3
3,712
18
6
58
8
2
813
184
A 1
53
103
277
40
2,527
97
19
27
126
5
3,149
553
B 2
B 1
60
18
641
78
17
CATEGORY OF FACTORIES
Saw Mills
Plywood Factory
Wood Products
Paper and Pulp Industry
Other Leather Products
Shoe Factory
Tanneries
SIZE OF CIRCLES BY NUMBER OF PERSONS EMPLOYED
6,000
4,000
2,000
1,000
A
B
Area Enlarged
N. B —Figures above the circles indicate absolute No. of factories
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 82

DISTRIBUTION OF WOOD-BASED AND LEATHER INDUSTRIES, 1961

The map shows the distribution of wood-based and leather industries in Orissa: These groups of industries have several subdivisions, such as—

(i) **Wood-based Industry :**
- (a) Saw mills
- (b) Ply-wood factory
- (c) Wood products
- (d) Paper and pulp industry

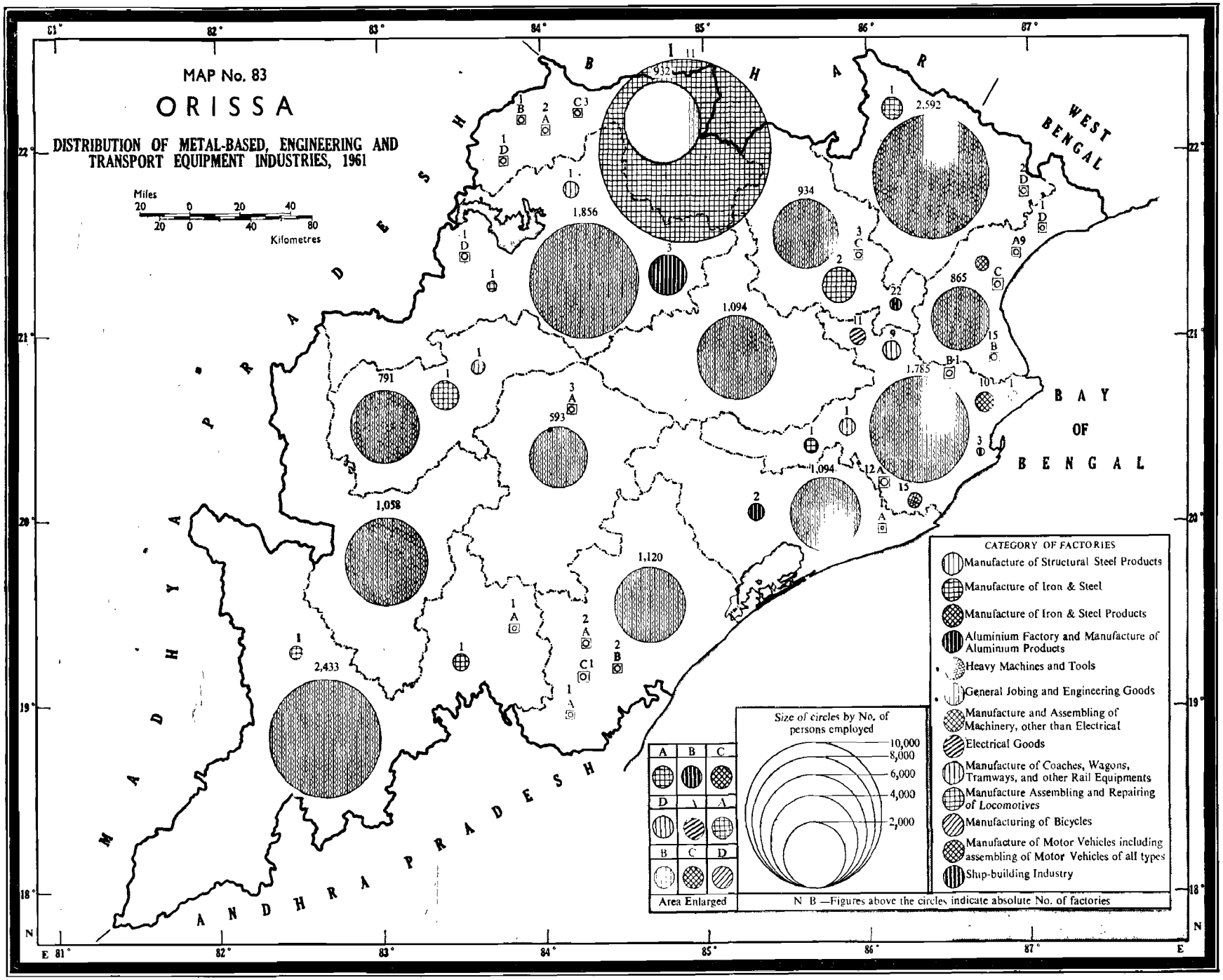
(ii) **Leather Industry :**
- (a) Tanneries
- (b) Shoe factories
- (c) Other leather products

Pie-graphs are drawn according to the size of employment of workers engaged in each category of industry. Different colours are used to represent the two separate types of industry. Circles are shaded with respective colours to distinguish the categories of industry. Scales of circles have been enlarged and shown in the right-hand corner, as they are small in size in some districts.

A glance at the map reveals that more people are engaged in wood-based industry than in leather industry. About 40,795 persons are employed in the former, while only 6,473 are absorbed by the latter. The section wood products offers the highest number of employments, namely, to 35,226 persons. On the contrary, ply-wood factory employs only 4. But paper and pulp has 3,310 workers and saw mills 2,255 persons. In the leather industry, out of 6,473 persons, 6,003 are engaged in shoe factories, and only 316 in tanneries.

The following statement gives the district-wise number of workers engaged in different categories of wood and leather industries during 1961 :

State/District	Workers engaged in						
	(i) Wood-based Industry				(ii) Leather Industry		
	Saw mills	Wood products	Ply-wood factory	Paper and pulp	Tanneries	Shoe factory	Other leather products
ORISSA	2,255	35,226	4	3,310	316	6,003	154
Kalahandi	45	1,284	—	—	5	240	—
Koraput	201	1,240	—	—	—	143	—
Sambalpur	336	4,016	—	2,575	35	3,188	—
Balongir	105	1,801	4	—	39	505	—
Baudh-Khondmals	—	650	—	—	50	59	—
Ganjam	256	6,711	—	—	1	148	65
Sundargarh	165	676	—	—	—	686	42
Dhenkanal	117	2,321	—	—	—	140	—
Puri	202	4,835	—	—	15	338	—
Keonjhar	67	1,347	—	—	17	132	—
Cuttack	433	7,274	—	735	112	225	26
Mayurbhanj	148	1,183	—	—	32	102	21
Balasore	180	1,888	—	—	10	97	—


MAP No. 83
ORISSA
DISTRIBUTION OF METAL-BASED, ENGINEERING AND TRANSPORT EQUIPMENT INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
932
2,592
1,856
934
865
1,094
1,785
791
593
1,094
1,058
1,120
2,433
CATEGORY OF FACTORIES
Manufacture of Structural Steel Products
Manufacture of Iron & Steel
Manufacture of Iron & Steel Products
Aluminium Factory and Manufacture of Aluminium Products
Heavy Machines and Tools
General Jobing and Engineering Goods
Manufacture and Assembling of Machinery, other than Electrical
Electrical Goods
Manufacture of Coaches, Wagons, Tramways, and other Rail Equipments
Manufacture Assembling and Repairing of Locomotives
Manufacturing of Bicycles
Manufacture of Motor Vehicles including assembling of Motor Vehicles of all types
Ship-building Industry
Size of circles by No. of persons employed
10,000
8,000
6,000
4,000
2,000
A B C
D A
B C D
Area Enlarged
N B —Figures above the circles indicate absolute No. of factories

MAP No. 83

DISTRIBUTION OF METAL-BASED, ENGINEERING AND TRANSPORT EQUIPMENT INDUSTRIES, 1961

The distribution of Metal-based, Engineering and Transport equipment industries in Orissa in 1961 is shown under three major groups. There are several divisions of each group as given below :

(i) **Metal-based Industry**

(a) Manufacture of iron and steel including smelting, refining, rolling, conversion into basic forms

(b) Aluminium factory

(c) Copper smelting factory

(d) Manufacture of aluminium products

(e) Manufacture of iron and steel furniture

(f) Manufacture of structural steel products, such as, joist, rail, sheet, plate, etc.

(ii) **Engineering Industry**

(a) Heavy machines and tools

(b) Heavy electricals (Motors, generators, transmitters, etc.)

(c) Manufacture and assembling of machinery other than electrical

(d) Electrical goods

(e) General jobbing and engineering goods

(iii) **Transport Equipment Industry**

(a) Manufacture, assembling and repair of locomotives

(b) Manufacture of coaches, wagons, tramways, etc.

(c) Manufacture of motor vehicles and assembling also

(d) Manufacture of bicycles

(e) Ship-building (ship, steamers, boats, etc.) and repairing

(f) Aircraft industry

Three colours have been used to represent the 3 types of industries. Circles have been drawn on pie-graph method to depict the proportion of employment or the size of employment of workers engaged in the industries. Some of the circles, being very small, have been enlarged in the right-hand corner. Again, there are several categories of industry which are not found in Orissa. So they are not shown.

From the map it is clear that more people are engaged in engineering industry than in any other. In this group, general jobbing and engineering goods absorbs about 99 per cent or 48,356 persons out of a total of 48,643 employed in engineering industry. Similarly, manufacturing of iron and steel group under the metal-based industry occupies a prominent position and employs about 94 per cent of workers or 16,408 persons out of a total of 17,503 in the above industry. Sundargarh district alone has 15,665 workers in iron and steel industry out of 16,408 in Orissa. But the 3rd group showing distribution of transport equipment industry presents a poor picture as only 1,290 persons are employed in the whole of Orissa. Of this, 715 are employed in the repairing of locomotives.

The statement below gives the number of workers engaged in different categories of industry under metal-based, engineering and transport equipment industries in each of the districts during 1961 :

(1) METAL-BASED INDUSTRY

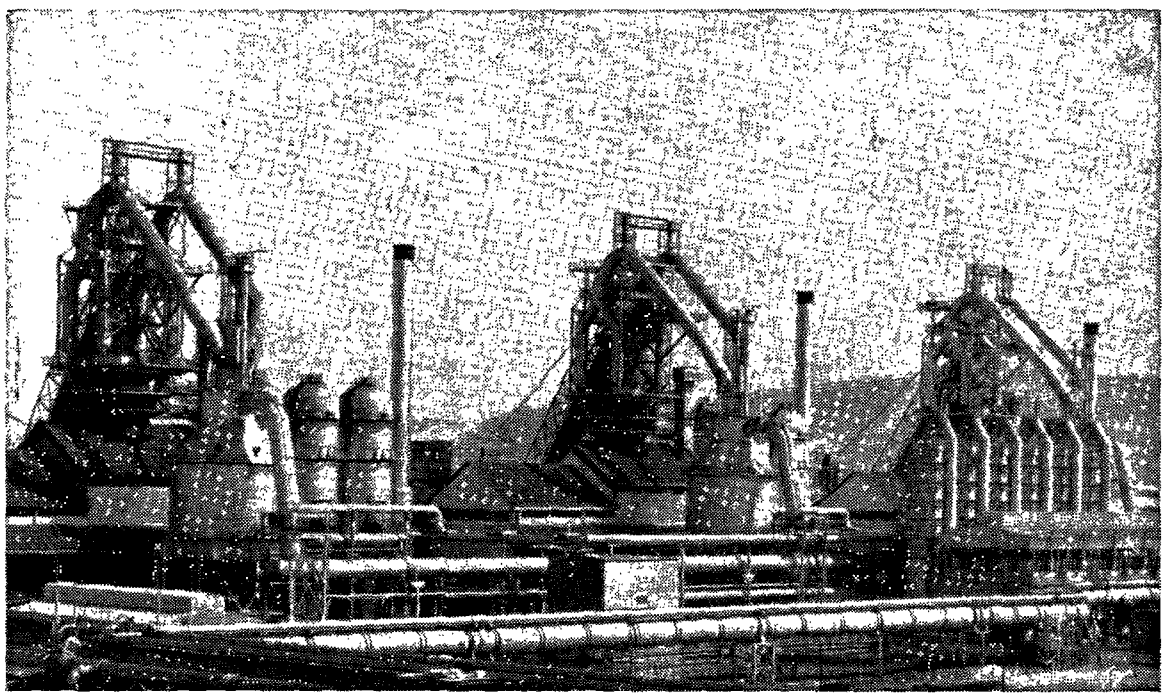
District	Number of workers employed in				
	Iron and steel	Aluminium products & factory	Copper	Iron & steel products	Structural steel products
Kalahandi	—	—	—	—	—
Koraput	121	—	—	—	—
Sambalpur	—	726	—	—	—
Bolangir	—	—	—	—	—
Baudh-Khondmals	11	—	—	—	—
Ganjam	—	12	—	—	—
Sundargarh	15,665	8	—	11	8
Dhenkanal	—	—	—	—	—
Puri	—	110	—	—	—
Keonjhar	536	60	—	—	—
Cuttack	75	15	—	—	141
Mayurbhanj	—	—	—	—	—
Balasore	—	—	—	—	4
Orissa	16,408	931	—	11	153
				Total	17,503

(2) ENGINEERING INDUSTRY

District	Heavy machines and tools	Heavy electrical equipments	Non-electrical goods	Electrical goods	General jobbing
Kalahandi	—	—	—	—	3,542
Koraput	—	—	—	4	6,529
Sambalpur	—	—	—	—	6,179
Bolangir	—	—	—	—	2,480
Baudh-Khondmals	—	—	—	—	1,679
Ganjam	—	—	—	4	2,589
Sundargarh	—	—	—	—	3,057
Dhenkanal	—	—	—	—	3,271
Puri	—	—	—	1	2,513
Keonjhar	—	—	—	—	2,238
Cuttack	93	—	—	110	5,315
Mayurbhanj	—	—	—	—	7,162
Balasore	—	—	75	—	1,802
Orissa	93	—	75	119	48,356
				Total	48,643

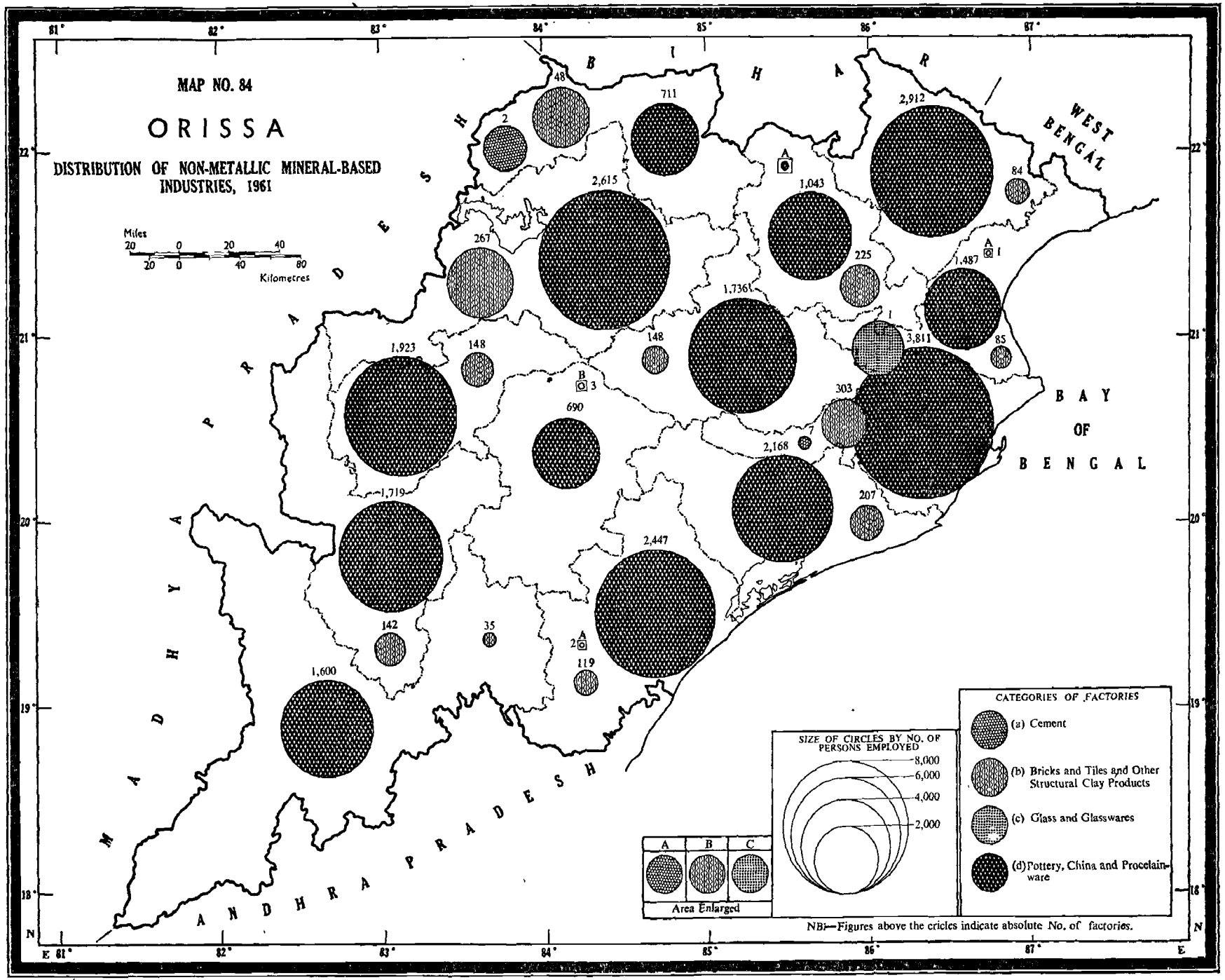
(3) TRANSPORT EQUIPMENT INDUSTRY

District	Repairing, etc. of locomotives	Manufacture of coaches, wagons	Manufacture of motor vehicles including assembling of motor vehicles of all kinds	Bicycle manufacturing	Ship-building, etc.	Aircraft
Kalahandi	—	—	—	—	—	—
Koraput	75	—	—	—	—	—
Sambalpur	35	102	—	15	—	—
Bolangir	365	75	—	—	—	—
Baudh-Khondmals	—	—	—	—	—	—
Ganjam	7	—	8	—	—	—
Sundargarh	7	—	—	—	—	—
Dhenkanal	—	—	—	—	—	—
Puri	—	—	—	—	—	—
Keonjhar	—	—	8	—	—	—
Cuttack	17	114	161	35	20	—
Mayurbhanj	200	—	—	7	—	—
Balasore	9	15	15	—	—	—
Orissa	715	306	192	57	20	—
					Total	1,290



ROURKELA STEEL PLANT

Blast Furnaces, each with rated capacity of 1,000 tonnes of pig iron per day


MAP NO. 84
ORISSA
DISTRIBUTION OF NON-METALLIC MINERAL-BASED INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
48
2
711
2,912
84
2,615
1,043
267
225
1,487
1
1,736
1
3,811
85
148
148
1,923
3
690
303
7
2,168
1,719
207
2,447
142
35
2
119
1,600
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E
A
B
C
Area Enlarged
SIZE OF CIRCLES BY NO. OF PERSONS EMPLOYED
8,000
6,000
4,000
2,000
CATEGORIES OF FACTORIES
(a) Cement
(b) Bricks and Tiles and Other Structural Clay Products
(c) Glass and Glasswares
(d) Pottery, China and Procelain-ware
NB—Figures above the cricles indicate absolute No. of factories.

MAP No: 84

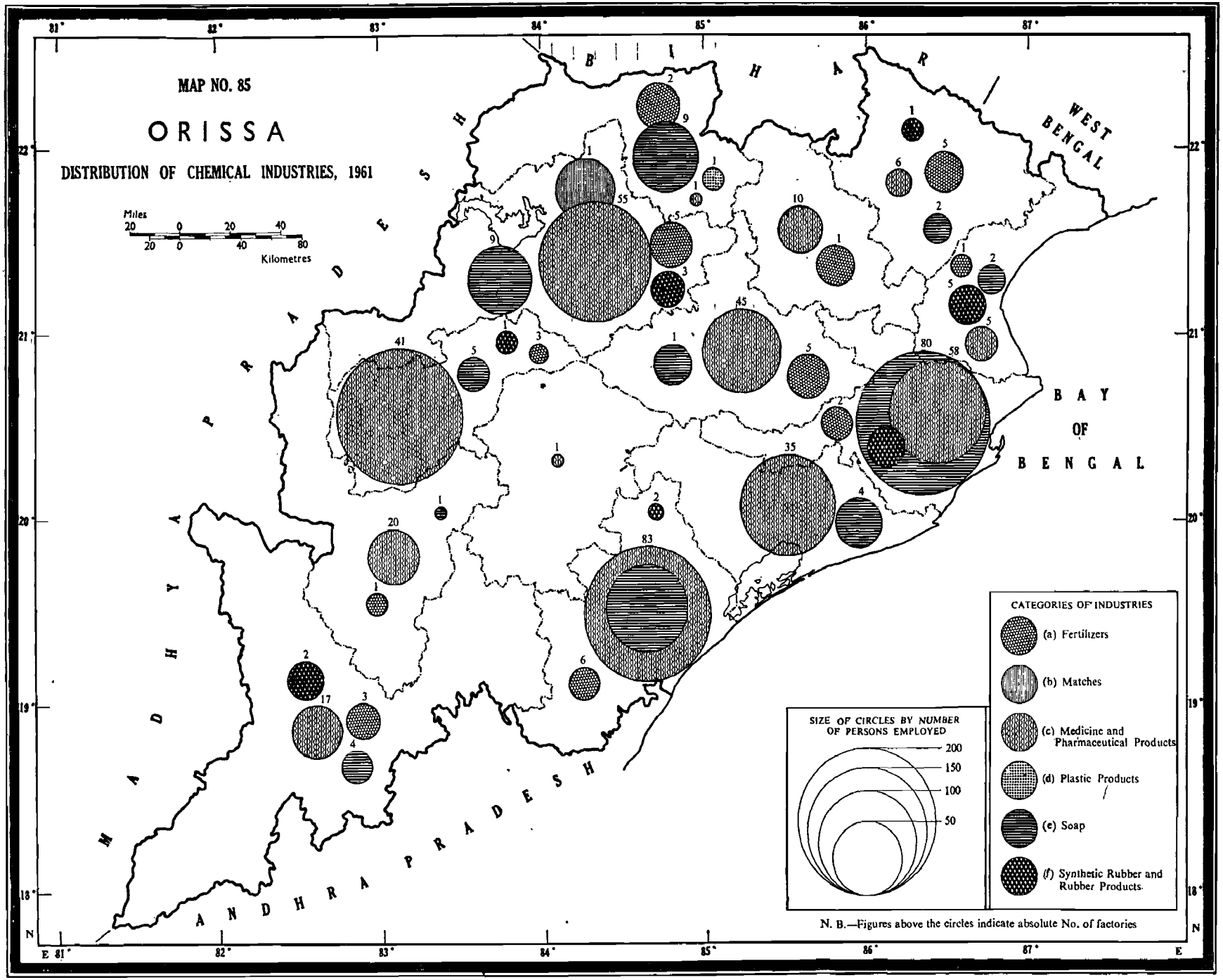
DISTRIBUTION OF NON-METALLIC MINERAL-BASED INDUSTRIES, 1961

The map shows the distribution of non-metallic mineral-based industries in the districts of Orissa during 1961. Industries like manufacture of cement, bricks, tiles and structural clay products, making of pottery, china and porcelain ware and glass and glasswares are included in this group of industry. Pie-graphs are drawn in each district representing the proportion of persons employed in all the sub-groups of industries. The size of some of the circles in Ganjam, Balasore, Mayurbhanj, Baudh-Khondmals and Keonjhar showing industries like cement, glassware and bricks have been enlarged. Circles are shaded suitably to distinguish industries from each other.

Pottery takes a very important place among the non-metallic mineral-based industries in Orissa. It is the poor man's industry dispersed extensively. As the raw material (mud) is free, a large number of people (70,814) have taken to this profession. Brick industry takes the second place having employed 7,909 persons. Cement industry in strict sense is found in Sundargarh district, while glass and glasswares industry exists in Cuttack district only. Other districts have a negligible proportion of employees engaged in the above industries.

The following statement gives the number of persons employed in these branches of industry in the districts of Orissa during 1961 :

State/ District	Persons employed in the industries of			
	Cement	Bricks	Pottery	Glass & Glass-wares
ORISSA	964	7,909	70,814	1,264
Kalahandi	—	426	5,420	—
Koraput	—	83	4,179	—
Sambalpur	—	2,135	8,677	—
Bolangir	—	468	6,335	—
Baudh-Khondmals	—	11	2,167	—
Ganjam	5	249	7,366	—
Sundargarh	880	1,526	2,258	—
Dhenkanal	—	312	5,857	—
Puri	—	516	5,104	—
Keonjhar	15	750	2,676	—
Cuttack	60	975	10,272	1,264
Mayurbhanj	—	262	7,615	—
Balasore	4	196	2,888	—


MAP NO. 85
ORISSA
DISTRIBUTION OF CHEMICAL INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E
CATEGORIES OF INDUSTRIES
(a) Fertilizers
(b) Matches
(c) Medicine and Pharmaceutical Products
(d) Plastic Products
(e) Soap
(f) Synthetic Rubber and Rubber Products.
SIZE OF CIRCLES BY NUMBER OF PERSONS EMPLOYED
200
150
100
50
N. B.—Figures above the circles indicate absolute No. of factories

MAP No. 85

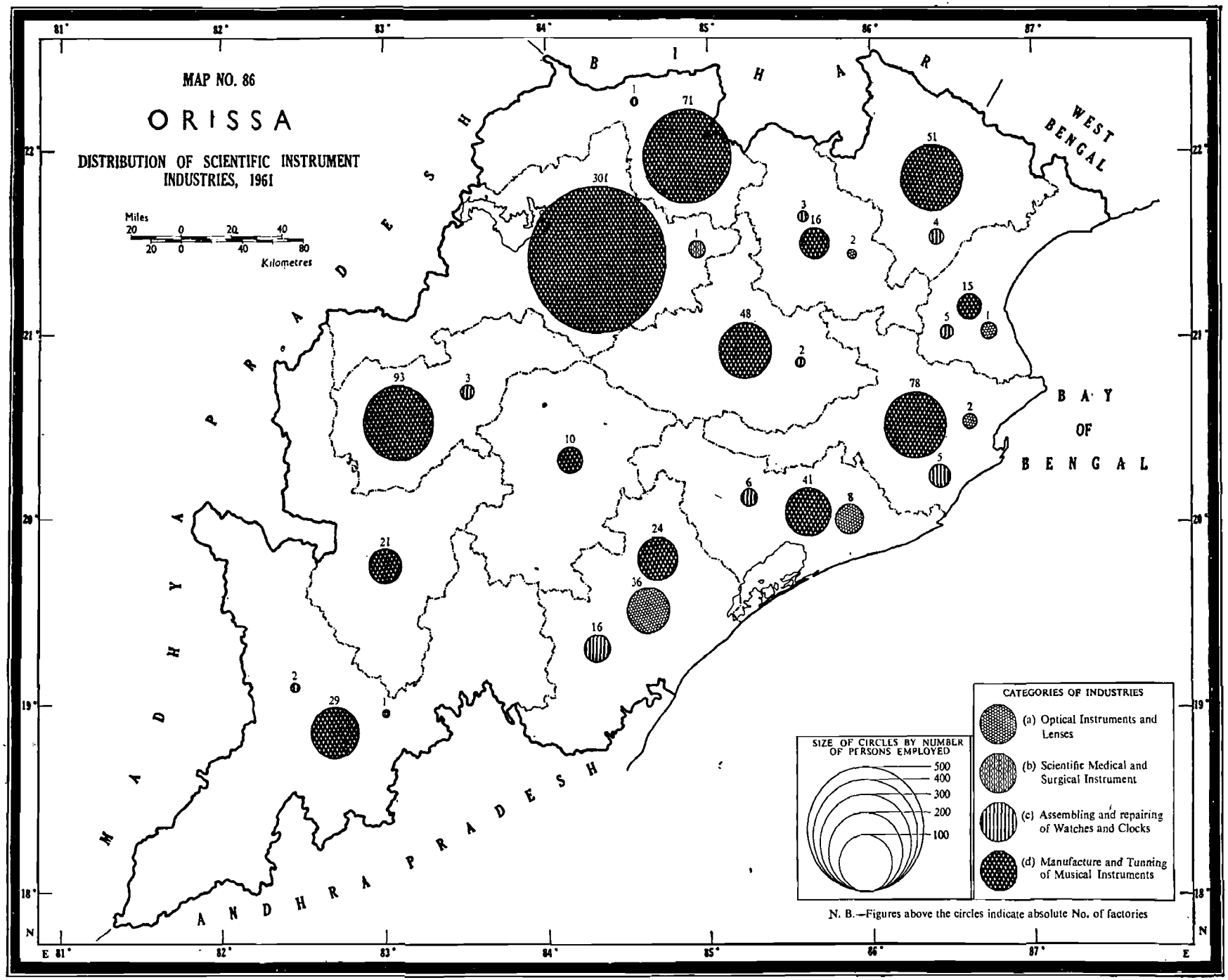
DISTRIBUTION OF CHEMICAL INDUSTRIES, 1961

The map displays the distribution of chemical industries in Orissa. Chemical industry includes the following, viz., (a) Basic industrial chemicals, such as, acids, alkalies and their salts, (b) Fertilizers, (c) Matches, (d) Medicine and pharmaceutical products, perfumes, cosmetics and other toilet products, (e) Soap, (f) Plastic products, (g) Synthetic rubber, (h) Petro-chemical and (i) Coal chemical industry. Pie-graphs have been drawn with the proportion of persons employed in each industry. Circles are shaded differently to distinguish the type of industries.

Out of the above nine categories Orissa does not have any (a) Basic chemical industry, (h) Petro-chemical and (i) Coal chemical industry. On the whole it appears that only a small number of people are engaged in chemical industry. Workers engaged in medicines, cosmetics and toilet industry (813) outnumber the employees in rest of the industries combined. Soap industry with 415 workers comes next. But the extent of employment in other industries is poor, viz., (b) Fertilizers—124, (c) Matches—35, (g) Synthetic rubber—61 and (f) Plastic products—only 4.

The following statement gives the number of workers engaged in different industries in districts during 1961 :

State/ District	Workers engaged in					
	Fertilizers	Matches	Medicine and pharmaceutical products	Soap	Plastic	Synthetic rubber
ORISSA	124	35	813	415	4	61
Kalahandi	4	—	28	1	—	—
Koraput	11	—	25	9	—	12
Sambalpur	18	35	130	40	—	11
Bolangir	3	—	168	10	—	4
Baudh-Khondmals	—	—	1	—	—	—
Ganjam	9	—	171	70	—	2
Sundargarh	19	—	1	44	4	—
Dhenkanal	17	—	65	15	—	—
Puri	—	—	92	21	—	—
Keonjhar	15	—	20	—	—	—
Cuttack	9	—	96	191	—	15
Mayurbhanj	15	—	6	7	—	4
Balasore	4	—	10	7	—	13


MAP NO. 86
ORISSA
DISTRIBUTION OF SCIENTIFIC INSTRUMENT INDUSTRIES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
1
71
301
51
3
16
1
2
4
15
5
1
48
2
93
3
78
2
10
5
6
41
8
24
21
36
16
2
29
1
CATEGORIES OF INDUSTRIES
(a) Optical Instruments and Lenses
(b) Scientific Medical and Surgical Instrument
(c) Assembling and repairing of Watches and Clocks
(d) Manufacture and Tunning of Musical Instruments
SIZE OF CIRCLES BY NUMBER OF PERSONS EMPLOYED
500
400
300
200
100
N. B.—Figures above the circles indicate absolute No. of factories

MAP No. 86

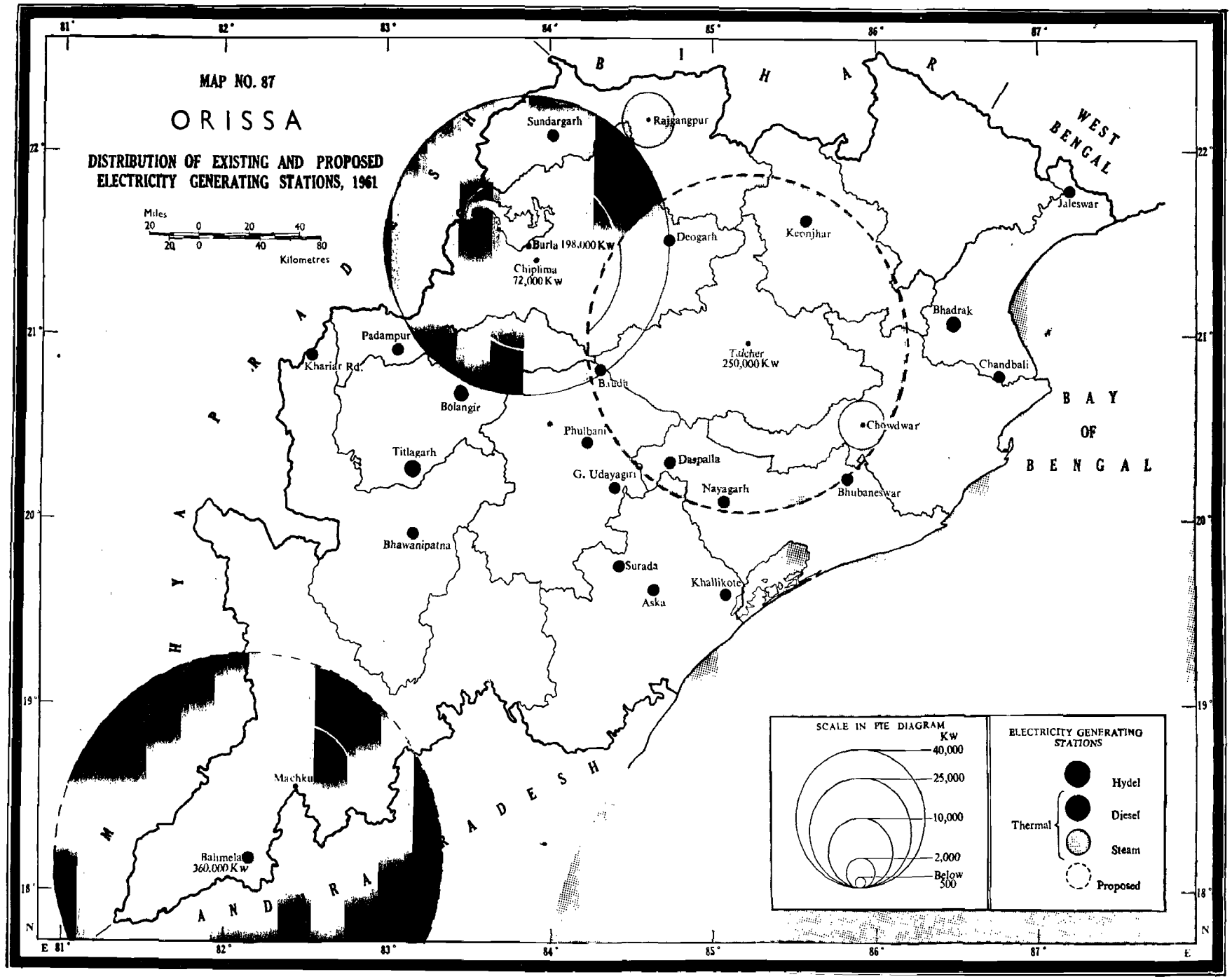
DISTRIBUTION OF SCIENTIFIC INSTRUMENT INDUSTRIES, 1961

Last among the series of industries map, this one represents the distribution of scientific instrument industries in Orissa. Industries considered important under the above heading are (a) Optical instruments and lenses, (b) Scientific, medical and surgical instruments, (c) Assembling and repairing of watches and clocks, and (d) Manufacture and tuning of musical instruments. Pie-graphs are drawn in each district for each of the industries, proportionate to the number of workers engaged in it. Circles are given different shades in black.

This is one of the smallest industries of Orissa engaging 2,089 persons. Over 90 per cent or 1,899 workers were employed in the industry of manufacturing and repairing musical instruments. The share of other industries is very small, viz., 108 persons in optical instruments and lenses, 8 persons in medical and surgical instrument industry, and 74 persons in assembling and repairing of watches and clocks. Sambalpur, with 717 workers employed in musical instrument industry, heads the list. Ganjam and Cuttack districts have some extent of business in assembling and repairing of watches, while Ganjam and Puri have figured well in the optical and lens industry.

The number of workers engaged in different industries in all districts is given below:

State/ District	Number of persons engaged in			
	Opticals and lenses	Medical and surgical instruments	Assembling and repairing of watches and clocks	Manufacture and tuning of musical instruments
ORISSA	108	8	74	1,899
Kalahandi	—	—	—	39
Koraput	1	—	2	83
Sambalpur	—	8	—	717
Bolangir	—	—	6	184
Baudh-Khondmals	—	—	—	22
Ganjam	64	—	24	59
Sundargarh	—	—	1	291
Dhenkanal	—	—	2	101
Puri	26	—	9	74
Keonjhar	2	—	3	29
Cuttack	7	—	15	141
Mayurbhanj	—	—	7	139
Balasore	8	—	5	20


MAP NO. 87
ORISSA
DISTRIBUTION OF EXISTING AND PROPOSED ELECTRICITY GENERATING STATIONS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Sundargarh
Rajgangpur
Jaleswar
Deogarh
Keonjhar
Burla 198,000 Kw
Chiplima 72,000 Kw
Bhadrak
Padampur
Kharian Rd.
Talcher 250,000 Kw
Chandbali
Bolangir
Phulbani
Chowdwar
Titlagarh
Daspalla
G. Udayagiri
Nayagarh
Bhubaneswar
Bhawanipatna
Surada
Khallikote
Aska
Machkund
Balimela 360,000 Kw
SCALE IN PIE DIAGRAM
KW
40,000
25,000
10,000
2,000
Below 500
ELECTRICITY GENERATING STATIONS
Hydel
Thermal
Diesel
Steam
Proposed
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 87

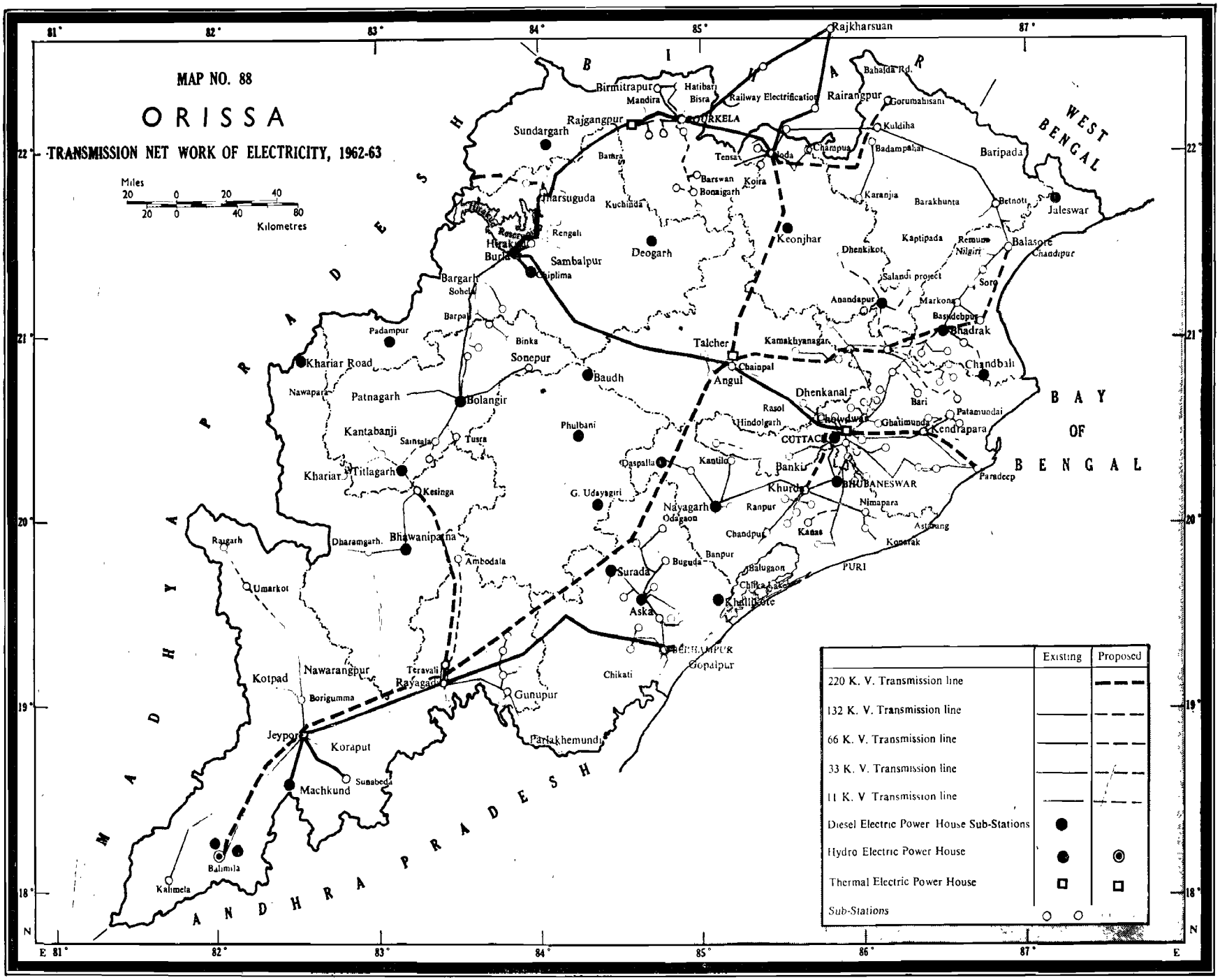
DISTRIBUTION OF EXISTING AND PROPOSED ELECTRICITY GENERATING STATIONS, 1961

The purpose of the map is to display the distribution of existing and proposed electricity generating stations in Orissa during 1961. The data regarding the generating capacity of proposed and existing power plants were collected and the square root of the respective figures worked out. Pie-graphs, proportionate to each square root were drawn in their respective positions. Power plants are thus shown by circles which are proportionate in size to the generating capacity of the stations. The circumference of the circles are drawn in continuous lines in case of existing stations and in pecked lines in case of stations under construction. Blue colour is used to indicate hydel plants, while red shows thermal power stations. Diesel plants are shown by black hatchings inside the circles.

Among the existing power stations Hirakud hydel system (Sambalpur district) generates 270 MW of electricity in total. Out of this, Burla power house has a share of 198 MW, while Chiplima produces 72 MW. The other hydel station, namely, Machkund (Koraput district) generates 129 MW, although Orissa gets only 34·4 MW, the rest being diverted to Andhra Pradesh according to the inter-State agreement. There are two existing thermal plants at Chowdwar (5,000 KW) and Rajgangpur (6,500 KW). Besides, there are 24 diesel power stations located in different parts of the State, namely, Bhawanipatna (230 KW) and Khariar Road (276 KW) in Kalahandi district, Balimela P.H. and Dam Colonies containing 3 separate plants (109·5 KW) in Koraput district, Deogarh (100 KW) and Padampur (75 KW) in Sambalpur district. Bolangir town (498 KW) and Titlagarh (619 KW) in Bolangir district, Phulbani (129 KW), G. Udayagiri (25 KW) and Baudh (25 KW) in Baudh-Khondmals district, Khallikote (490 KW), Aska (470 KW) and Surada (133 KW) in Ganjam district, Sundargarh town (112 KW) in Sundargarh district, Bhubaneswar (150 KW), Nayagarh (200 KW) and Daspalla (97 KW) in Puri district, Keonjhar town (175 KW) and Anandapur (102 KW) in Keonjhar district, Jaleswar (87 KW), Bhadrak (509 KW) and Chandbali (32 KW) in Balasore district. These small power stations cover mostly the urban localities of the State where supply of power from main transmission systems has not yet been extended.

There are two power plants now under construction which are enormously large in generating capacity. The Balimela project is a hydroelectric system with a capacity to generate 360 MW of electricity. It will be the largest generating station in the State. The next one is the Talcher thermal power station having a capacity of generating 250 MW. It will be the largest of its kind in India. It is expected to lower down the cost of generation by use of cheap fuel, namely, low grade coal and dust coal readily available from the Talcher coal mines.

Source—State Electricity Board, Orissa


MAP NO. 88
ORISSA
TRANSMISSION NET WORK OF ELECTRICITY, 1962-63
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Rajkharsuan
Birmitrapur
Hatibari
Mandira
Bisra
Railway Electrification
Rairangpur
Gorumahisani
Bahalda Rd.
ROURKELA
Rajgangpur
Sundargarh
Kuldiha
Champua
Badampahar
Baripada
Tensa
Joda
Barra
Barsuan
Bonaigarh
Koira
Karanjia
Barakhunta
Betnoti
Jaleswar
Kuchinda
Rengali
Keonjhar
Dhenkikot
Kaptipada
Remuna
Nilgiri
Balasore
Chandipur
Deogarh
Hirakud
Burla
Sambalpur
Jharsuguda
Salandi project
Sora
Bargarh
Sohela
Barpali
Anandapur
Markona
Basudebpur
Bhadrak
Padampur
Binka
Talcher
Kamakhyanagar
Kharian Road
Sonepur
Baudh
Chainpal
Angul
Chandbali
Nawapara
Patnagarh
Bolangir
Dhenkanal
Bari
Rasol
Patamundai
Hindolgarh
Chowdwar
Ghatimunda
Kendrapara
Kantabanji
Saintala
Tusra
Phulbani
CUTTACK
Daspalla
Kantilo
Banki
Kharian
Titlagarh
Kesinga
Khurda
BHUBANESWAR
Paradeep
G. Udayagiri
Nayagarh
Odagaon
Ranpur
Nimapara
Astaranga
Rajgarh
Dharamgarh
Bhawanipatna
Chandpur
Kanas
Konarak
Ambodala
Banpur
Buguda
Surada
Balugaon
PURI
Umarkot
Chilka Lake
Khallikote
Aska
BERHAMPUR
Gopalpur
Kotpad
Nawarangpur
Teravali
Rayagada
Chikati
Borigumma
Gunupur
Jeypore
Koraput
Parlakhemundi
Machkund
Sunabeda
Balimila
Kalimela
Existing
Proposed
220 K. V. Transmission line
132 K. V. Transmission line
66 K. V. Transmission line
33 K. V. Transmission line
11 K. V Transmission line
Diesel Electric Power House Sub-Stations
Hydro Electric Power House
Thermal Electric Power House
Sub-Stations
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 88

TRANSMISSION NET WORK OF ELECTRICITY, 1962-63

This map is drawn to show the transmission lines of the State Electric Grid. Five colours are utilized to distinguish the power lines of different killovolts as indicated in the legend. The existing transmission lines are shown in continuous lines, while the proposed ones are shown in pecked lines in their respective colours.

By the end of the Second Plan period there were two distinct power systems in the State originating from Hirakud and Machkund Hydroelectric generating stations. Their total output, supplemented by a comparatively small quantity of power from a number of diesel and thermal stations amounted to 205 MW, designed for distribution by a network of transmission lines.

As a result of rapid industrialization resulting in tremendous increase in demand for power towards the later half of the Second Plan and the first half of the Third Plan, two more projects of generation were taken up, namely, the Talcher Thermal Project (250 MW) and the Balimela Hydel Project (360 MW). These two large sources of generation are proposed to be integrated with the two earlier projects by extensive transmission grids as shown in the map. Talcher is connected with the Hirakud grid at Burla by a 132 KV line on one hand and is proposed to be joined with Machkund and Balimela projects by a double circuit 220 KV line on the other. Burla serves as the origin of 132 and 66 KV lines, spreading through the districts of Sambalpur, Bolangir, Sundargarh, Keonjhar, Mayurbhanj, Balasore, Cuttack, Puri and Dhenkanal. The Machkund project met the energy requirement of Koraput and Ganjam districts.

Below is given a list of transmission and distribution lines existing or proposed to be constructed in the State:

(A) **220 KV line** (proposed):
Balimela—Talcher (double circuit)
Talcher—Joda (single circuit)

(B) **132 KV line:**

Existing

(i) Burla—Chiplima (double circuit)
(ii) Burla—Rourkela (triple circuit)
(iii) Rourkela—Rajkharswan
(iv) Rourkela—Joda
(v) Joda—Rajkharswan
(vi) Burla—Chainpal—Talcher
(vii) Talcher—Jajpur Road (double circuit)
(viii) Talcher—Chowdwar (existing single circuit: proposed double circuit)
(ix) Chowdwar—Khurda
(x) Machkund — Rayagada — Berhampur—Ganjam
(xi) Jeypur—Sunabeda

Proposed

(i) Joda—Rairangpur
(ii) Jajpur Road—Basudebpur—Balasore
(iii) Chowdwar — Kendrapara — Paradip
(iv) Rayagada—Teravali (double circuit)
(v) Teravali—Kesinga
(vi) Jharsuguda — Brajarajnagar — Raigarh (M.P.)

(C) **66 KV line:**

Existing

(i) Joda—Betnoti
(ii) Joda—Tensa
(iii) Burla—Bargarh—Bolangir

Proposed

(i) Joda—Banspani
(ii) Joda—Bolani

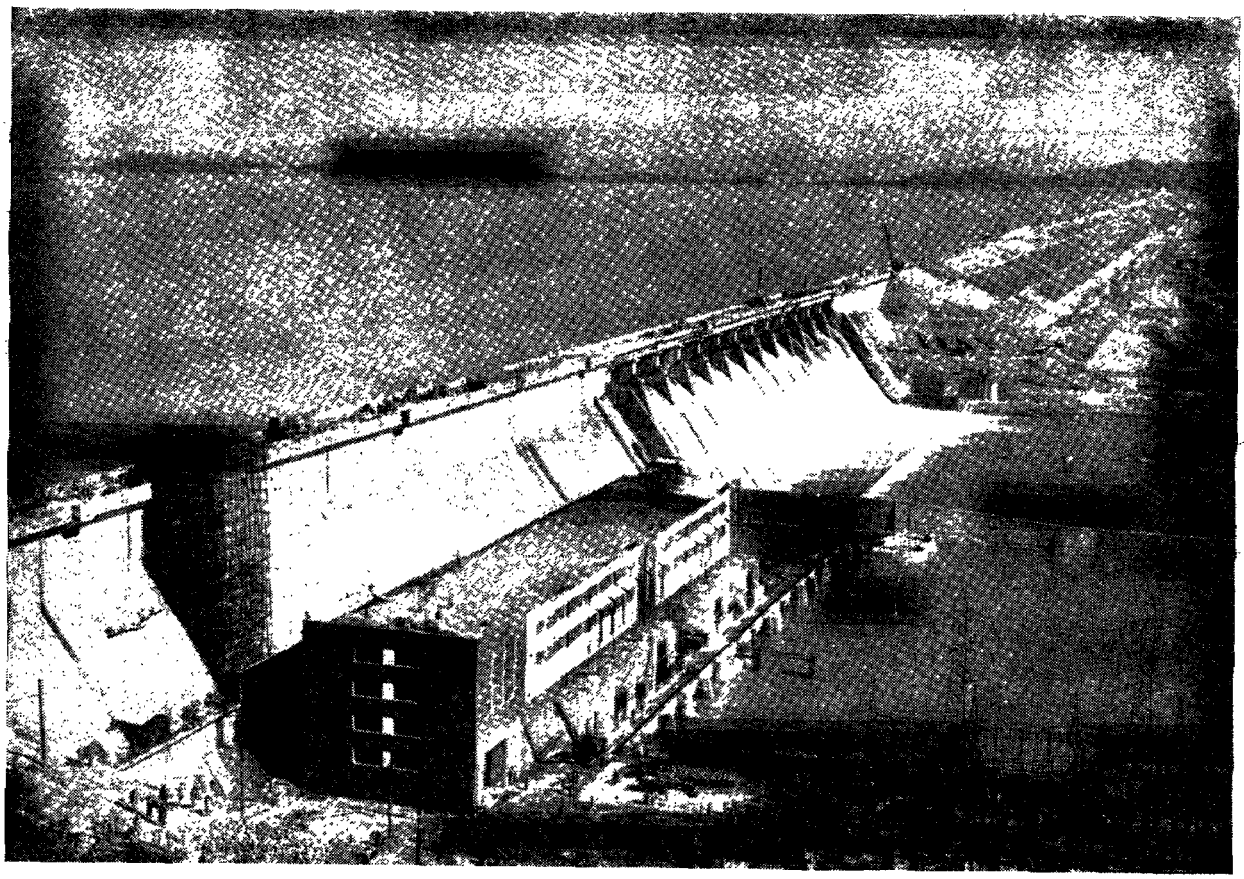
(D) **33/11 KV lines**—There are a large number of transmission and distribution lines of 33 and 11 KV denominations as given below:

(i) 33 KV existing— 18 lines
proposed—33 lines

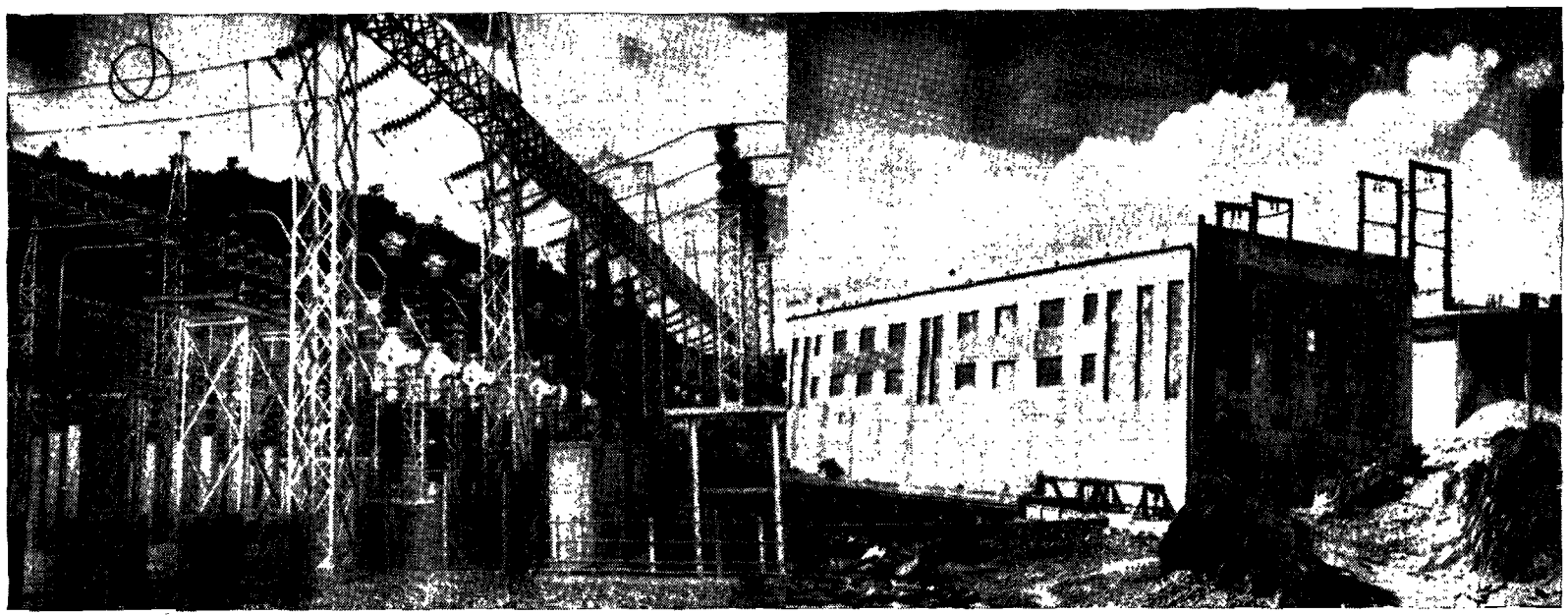
(ii) 11 KV existing— 48 lines
proposed—33 lines

All these lines are shown in the map. Many of the 11 KV lines are intended for electrification of villages and small towns. By the end of the Second Plan, the number of villages electrified was 154. Moreover, electricity was extended to 59 out of 62 towns in the State. By the time this Note was written, the remaining 3 towns had also been electrified. In the Third Plan period, the scheme of rural electrification was expanded enormously to meet the needs of Panchayat Samiti industries and lift irrigation schemes.

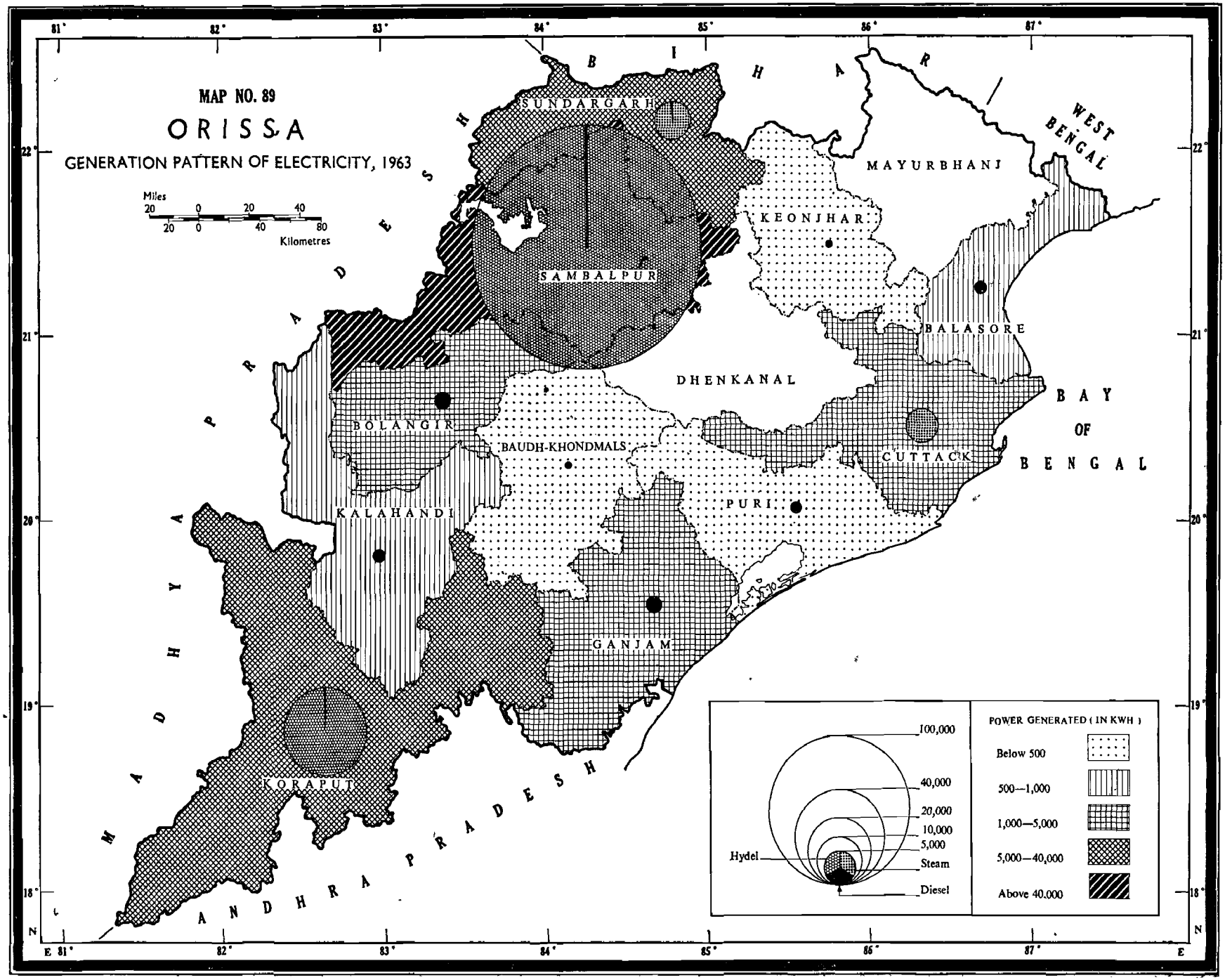
Source— State Electricity Board, Orissa



HIRAKUD DAM PROJECT
(9 Miles to the west of Sambalpur)
A view of the RESERVOIR (water-spread area 288 sq. miles), MAIN DAM (3 miles long and 150 ft high), POWER HOUSE (installed capacity: 1,23,000 KW) and SPILLWAY (designed for overflow regulated by 34 radial crest grates—20 ft high and 51 ft wide)



MACHKUND HYDRO-ELECTRIC PROJECT
(49 Miles to the south of Jeypore in Koraput District)
Transmission Lines and Power House


MAP NO. 89
ORISSA
GENERATION PATTERN OF ELECTRICITY, 1963
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH
SAMBALPUR
MAYURBHANJ
KEONJHAR
BALASORE
DHENKANAL
BOLANGIR
BAUDH-KHONDMALS
CUTTACK
PURI
KALAHANDI
GANJAM
KORAPUT
BAY OF BENGAL
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BIHAR
POWER GENERATED (IN KWH)
Below 500
500—1,000
1,000—5,000
5,000—40,000
Above 40.000
100,000
40,000
20,000
10,000
5,000
Steam
Diesel
Hydel

MAP No. 89

GENERATION PATTERN OF ELECTRICITY, 1963

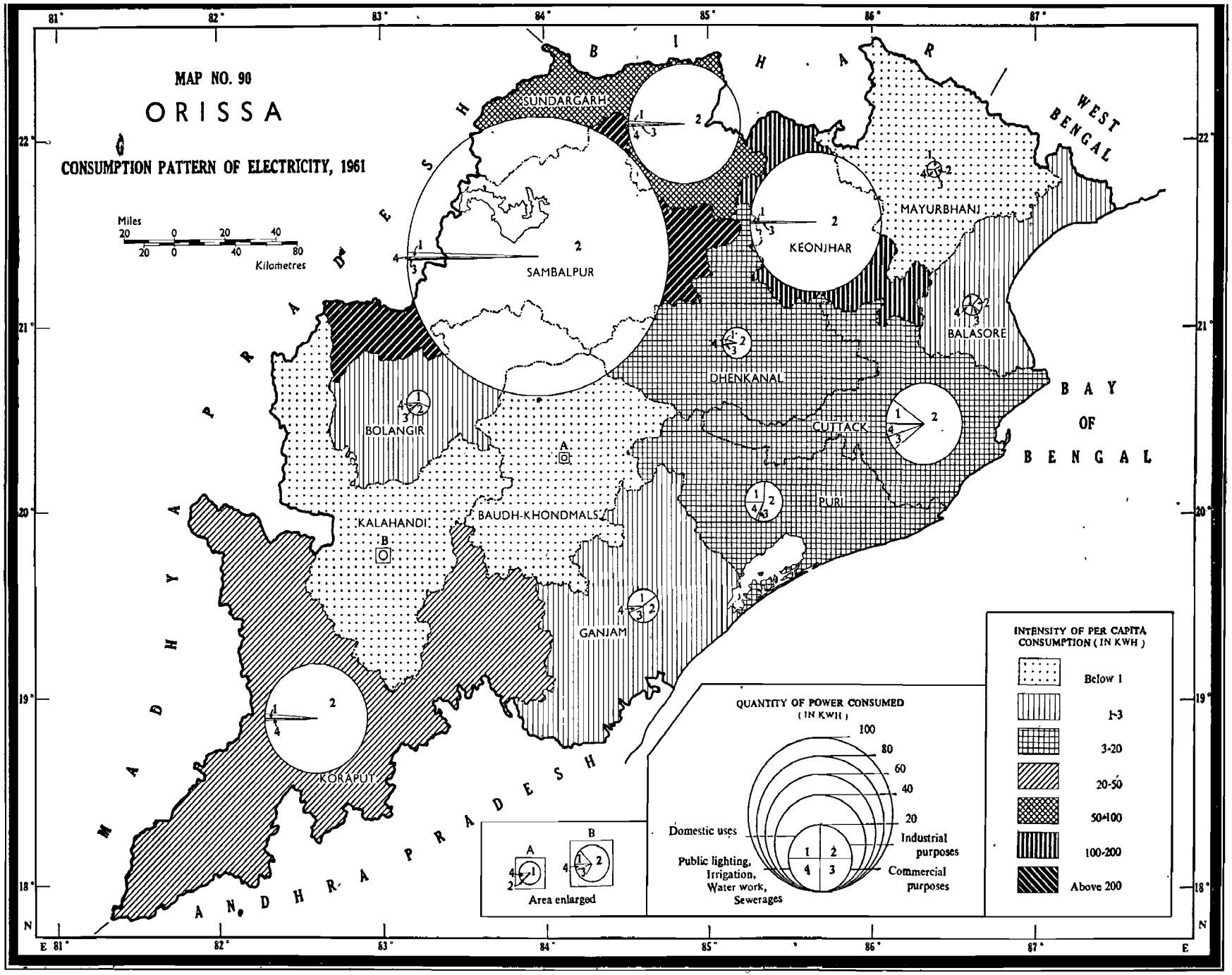
Generation of electricity by different means, viz., hydel, steam and diesel in the districts of Orissa is shown in this map. There is no power plant in the State which utilizes natural gas to generate electricity. The installed capacity of each district is indicated in Kilowatts. Pie-graphs proportionate to the generating capacity are drawn in each district. The circles are divided by sectors and shaded wherever necessary to represent the proportion of power generated by either of the three means mentioned above. Thereafter, the districtwise total generation of electricity is grouped into five ranges, viz., below 500 KW, 500 to 1,000 KW, 1,000 to 5,000 KW, 5,000 to 40,000 KW and above 40,000 KW. The districts are hatched according to their respective ranges in black outside the circles.

The installed capacity of all the power stations in Orissa in 1963-64 was 320·5 MW being generated by 28 power stations in the State. Out of these stations, two are major hydel projects, namely, the Hirakud and the Machkund projects together generating 304,425 KW, which is 94·96 per cent of the State aggregate, and two are thermal stations at Rajgangpur and Chowdwar generating 11,500 KW and the remaining 24 are small diesel stations located in different localities of the State, generating 4,643·5 KW of electricity. In three districts, namely, Sundargarh, Sambalpur and Koraput, the percentage of generation of power by diesel plants is so small when compared with the overall generation of the districts concerned, that they have been represented in the map by very thin sectors in solid black. In generation of hydro-electricity, Sambalpur has the lion's share (270,000 KW) followed by Koraput (34,425 KW). Dhenkanal and Mayurbhanj districts do not generate any quantity of electricity.

The following statement gives the generation capacity of electricity in the districts during 1963 :

State/ District	Total power generated (in KW)	Power generated in KW by		
		Hydel	Steam	Diesel
ORISSA	320,568·5	304,425	11,500	4,643·5
Kalahandi	506	—	—	506
Koraput	34,534·5	34,425	—	109·5
Sambalpur	270,175	270,000	—	175
Bolangir	1,117	—	—	1,117
Baudh-Khondmals	179	—	—	179
Ganjam	1,093	—	—	1,093
Sundargarh	6,612	—	6,500	112
Dhenkanal	—	—	—	—
Puri	447	—	—	447
Keonjhar	277	—	—	277
Cuttack	5,000	—	5,000	—
Mayurbhanj	—	—	—	—
Balasore	628	—	—	628

Source—State Electricity Board, Orissa


MAP NO. 90
ORISSA
CONSUMPTION PATTERN OF ELECTRICITY, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
DHENKANAL
CUTTACK
PURI
BOLANGIR
KALAHANDI
BAUDH-KHONDMALS
GANJAM
KORAPUT
BIHAR
WEST BENGAL
ORISSA
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Area enlarged
QUANTITY OF POWER CONSUMED (IN KWH)
100
80
60
40
20
Domestic uses
Public lighting, Irrigation, Water work, Sewerages
Industrial purposes
Commercial purposes
INTENSITY OF PER CAPITA CONSUMPTION (IN KWH)
Below 1
1-3
3-20
20-50
50-100
100-200
Above 200
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 90

CONSUMPTION PATTERN OF ELECTRICITY, 1961

The consumption pattern of electricity in the districts during 1961 is shown in this map. Pie-graphs, proportionate to total consumption are drawn in the heart of each district. Each circle is again subdivided by sectors to show the proportion of power consumed for different purposes, viz., (i) domestic use, (ii) industrial purpose, (iii) commercial purpose and (iv) public lighting, water works and sewages, etc. Thereafter, per capita consumption of electricity in each district is taken into account and grouped into seven ranges, viz., below 1 Kw-h, 1 to 3, 3 to 20, 20 to 50, 50 to 100, 100 to 200 and above 200 Kw-h. The districts are shaded suitably outside the circles corresponding to their percentage groups.

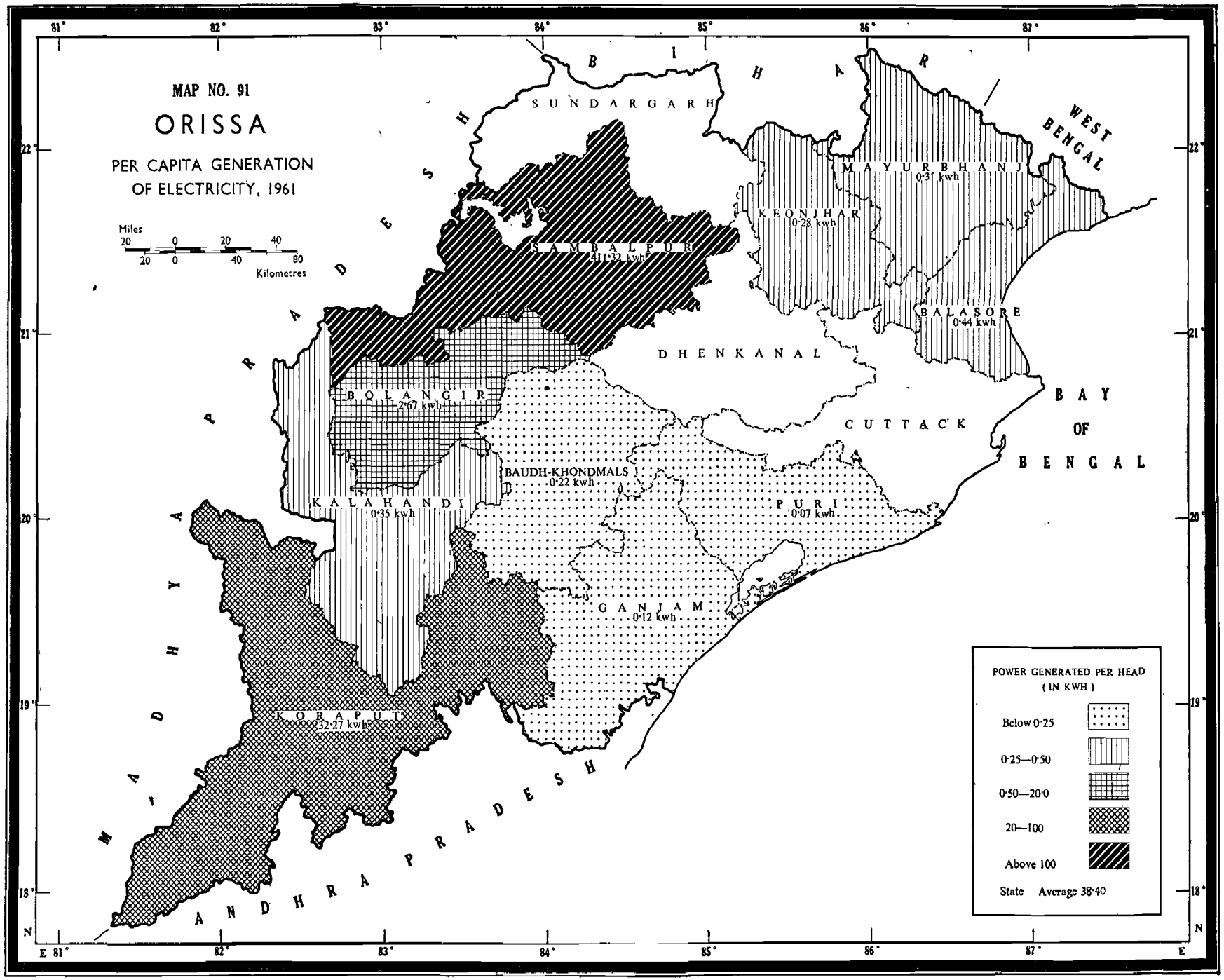
Electricity consumed in the State during 1961 reached the satisfactory figure of 570·9 million Kw-h. It is gratifying to note that 96·39 per cent of the power is consumed for industrial purposes alone. Keonjhar utilizes 99·57 per cent of its power for industry, while Baudh-Khondmals uses only 1·03 per cent of power for the purpose. On the other hand, the latter consumes 87·63 per cent in domestic uses, while the former utilizes only 0·27 per cent for such purposes.

Sambalpur and Keonjhar consume maximum per capita of electricity, viz., 218·17 Kw-h and 110·53 Kw-h respectively. Baudh-Khondmals (0·19), Kalahandi (0·30) and Mayurbhanj (0·77) Kw-h present a poor show in per capita consumption of electricity. This shows their backwardness in industry and in living conditions.

The pattern of power consumption in the districts, along with the per capita consumption is given below in Kw-h for the year 1961 :

State/ District	Total power consumed (in million Kw-h)	Domestic uses	Industrial purposes	Commercial purposes	Publicity, irrigation, water work, etc.	Per capita power consumption (in Kw-h)
ORISSA	570·928	12·065	550·290	3·700	4·873	32·53
Kalahandi	0·301	0·039	0·213	0·032	0·017	0·30
Koraput	50·947	0·701	50·017	0·073	0·156	34·00
Sambalpur	329·153	1·750	326·549	0·423	0·431	218·17
Bolangir	2·480	1·385	0·795	0·061	0·239	2·32
Baudh-Khondmals	0·097	0·085	0·001	—	0·011	0·19
Ganjam	4·681	1·873	1·597	0·909	0·302	2·50
Sundargarh	60·058	0·414	59·267	0·115	0·262	79·17
Dhenkanal	4·027	0·156	3·783	0·012	0·076	3·91
Puri	6·567	1·675	3·573	0·148	1·171	3·52
Keonjhar	82·158	0·222	81·806	0·092	0·038	110·53
Cuttack	27·722	2·705	22·037	1·515	1·468	9·06
Mayurbhanj	0·922	0·395	0·219	0·013	0·295	0·77
Balasore	1·815	0·665	0·433	0·307	0·410	1·28

Source—State Electricity Board, Orissa


MAP NO. 91
ORISSA
PER CAPITA GENERATION OF ELECTRICITY, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
411·32 kwh
MAYURBHANJ
0·31 kwh
KEONJHAR
0·28 kwh
BALASORE
0·44 kwh
DHENKANAL
BOLANGIR
2·67 kwh
CUTTACK
BAUDH-KHONDMALS
0·22 kwh
KALAHANDI
0·35 kwh
PURI
0·07 kwh
GANJAM
0·12 kwh
KORAPUT
32·27 kwh
POWER GENERATED PER HEAD (IN KWH)
Below 0·25
0·25—0·50
0·50—20·0
20—100
Above 100
State Average 38·40
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 91

PER CAPITA GENERATION OF ELECTRICITY, 1961

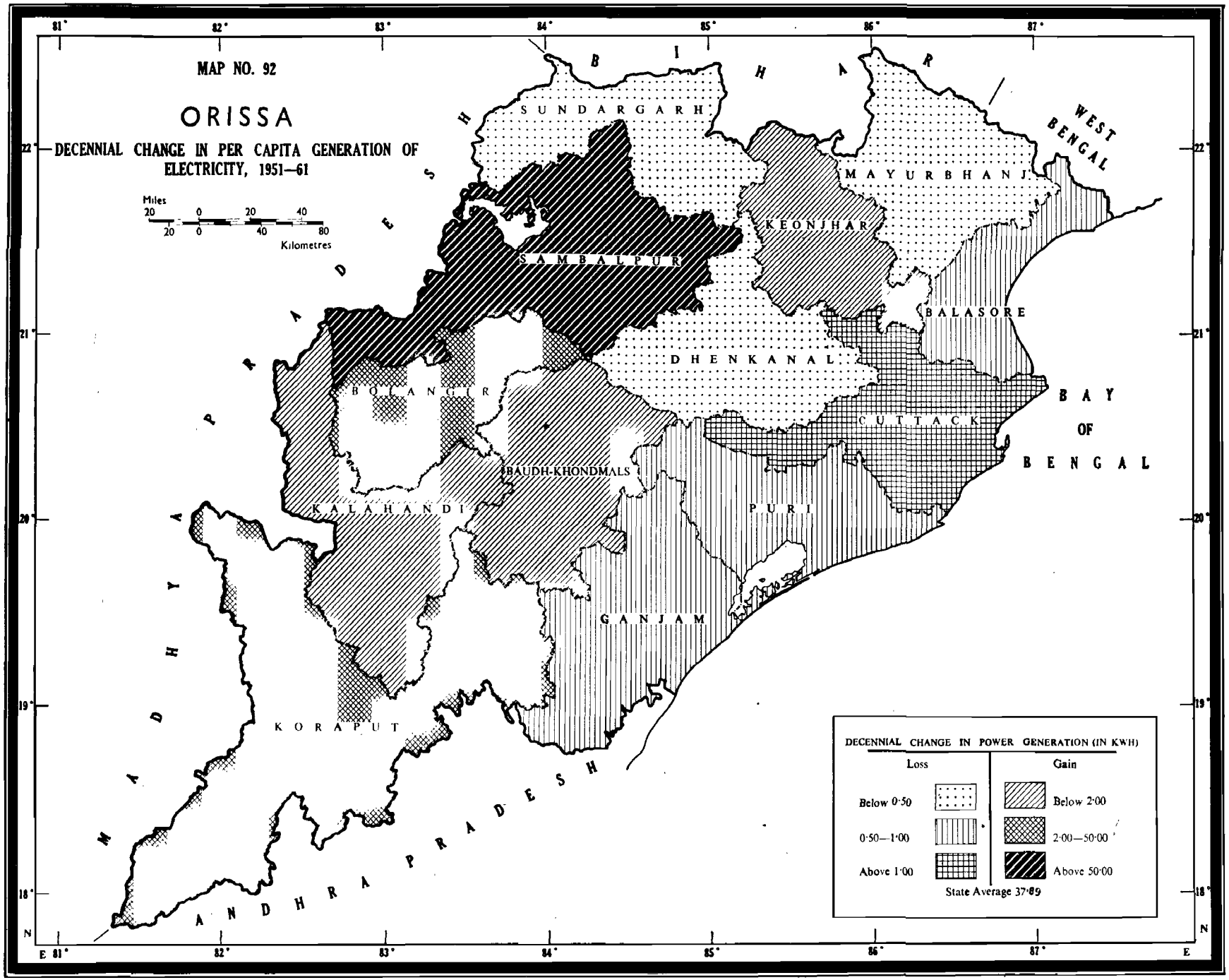
The per capita generation of electricity in the districts of Orissa during 1961 is shown in the map. The total output is measured in Kilowatt-hours for each person, and the per capita production is grouped into five ranges, above and below the State average (38·40 Kw-h), viz., below 0·25 Kw-h, 0·25 to 0·50 Kw-h, 0·50 to 20·0 Kw-h, 20·0 to 100.0 Kw-h and above 100·0 Kw-h. The districts are marked with hatchings corresponding to the ranges allotted.

Orissa has made remarkable progress in developing the capacity for generation of electricity during the last decade, increasing the total production from 7·5 million Kw-h in 1951-52 to 673·8 million Kw-h in 1961-62. This power comes for the most part from two distinct power systems in the State, namely, the Hirakud and the Duduma projects. Among the districts, Sambalpur alone generates 620·6 million Kw-h after the Hirakud extensions and the Chiplima station were commissioned. Koraput, the second largest producer, has the capacity of 48·4 million Kw-h. The districts which had no generation of electricity in 1961 are Cuttack, Dhenkanal and Sundargarh. They were served by the Hirakud system resulting in inactivity of power stations of their own, if any. Prior to the supply of power from Hirakud, Cuttack was served by the Chowdwar thermal station with a capacity of 5 MW, which station continued afterwards to be maintained as stand-by.

The following statement gives the district-wise generation of electricity, aggregate as well as per capita, during 1961 :

District	Total power generated (in million Kw-h)	Per capita power generated (in Kw-h)
Sambalpur	620·553	411·32
Orissa	673·819	38·40
Koraput	48·360	32·28
Bolangir	2·852	2·67
Balasore	0·622	0·44
Kalahandi	0·361	0·36
Mayurbhanj	0·372	0·31
Keonjhar	0·214	0·29
Baudh-Khondmals	0·116	0·23
Ganjam	0·228	0·12
Puri	0·141	0·08
Cuttack, Dhenkanal, Sundargarh	Nil	Nil

Source—State Electricity Board, Orissa


MAP NO. 92
ORISSA
DECENNIAL CHANGE IN PER CAPITA GENERATION OF ELECTRICITY, 1951—61
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
DHENKANAL
BOLANGIR
CUTTACK
BAUDH-KHONDMALS
KALAHANDI
PURI
GANJAM
KORAPUT
DECENNIAL CHANGE IN POWER GENERATION (IN KWH)
Loss
Gain
Below 0·50
0·50—1·00
Above 1·00
Below 2·00
2·00—50·00
Above 50·00
State Average 37·89
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 92

DECENNIAL CHANGE IN PER CAPITA GENERATION OF ELECTRICITY, 1951—1961

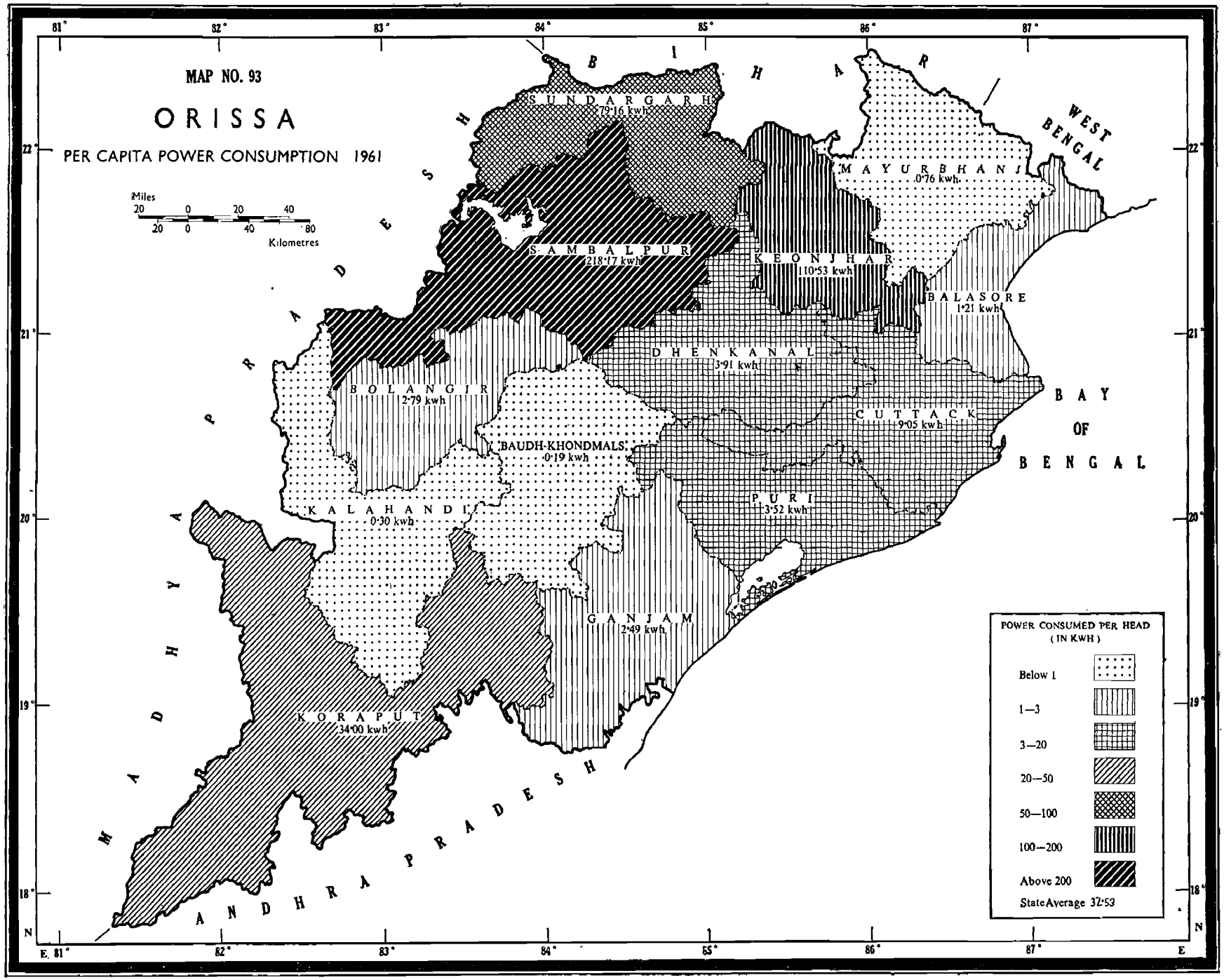
The per capita generation of electricity during the decade 1951-61 in the State has changed remarkably. The map is drawn to display the decennial change occurring in districts. The data of per capita generation of electricity in the years 1951 and 1961 are compared to find out increase or decrease during the decade. The districts having a gain are shaded in red, while the districts suffering loss are marked with black hatchings.

The completion of the Hirakud Project accelerated the generation of electricity thousandfold in Sambalpur district. Similarly, the Machkund Project in Koraput district enormously raised the quantum of generation of electricity in the district. As a result, power generation in the State tremendously increased from the paltry 7·5 million Kw-h in 1951-52 to the magnitude of 673·8 million Kw-h in 1961-62. Consequently the per capita generation shot up 38·4 Kw-h from 0·5 Kw-h only in ten years. The most remarkable achievement was in the district of Sambalpur where the per capita generation went up to 411·32 Kw-h from the negligible figure of 0·23 Kw-h. There are some districts which suffered loss, but this was due to overflow of surplus energy generated by major power stations in other districts. In this manner seven districts lost while six gained, as depicted clearly in the map.

The following statement gives the decennial change in per capita generation of electricity in the districts of Orissa between 1951 and 1961 :

State/ District	1951		1961		1951 to 1961
	Power generated (in million Kw-h)	Per capita power generated (in Kw-h)	Power generated (in million Kw-h)	Per capita power generated (in Kw-h)	Difference in per capita generation (in Kw-h)
ORISSA	7·513	0·51	673·819	38·40	+ 37·89
Kalahandi	0·089	0·10	0·361	0·36	+ 0·26
Koraput	—	—	48·360	32·28	+ 32·28
Sambalpur	0·299	0·23	620·553	411·32	+411·09
Bolangir	0·229	0·25	2·852	2·67	+ 2·42
Baudh-Khondmals	—	—	0·116	0·23	+ 0·23
Ganjam	1·378	0·85	0·228	0·12	— 0·73
Sundargarh	0·111	0·20	—	—	— 0·20
Dhenkanal	0·069	0·08	—	—	— 0·08
Puri	1·044	0·66	0·141	0·08	— 0·58
Keonjhar	0·085	0·14	0·214	0·29	+ 0·15
Cuttack	2·692	1·06	—	—	— 1·06
Mayurbhanj	0·391	0·38	0·372	0·31	— 0·07
Balasore	1·126	1·02	0·622	0·44	— 0·58

Source—State Electricity Board, Orissa


MAP NO. 93
ORISSA
PER CAPITA POWER CONSUMPTION 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
79·16 kwh
SAMBALPUR
218·17 kwh
KEONJHAR
110·53 kwh
MAYURBHANJ
0·76 kwh
BALASORE
1·21 kwh
DHENKANAL
3·91 kwh
BOLANGIR
2·79 kwh
CUTTACK
9·05 kwh
BAUDH-KHONDMALS
0·19 kwh
PURI
3·52 kwh
KALAHANDI
0·30 kwh
GANJAM
2·49 kwh
KORAPUT
34·00 kwh
POWER CONSUMED PER HEAD
(IN KWH)
Below 1
1—3
3—20
20—50
50—100
100—200
Above 200
State Average 32·53
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 93

PER CAPITA POWER CONSUMPTION, 1961-62

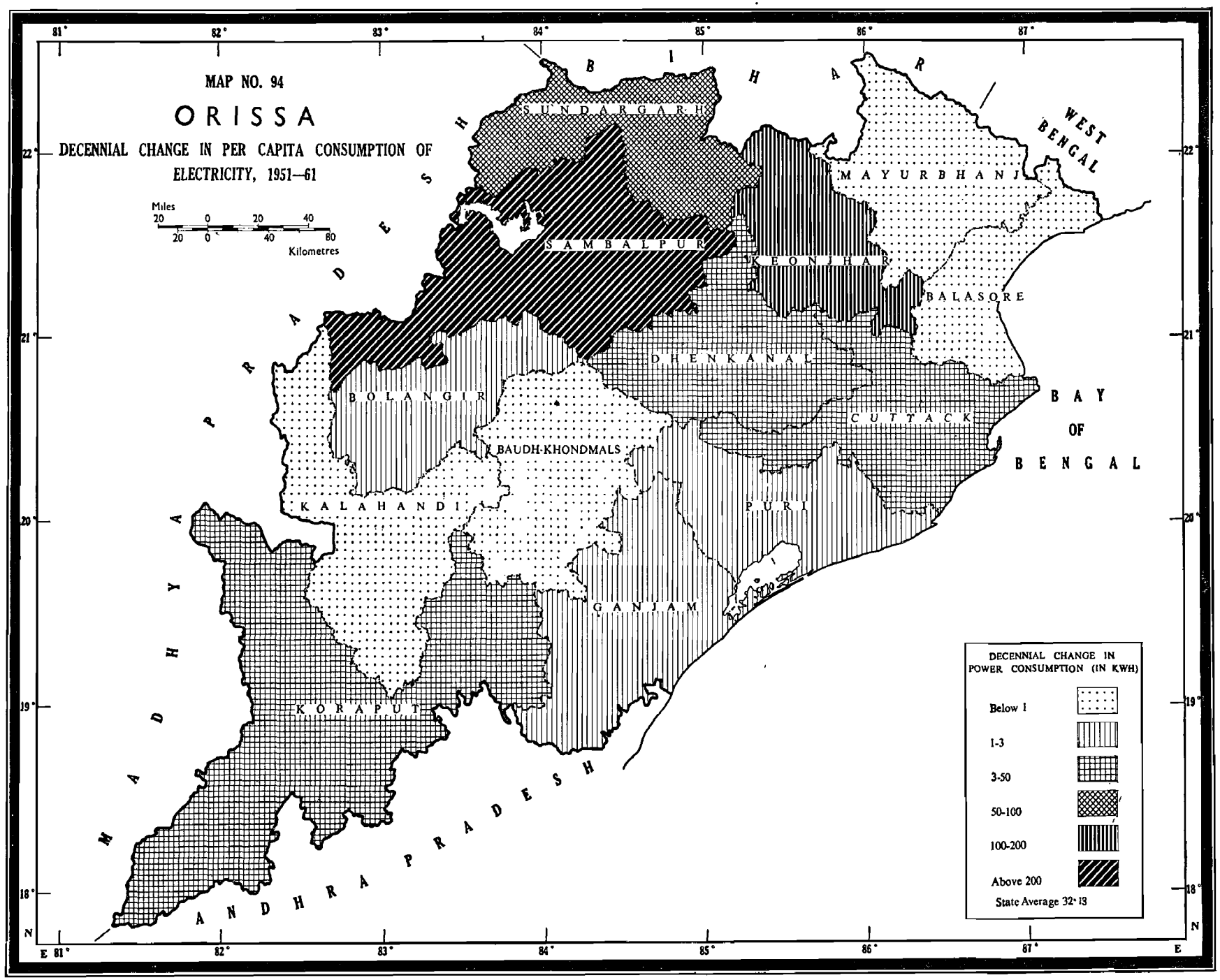
Electrical power (in Kw-h) consumed per head of person in the districts of Orissa during 1961-62 is shown in the map. The per capita power consumption has been measured and grouped into seven ranges, above and below the State average (32·53 Kw-h), viz., below 1, 1 to 3, 3 to 20, 20 to 50, 50 to 100, 100 to 200 and above 200 Kw-h. Districts falling under the above groups are shaded suitably by choropleth technique.

A look at the map shows the three bordering districts of Sambalpur, Keonjhar and Sundargarh having the largest per capita consumption of electricity with 218·2, 110·5 and 79·2 Kw-h respectively. This is because of high industrial requirement of the districts. Baudh-Khondmals has the lowest per capita consumption, namely, 0·19 Kw-h.

The per capita power consumption in the districts of Orissa during 1961-62 is given below :

District	Total power consumed in the district (in million Kw-h)	Per capita consumption (in Kw-h)
Sambalpur	329·153	218·17
Keonjhar	82·158	110·53
Sundargarh	60·058	79·17
Koraput	50·947	34·00
Orissa		32·53
Cuttack	27·722	9·06
Dhenkanal	4·027	3·91
Puri	6·567	3·52
Ganjam	4·681	2·50
Bolangir	2·480	2·32
Balasore	1·815	1·28
Mayurbhanj	0·922	0·77
Kalahandi	0·301	0·30
Baudh-Khondmals	0·097	0·19

Source—State Electricity Board, Orissa


MAP NO. 94
ORISSA
DECENNIAL CHANGE IN PER CAPITA CONSUMPTION OF ELECTRICITY, 1951—61
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
DHENKANAL
BOLANGIR
CUTTACK
BAUDH-KHONDMALS
KALAHANDI
PURI
GANJAM
KORAPUT
DECENNIAL CHANGE IN POWER CONSUMPTION (IN KWH)
Below 1
1-3
3-50
50-100
100-200
Above 200
State Average 32·13

MAP No. 94

DECENNIAL CHANGE IN PER CAPITA CONSUMPTION OF ELECTRICITY, 1951—1961

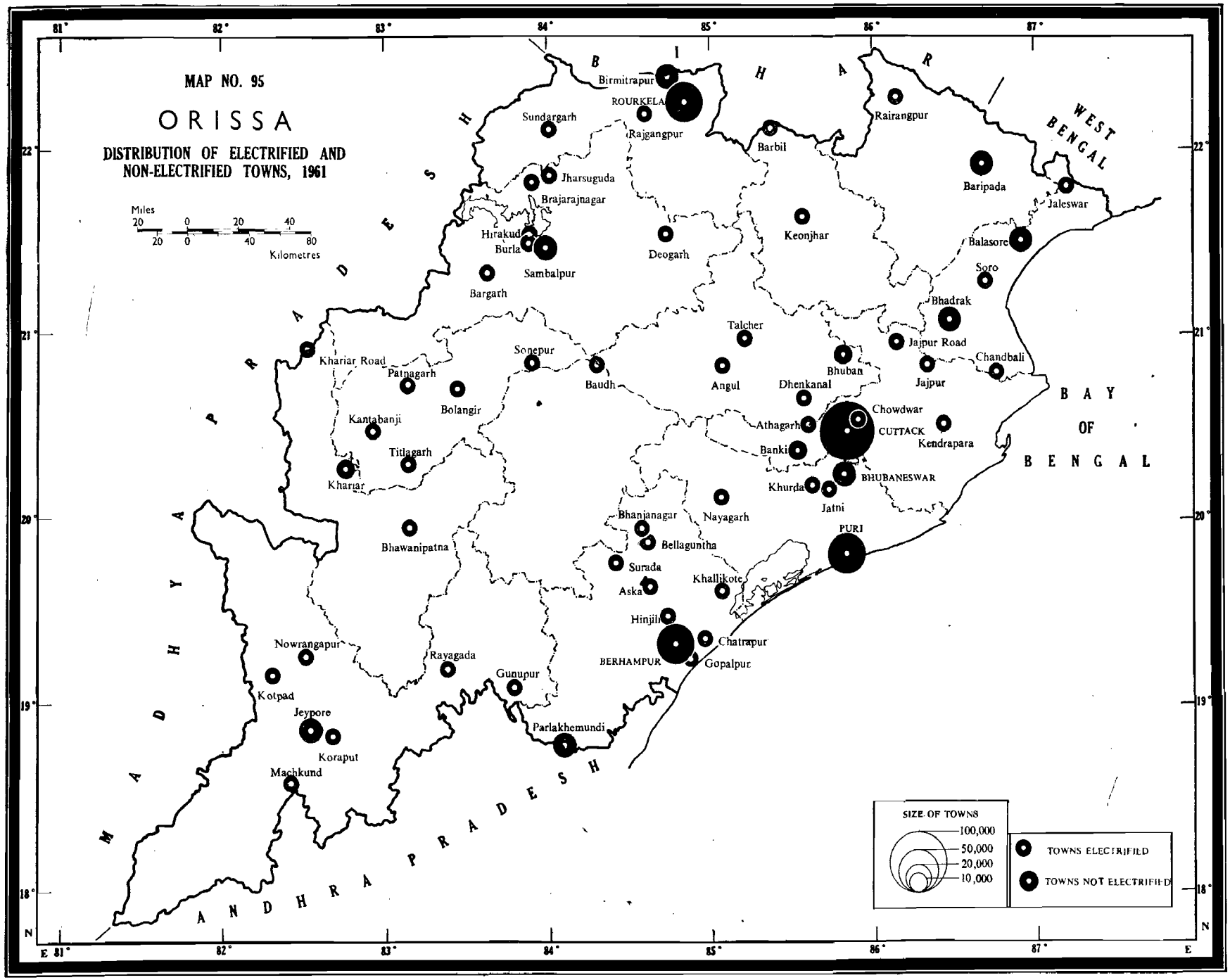
The change that occurred in the per capita consumption of electricity during a span of ten years from 1951 to 1961 in the districts of Orissa has been demonstrated in this map. Absolute figures of per capita consumption of the concerned years is taken into account. The difference in the two sets of figures is grouped into six ranges, above and below the State average (32·13 Kw-h), viz., below 1, 1 to 3, 3 to 50, 50 to 100, 100 to 200 and above 200 Kw-h. The districts are then suitably hatched.

During the last decade, generation of electricity increased from 7·5 million Kw-h to 673·8 million Kw-h in the State. It is thus natural that consumption has increased. In 1951, the per capita consumption was only 0·40 Kw-h, but by 1961 it went up to 32·53 Kw-h. The district with the most remarkable improvement is Sambalpur where the per capita consumption went up to 218·17 Kw-h from only 0·13 Kw-h. During 1951 there was no electricity in Koraput and Baudh-Khondmals. But by 1961 the per capita consumption was 34·0 Kw-h and 0·19 Kw-h respectively.

The per capita power consumption during 1951 and 1961 and the increase during the decade in each district is given below :

State/ District	Power consumed in 1951		Power consumed in 1961		Increase in per capita consumption during 1951-61
	Gross (in million Kw-h)	Per capita (in Kw-h)	Gross (in million Kw-h)	Per capita (in Kw-h)	
ORISSA	6·010	0·40	570·928	32·53	32·13
Kalahandi	0·071	0·08	0·301	0·30	0·22
Koraput	—	—	50·947	34·00	34·00
Sambalpur	0·175	0·13	329·153	218·17	218·04
Bolangir	0·205	0·22	2·480	2·32	2·10
Baudh-Khondmals	—	—	0·097	0·19	0·19
Ganjam	1·114	0·69	4·681	2·50	1·81
Sundargarh	0·089	0·16	60·058	79·17	79·01
Dhenkanal	0·055	0·07	4·027	3·91	3·84
Puri	0·835	0·53	6·567	3·52	2·99
Keonjhar	0·068	0·12	82·158	110·53	110·41
Cuttack	2·184	0·86	27·722	9·06	8·20
Mayurbhanj	0·313	0·30	0·922	0·77	0·47
Balasore	0·901	0·81	1·815	1·28	0·47

Source—State Electricity Board, Orissa


MAP NO. 95
ORISSA
DISTRIBUTION OF ELECTRIFIED AND NON-ELECTRIFIED TOWNS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
ROURKELA
Sundargarh
Rajgangpur
Barbil
Rairangpur
Jharsuguda
Brajarajnagar
Baripada
Jaleswar
Hirakud
Burla
Sambalpur
Deogarh
Keonjhar
Balasore
Soro
Bargarh
Bhadrak
Talcher
Jajpur Road
Kharlar Road
Sonepur
Patnagarh
Baudh
Angul
Bhuban
Dhenkanal
Jajpur
Chandbali
Bolangir
Chowdwar
Kantabanji
Athagarh
CUTTACK
Kendrapara
Titlagarh
Banki
Kharlar
BHUBANESWAR
Khurda
Jatni
Bhanjanagar
Nayagarh
PURI
Bhawanipatna
Bellaguntha
Surada
Khallikote
Aska
Hinjili
Chatrapur
Nowrangapur
Rayagada
BERHAMPUR
Gopalpur
Gunupur
Kotpad
Jeypore
Parlakhemundi
Koraput
Machkund
SIZE OF TOWNS
100,000
50,000
20,000
10,000
TOWNS ELECTRIFIED
TOWNS NOT ELECTRIFIED
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

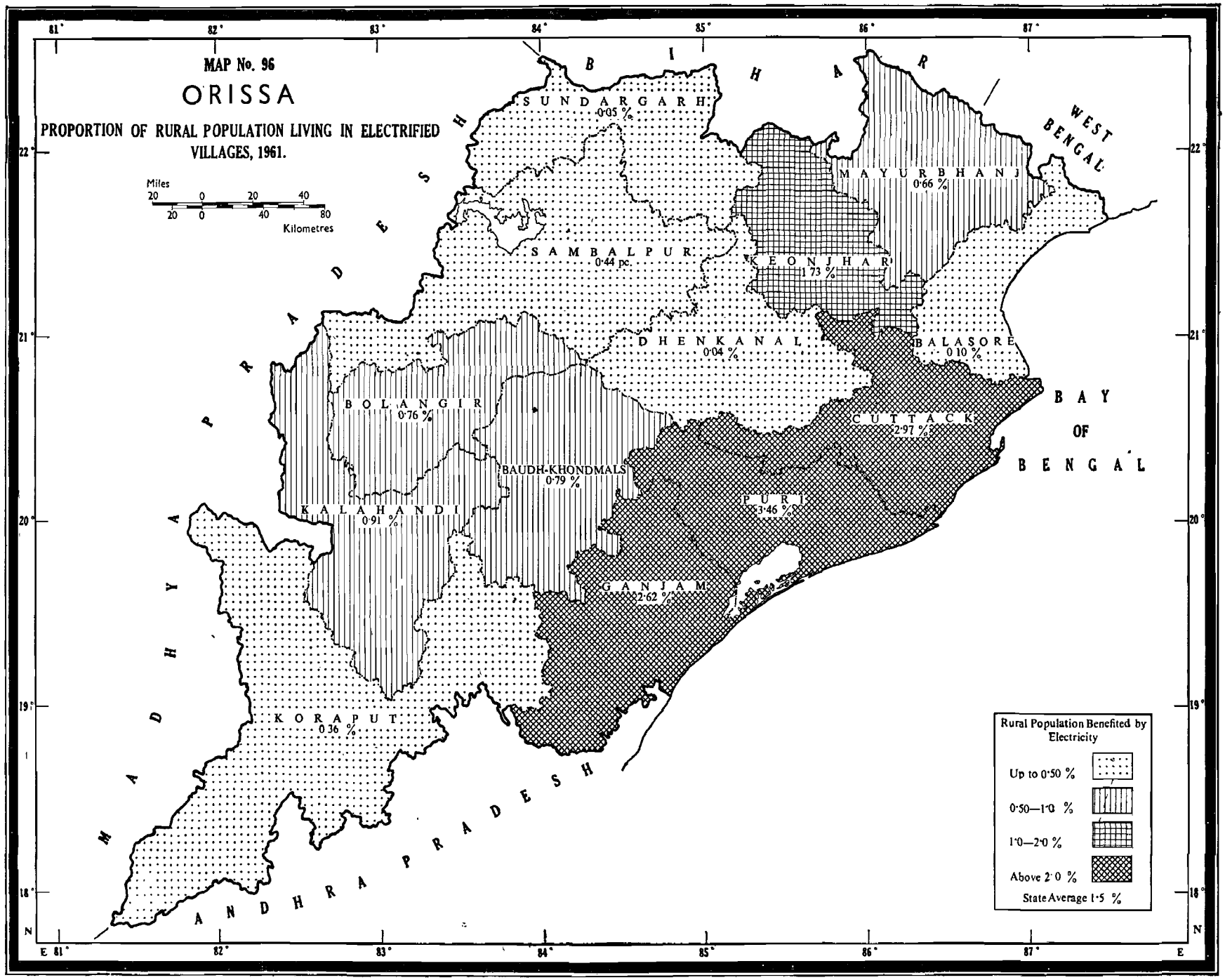
MAP No. 95

DISTRIBUTION OF ELECTRIFIED AND NON-ELECTRIFIED TOWNS, 1961

Extent of electrification of towns in Orissa has been shown in this map. The circles shaded in red indicate the towns having electricity, while the towns with black circles are non-electrified. The size of the circles vary according to the strength of population. Pie-graph method is used for showing the variation. Square roots of 10,000, 20,000, 50,000 and 100,000 give the radii of circles drawn at the appropriate location of respective towns.

There are 62 towns in all in the State. It is pleasing to find, 59 out of them have been electrified, while only three towns, viz., Banki, Bhuban and Khariar are left out. Hydel power from Hirakud and Machkund projects supplies electricity to most of the towns, while a few derive it from either diesel or thermal power plants.

Source—State Electricity Board, Orissa


MAP No. 96
ORISSA
PROPORTION OF RURAL POPULATION LIVING IN ELECTRIFIED VILLAGES, 1961.
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 0·05 %
SAMBALPUR 0·44 pc.
MAYURBHANJ 0·66 %
KEONJHAR 1·73 %
DHENKANAL 0·04 %
BALASORE 0·10 %
BOLANGIR 0·76 %
CUTTACK 2·97 %
BAUDH-KHONDMALS 0·79 %
KALAHANDI 0·91 %
PURI 3·46 %
GANJAM 2·62 %
KORAPUT 0·36 %
Rural Population Benefited by Electricity
Up to 0·50 %
0·50—1·0 %
1·0—2·0 %
Above 2·0 %
State Average 1·5 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 96

PROPORTION OF RURAL POPULATION LIVING IN ELECTRIFIED VILLAGES, 1961

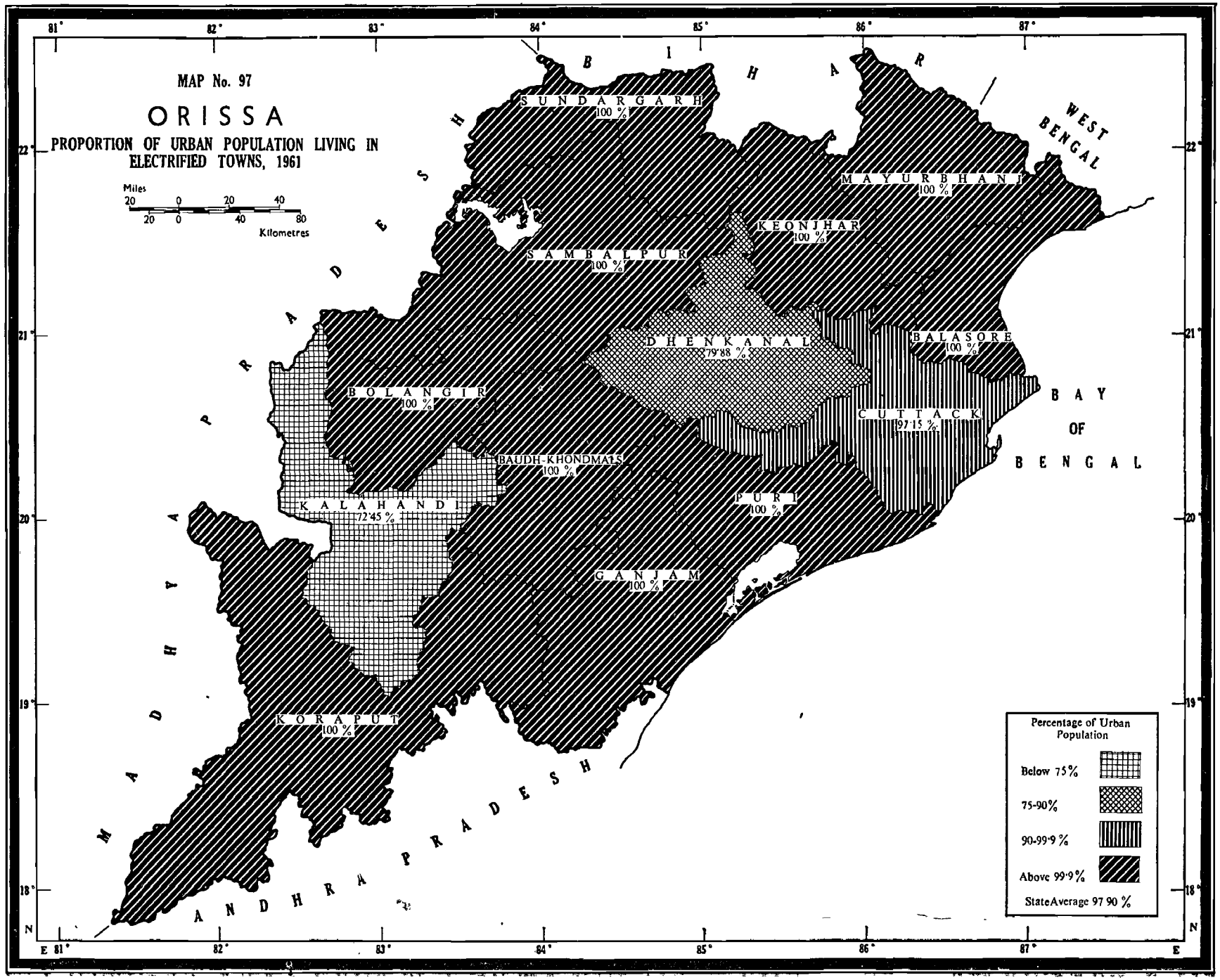
The proportion of rural population living in electrified villages in the districts of Orissa in 1961 is shown in the map. The potential rural population benefited by electricity is obtained by adding the population as on the 1st of March, 1961 of all the villages within a district which were electrified on that date. The percentage of such population to the total rural population of the district is then calculated and grouped into four ranges, above and below the State average (1·5), viz., below 0·50, 0·50 to 1·00, 1·00 to 2·00 and above 2·00 per cent. The districts are hatched in black by choropleth method corresponding to their percentage share.

In the State, the rural population comprises 16,439,196 persons, out of which only 244,097 persons (1·5%) enjoy the benefits of electricity. Cuttack district has the largest number of villagers (84,698 persons) enjoying electricity, which is 2·97 per cent of the district's rural population. Puri has the highest percentage of rural population (3·46%) enjoying electricity in the district. On the contrary only 0·04 per cent and 0·05 per cent of villagers get electricity in Dhenkanal and Sundargarh districts. But it is surprising to note that Sambalpur the largest generator of electricity in the State serves only 6,166 persons (0·44%) of rural population with electricity.

The statement below gives the number and percentage of rural population enjoying electricity in each district during 1961 :

State/ District	Rural population	No. of villages electrified	Population living in electrified villages	Percentage
ORISSA	16,439,196	175	244,097	1·50
Kalahandi	981,081	4	8,948	0·91
Koraput	1,421,300	8	5,086	0·36
Sambalpur	1,393,311	13	6,166	0·44
Bolangir	1,019,027	9	7,781	0·76
Baudh-Khondmals	508,339	2	4,031	0·79
Ganjam	1,716,686	31	45,083	2·62
Sundargarh	622,857	9	320	0·05
Dhenkanal	981,847	1	452	0·04
Puri	1,732,033	49	59,928	3·46
Keonjhar	711,351	3	12,350	1·73
Cuttack	2,851,723	39	84,698	2·97
Mayurbhanj	1,175,623	5	7,806	0·66
Balasore	1,324,018	2	1,448	0·10

Source—State Electricity Board, Orissa


MAP No. 97
ORISSA
PROPORTION OF URBAN POPULATION LIVING IN ELECTRIFIED TOWNS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 100 %
SAMBALPUR 100 %
KEONJHAR 100 %
MAYURBHANJ 100 %
DHENKANAL 79·88 %
BALASORE 100 %
CUTTACK 97·15 %
BOLANGIR 100 %
BAUDH-KHONDMALS 100 %
KALAHANDI 72·45 %
PURI 100 %
GANJAM 100 %
KORAPUT 100 %
Percentage of Urban Population
Below 75 %
75-90%
90-99·9 %
Above 99·9%
State Average 97 90 %

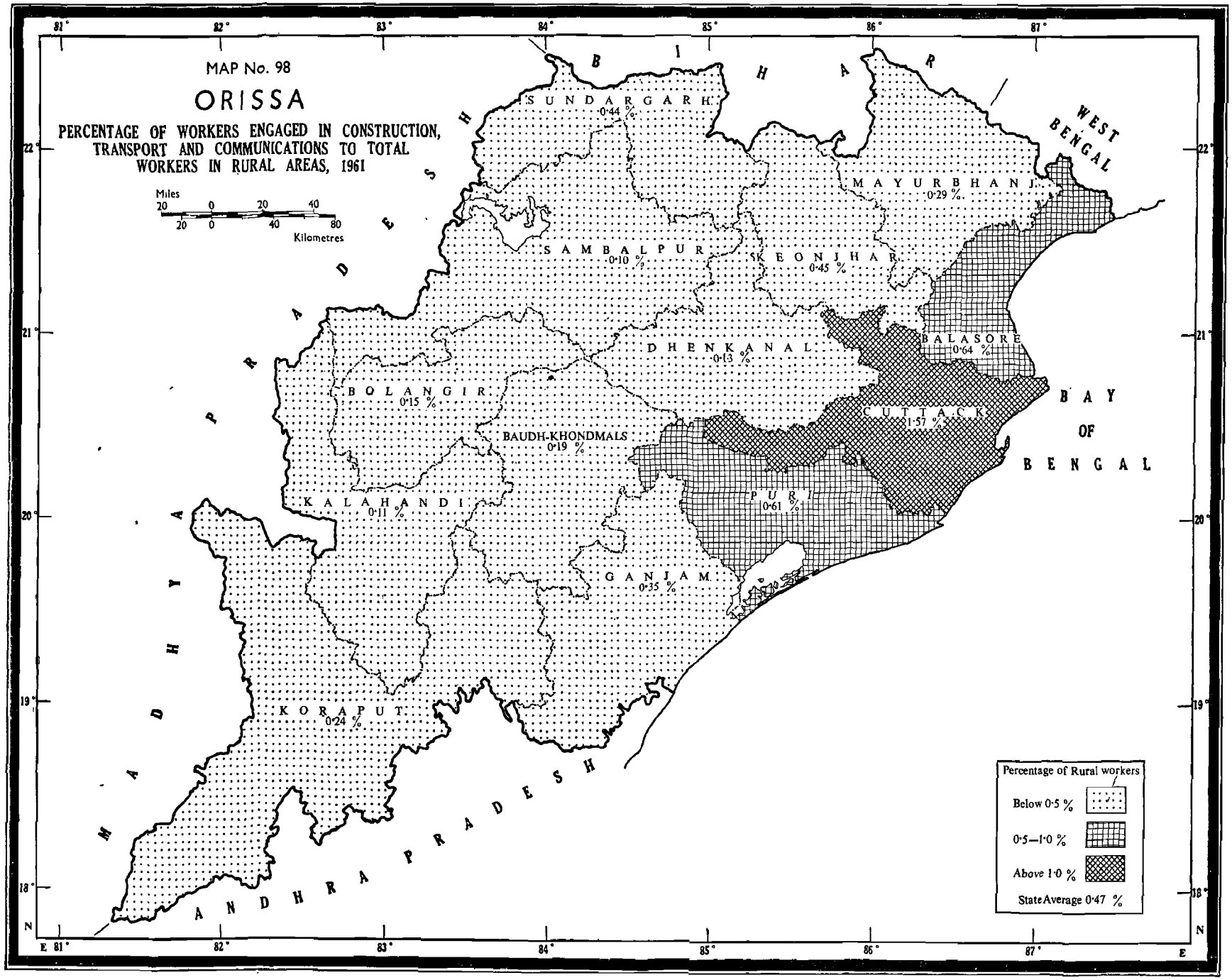
MAP No. 97

PROPORTION OF URBAN POPULATION LIVING IN ELECTRIFIED TOWNS, 1961

This map is the counterpart of the previous map. It demonstrates the proportion of urban population living in electrified towns of different districts in 1961. As many as 10 out of 13 districts have the entire urban population (100 per cent) living in electrified towns. The remaining three districts, namely, Cuttack, Dhenkanal and Kalahandi have not extended the benefit of electricity to all the towns. In these districts, the percentage of benefited population is 97·16, 79·88 and 72·45 respectively. The percentage of urban population is grouped into four ranges, viz., below 75, 75 to 90, 90 to 99·9 and above 99·9 per cent. The districts are shaded by choropleth method corresponding to their groups.

There are 1,109,650 persons in the State living in urban areas. The total number of urban population enjoying electricity is 1,086,367 or 97·9 per cent of the urban population. This shows that only a negligible percentage of urban population has not been benefited by extension of electricity.

Source—State Electricity Board, Orissa


MAP No. 98
ORISSA
PERCENTAGE OF WORKERS ENGAGED IN CONSTRUCTION, TRANSPORT AND COMMUNICATIONS TO TOTAL WORKERS IN RURAL AREAS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 0·44 %
MAYURBHANJ 0·29 %
SAMBALPUR 0·10 %
KEONJHAR 0·45 %
DHENKANAL 0·13 %
BALASORE 0·64 %
BOLANGIR 0·15 %
CUTTACK 1·57 %
BAUDH-KHONDMALS 0·19 %
PURI 0·61 %
KALAHANDI 0·11 %
GANJAM 0·35 %
KORAPUT 0·24 %
Percentage of Rural workers
Below 0·5 %
0·5—1·0 %
Above 1·0 %
State Average 0·47 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 98

PERCENTAGE OF WORKERS ENGAGED IN CONSTRUCTION, TRANSPORT AND COMMUNICATIONS TO TOTAL WORKERS IN RURAL AREAS, 1961

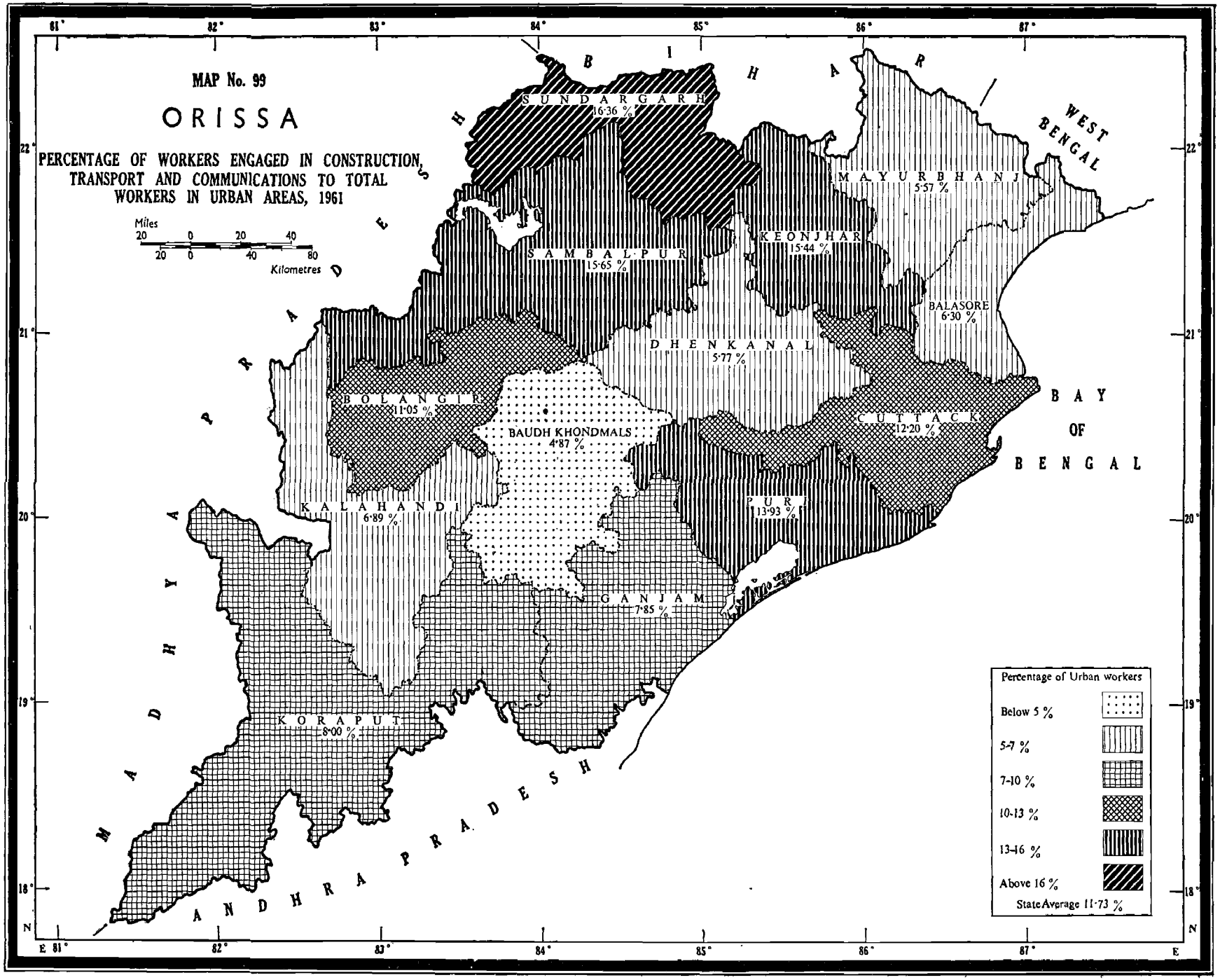
The map represents the percentage of workers engaged in different districts in construction, transport and communications to the total number of workers in rural areas during 1961. Such percentages are grouped into three ranges, above and below the State average (0·47%), viz., below 0·5, 0·5 to 1·0 and above 1·0 per cent. Districts are hatched suitably in black colour, corresponding to their percentage groups.

There are 7,245,211 workers in the rural areas of the State. Out of this 33,718 persons are engaged in construction, transport and communication works which amounts to 0·47 per cent only. Cuttack district has the highest percentage of such workers, viz., 1·57, while Sambalpur (0·10%) and Kalahandi (0·11%) have the lowest percentages of rural workers engaged in these activities.

The low percentage of workers in all the districts shows that the economic activities of the concerned categories have not developed anywhere in the State.

The percentage of rural workers engaged in the activities concerned in different districts is given below:

District	Percentage
Cuttack	1·57
Balasore	0·64
Puri	0·61
State Average	0·47
Keonjhar	0·45
Sundargarh	0·44
Ganjam	0·35
Mayurbhanj	0·29
Koraput	0·24
Baudh-Khondmals	0·19
Bolangir	0·15
Dhenkanal	0·13
Kalahandi	0·11
Sambalpur	0·10


MAP No. 99
ORISSA
PERCENTAGE OF WORKERS ENGAGED IN CONSTRUCTION, TRANSPORT AND COMMUNICATIONS TO TOTAL WORKERS IN URBAN AREAS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 16·36 %
SAMBALPUR 15·65 %
KEONJHAR 15·44 %
MAYURBHANJ 5·57 %
BALASORE 6·30 %
DHENKANAL 5·77 %
BOLANGIR 11·05 %
BAUDH KHONDMALS 4·87 %
CUTTACK 12·20 %
PURI 13·93 %
KALAHANDI 6·89 %
GANJAM 7·85 %
KORAPUT 8·00 %
Percentage of Urban workers
Below 5 %
5-7 %
7-10 %
10-13 %
13-16 %
Above 16 %
State Average 11·73 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 99

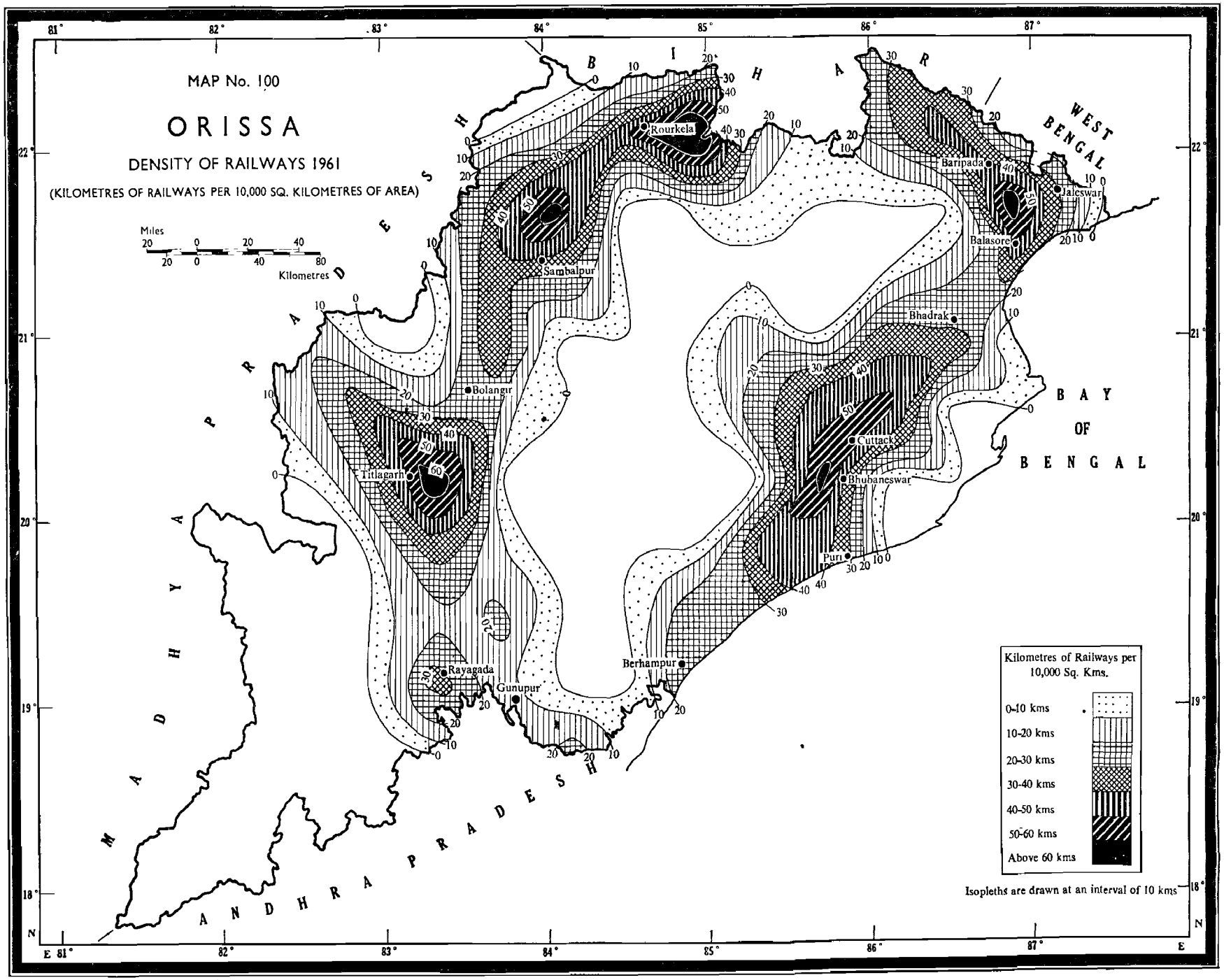
PERCENTAGE OF WORKERS ENGAGED IN CONSTRUCTION, TRANSPORT AND COMMUNICATIONS TO TOTAL WORKERS IN URBAN AREAS, 1961

The percentage of workers engaged in construction, transport and communications to total number of workers in urban areas of Orissa in 1961 is shown in the map. District-wise percentage is worked out and grouped into six ranges, viz., below 5, 5 to 7, 7 to 10, 10 to 13, 13 to 16 and above 16 per cent. Districts falling under the above groups are shaded suitably in black.

In the State, 416,318 persons are categorized as constituting total urban workers, out of whom 48,856 persons are engaged in construction, transport and communications, forming 11·73 per cent. Sundargarh has the highest percentage of workers (16·36) engaged in these activities in urban areas of the district. The lowest percentage of workers (4·9) is noticeable in Baudh-Khondmals. The north-western border districts of Keonjhar (15·44), Sundargarh (16·36) and Sambalpur (15·65) show a higher percentage than other districts.

The following statement gives the percentage of workers engaged in the concerned activities in the districts during 1961 :

District	Percentage
Sundargarh	16·36
Sambalpur	15·65
Keonjhar	15·44
Puri	13·93
Cuttack	12·20
State Average	11·73
Bolangir	11·05
Koraput	8·00
Ganjam	7·85
Kalahandi	6·89
Balasore	6·30
Dhenkanal	5·77
Mayurbhanj	5·57
Baudh-Khondmals	4·87


MAP No. 100
ORISSA
DENSITY OF RAILWAYS 1961
(KILOMETRES OF RAILWAYS PER 10,000 SQ. KILOMETRES OF AREA)
Miles
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Rourkela
Sambalpur
Bolangir
Titlagarh
Rayagada
Gunupur
Berhampur
Baripada
Jalesswar
Balasore
Bhadrak
Cuttack
Bhubaneswar
Puri
Kilometres of Railways per 10,000 Sq. Kms.
0-10 kms
10-20 kms
20-30 kms
30-40 kms
40-50 kms
50-60 kms
Above 60 kms
Isopleths are drawn at an interval of 10 kms

MAP No. 100

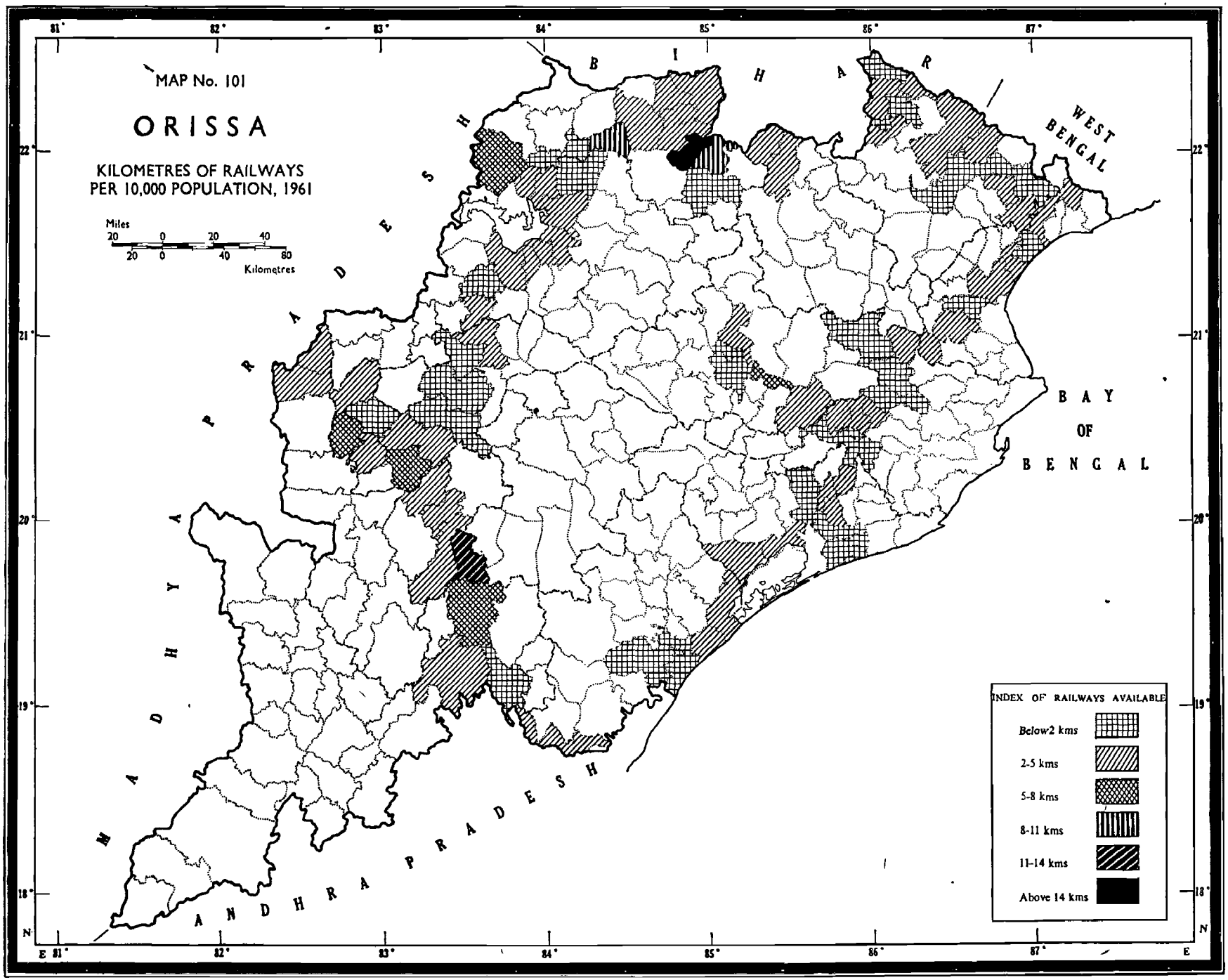
DENSITY OF RAILWAYS, 1961

(KILOMETRES OF RAILWAYS PER 10,000 SQ. KMS OF AREA)

The map displays the density of railways in the State in 1961. In other words, the length of railways in kilometres per 10,000 sq. kms of area is shown in it.

The railway map of the State is imposed upon a grid with squares of 10,000 sq. kms, each side of the square being 100 kms. The length of railways in each square is measured in kms by a rotametre and the length thus obtained is plotted in the heart of each square. The grids are erased and isopleths are drawn at intervals of 10 kms running from 0 to 10, 10 to 20, 20 to 30, 30 to 40, 40 to 50, 50 to 60 and above 60 kms. The areas in between the isopleths are hatched by suitable shades, while the regions without any length of railways are left unshaded.

A glance at the map indicates that there are five patches showing very high density of railways. The regions surrounding Khurda (62 kms), Rourkela (86 kms), Jharsuguda (65 kms), Rupsa (65 kms) and Titlagarh (68 kms) have such high density. The interior of Orissa forms a big patch extending from north-east to south-west showing no railways at all.

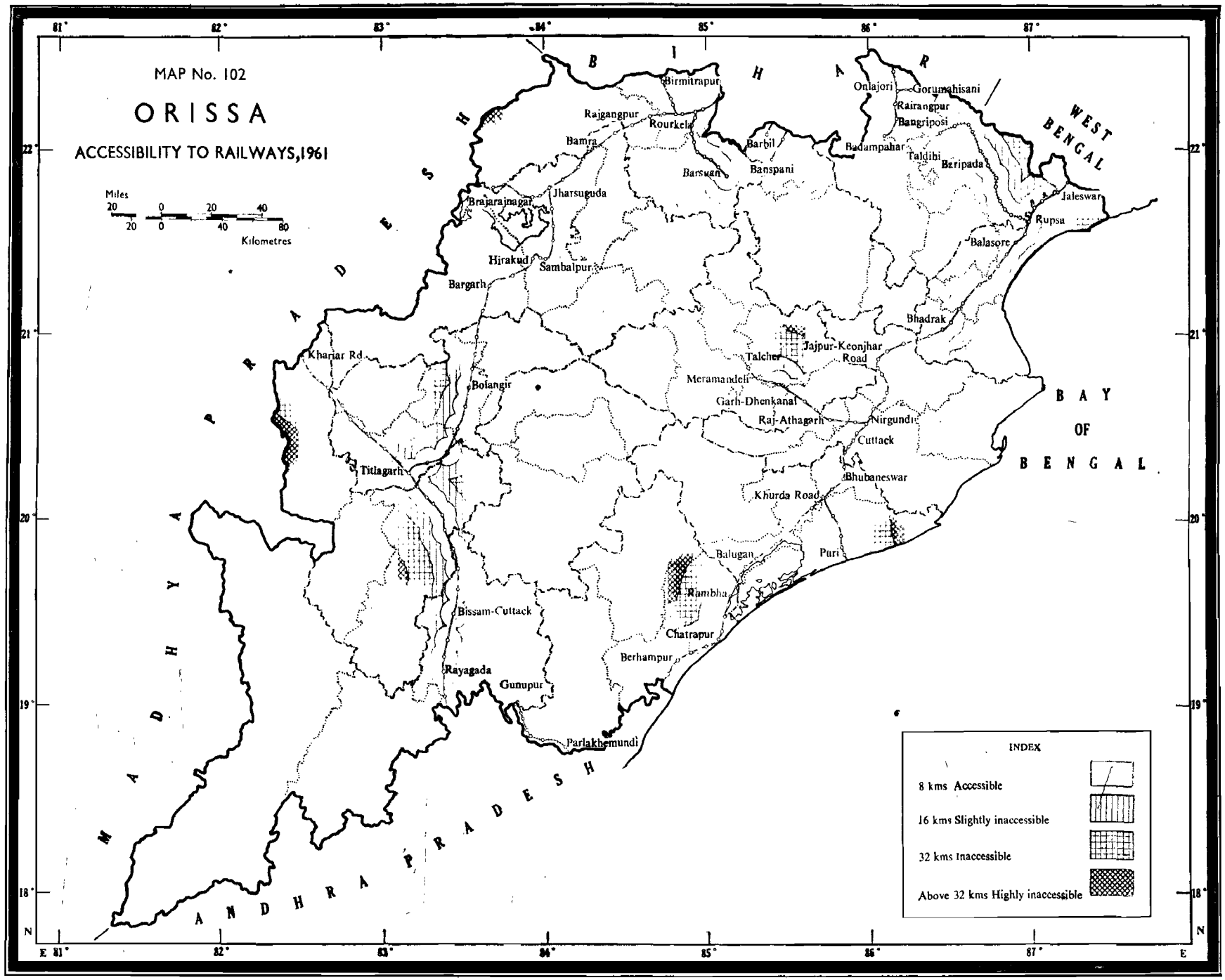

MAP No. 101
ORISSA
KILOMETRES OF RAILWAYS
PER 10,000 POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
INDEX OF RAILWAYS AVAILABLE
Below2 kms
2-5 kms
5-8 kms
8-11 kms
11-14 kms
Above 14 kms
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 101

KILOMETRES OF RAILWAYS PER 10,000 POPULATION, 1961

Length of railways, available to every 10,000 of population in the police stations of the State during 1961 is depicted in this map. The total length of railways in the State is 1,489 kilometres for the benefit of a population of 17,548,846 in the State. The average works out to 0.85 km per 10,000 population. The extent of railways available in each police station has been determined in relation to every 10,000 population. The result has been arranged in six groups, viz., below 2 kms, 2 to 5, 5 to 8, 8 to 11, 11 to 14 and above 14 kilometres. Police stations are accordingly shaded in black.

Baudh-Khondmals is the only district without any length of railways. The police stations which are not shaded in the map do not have railways. Banki PS in Sundargarh district has the biggest share of railways (15·29 kms) per 10,000 of population, while Nuagam in Ganjam district has the shortest length, namely, 0·37 km only.

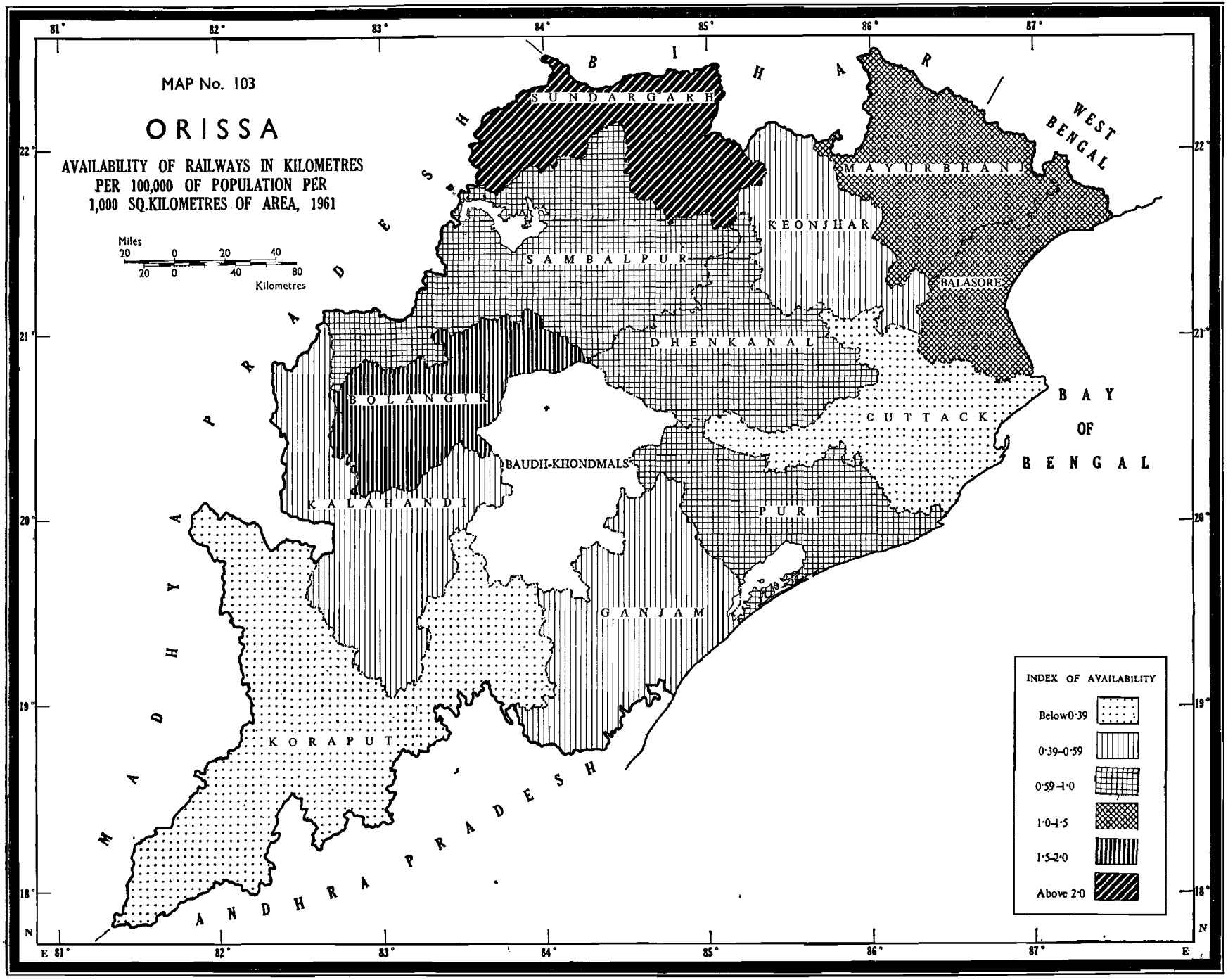

MAP No. 102
ORISSA
ACCESSIBILITY TO RAILWAYS,1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
Onjajori
Gorumahisani
Rairangpur
Bangriposi
Rajgangpur
Rourkela
Barbil
Badampahar
Taldihi
Baripada
Bamra
Barsuan
Banspani
Jaleswar
Brajarajnagar
Jharsuguda
Rupsa
Balasore
Hirakud
Sambalpur
Bargarh
Bhadrak
Jajpur-Keonjhar Road
Talcher
Kharlar Rd
Meramandeli
Bolangir
Garh-Dhenkanal
Raj-Athagarh
Nirgundi
Cuttack
Titlagarh
Bhubaneswar
Khurda Road
Balugan
Puri
Rambha
Bissam-Cuttack
Chatrapur
Berhampur
Rayagada
Gunupur
Parlakhemundi
INDEX
8 kms Accessible
16 kms Slightly inaccessible
32 kms Inaccessible
Above 32 kms Highly inaccessible

MAP No. 102

ACCESSIBILITY TO RAILWAYS, 1961

The map displays the accessibility of regions to railways in the State. Railway map of the State is drawn showing all the stations. From each station, arcs with radii of 8 kms, 16 kms and 32 kms are drawn. These arcs are joined serially. In this manner, three successive curved lines running more or less parallel with the railways are obtained delineating areas easily accessible, slightly inaccessible, highly inaccessible and very highly inaccessible to the railways. The inaccessible areas are hatched from low to very high in suitable shades.

A glance at the map will show that the coastal regions are more or less accessible to the railways. The eastern and nothern borders and portions of Sambalpur, Bolangir, Kalahandi and Koraput are also accessible to some extent. There are big patches of very highly inaccessible regions in the central and southern parts of the State covering the entire district of Baudh-Khondmals and its surroundings, as well as the southern extremity of Koraput district comprising Malkangiri subdivision.


MAP No. 103
ORISSA
AVAILABILITY OF RAILWAYS IN KILOMETRES PER 100,000 OF POPULATION PER 1,000 SQ.KILOMETRES OF AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E 81° 82° 83° 84° 85° 86° 87° E
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
DHENKANAL
BOLANGIR
CUTTACK
BAUDH-KHONDMALS
KALAHANDI
PURI
GANJAM
KORAPUT
INDEX OF AVAILABILITY
Below 0·39
0·39–0·59
0·59–1·0
1·0–1·5
1·5–2·0
Above 2·0

MAP No. 103

AVAILABILITY OF RAILWAYS IN KILOMETRES PER 100,000 OF POPULATION PER 1,000 SQ. KMS OF AREA, 1961

This map demonstrates the availability of railways for every 100,000 of population per 1,000 sq. kms of area in the districts of Orissa in 1961. The availability of railways in each district was worked out by using an index combining two elements of population and area according to the following formula:

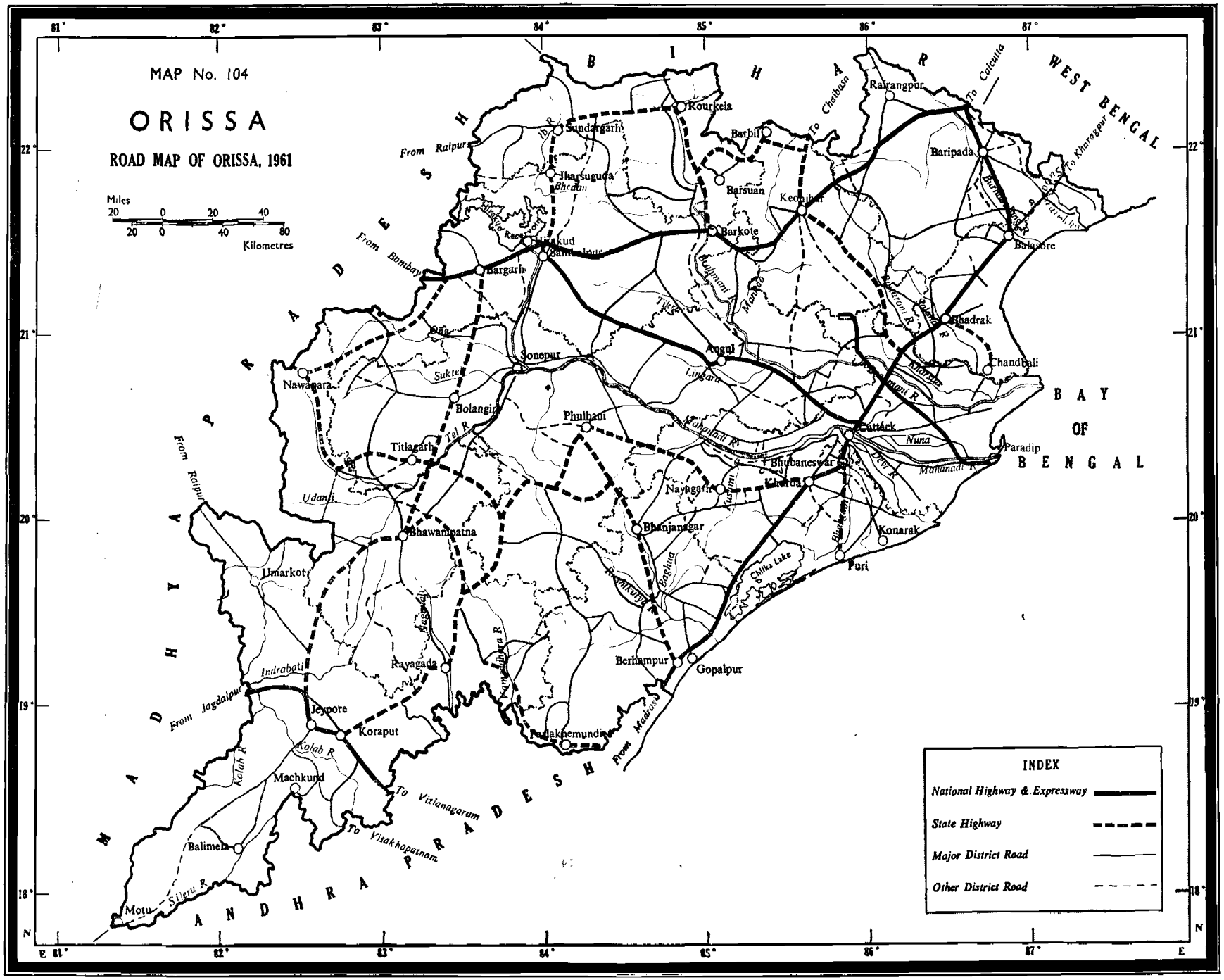
$$\text{Index} = \frac{\text{Kms of surfaced railways} \times 1{,}000 \times 100{,}000}{\text{Area in sq. kms} \times \text{Population}}$$

The indices thus obtained are grouped into six ranges, viz., below 0·39, 0·39 to 0·59, 0·59 to 1·00, 1·00 to 1·50, 1·50 to 2·00 and above 2·00 kms. The districts have been hatched from low to high corresponding to the availability of railways in each district.

There are 1,494 kms of railways in 12 out of 13 districts in the State. Baudh-Khondmals has no railways. Sundargarh has the highest share (2·3 kms) in consideration of its area and population. Bolangir with 1·9 kms is next to Sundargarh. On the other hand, Koraput has the lowest proportion of railways, viz., 0·3 only.

The statement below gives the proportion of railways in each district compared to its population and area respectively:

District	Railways in kms	Area in sq. kms	Population	Index of Availability
Sundargarh	177	9,811	758,617	2·37
Bolangir	184	8,836	1,068,686	1·95
Balasore	134	6,493	1,415,923	1·45
Mayurbhanj	162	10,416	1,204,043	1·29
Puri	140	10,472	1,865,439	0·71
Sambalpur	167	17,520	1,508,686	0·63
Dhenkanal	69	10,945	1,028,935	0·61
Ganjam	124	12,238	1,872,530	0·54
Kalahandi	67	13,098	1,009,654	0·50
Keonjhar	28	8,331	743,315	0·45
Cuttack	127	10,904	3,060,320	0·38
Koraput	110	25,690	1,498,271	0·28
Baudh-Khondmals	...			...


MAP No. 104
ORISSA
ROAD MAP OF ORISSA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
INDEX
National Highway & Expressway
State Highway
Major District Road
Other District Road
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Rourkela
Sundargarh
Jharsuguda
Barbil
Barsuan
Keonjhar
Rairangpur
Baripada
Balasore
Barkote
Bargarh
Sonepur
Bolangir
Nawapara
Titlagarh
Phulbani
Angul
Bhadrak
Chandbali
Cuttack
Paradip
Bhubaneswar
Khurda
Nayagarh
Bhanjanagar
Konarak
Puri
Chilka Lake
Berhampur
Gopalpur
Bhawanipatna
Umarkot
Rayagada
Jeypore
Koraput
Machkund
Balimela
Motu
Padakhemundi
From Raipur
From Bombay
From Jagdalpur
From Madras
To Calcutta
To Chaibasa
To Kharagpur
To Vizianagaram
To Visakhapatnam
Ib R
Tel R
Sukteli
Udanti
Indrabati
Kolab R
Silleru R
Mahanadi R
Nuna
Dava R
Kharsuan R
Baitarani R
Brahmani R
Salandi R
Kushabhadra R
Chilka Lake
Hirakud Reservoir
Balimela Reservoir
22°
21°
20°
19°
18°
81°
82°
83°
84°
85°
86°
87°
N
E

MAP No. 104

ROAD MAP OF ORISSA, 1961

The provision of roads in Orissa is inadequate, although considerable attention has been paid during the first two Plan Periods for improvement and extension of roads with a view to remove the deficiency which existed in the Pre-plan period.

In 1958 there were 14,815 miles of roads in Orissa, or 246 miles of roads per 1,000 sq. miles. In 1963 the total length of all classes of roads increased to 21,391 miles or 355 miles of roads per 1,000 sq. miles.

The density and linear mileage of roads in Orissa is compared with a few countries of the world as follows :

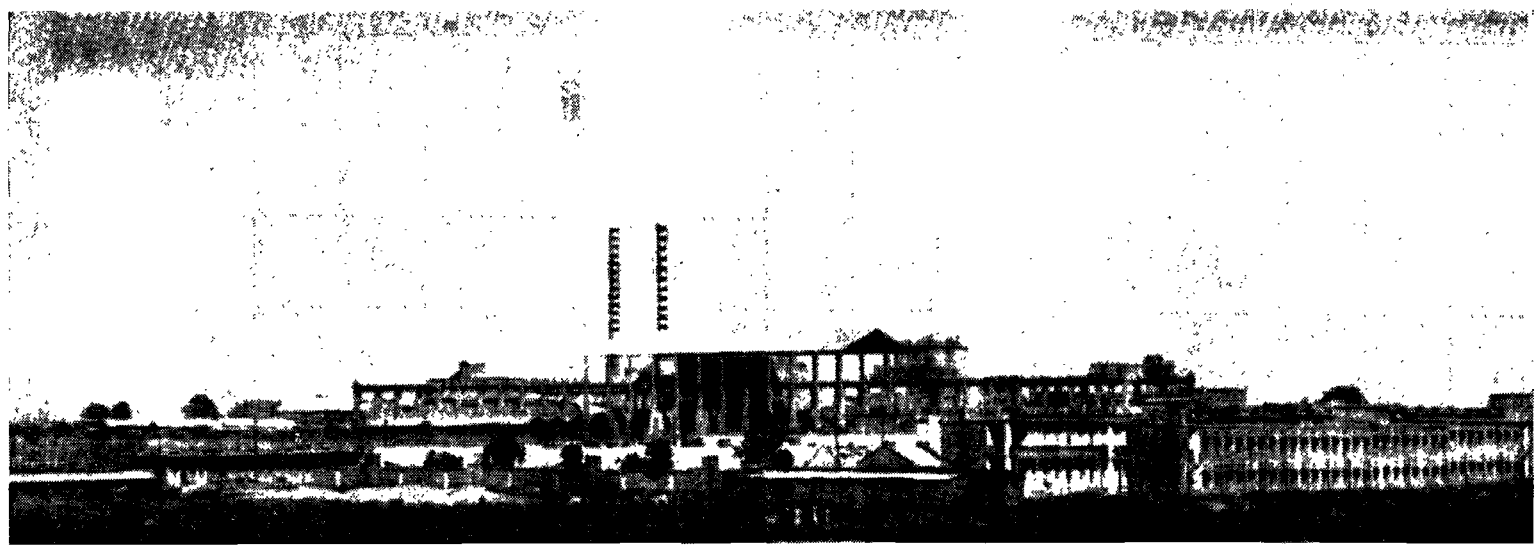
Countries	Population (in million)	Area in sq. miles (in thousand)	Total mileage of roads (in thousand)	Length of roads for 1,000 sq. miles of area	Mileage per 1,000 of population
U. S. A.	179·3	3,615·2	3,546·7	981	19·78
U.K.	45·9	94·2	202·8	2,152	4·42
France	45·5	212·8	945·2	4,441	20·75
Japan	93·3	142·7	597·7	4,188	6·40
India	439·2	1,232·6	440·6	357	1·00
Orissa	17·5	60·2	21·4	355	1·22

The road mileage per 1,000 of population is the lowest in India compared with other countries mentioned in the above statement, while the mileage for Orissa is slightly above the all-India figure. Orissa provides 1·22 linear miles of road per 1,000 of population while India has 1·0 mile only. As compared with India, other countries of the world have large proportions of road for their population, namely, U.K. has over 4 times, Japan over 6 times and U.S.A. and France have each nearly 20 times the proportion of roads in India.

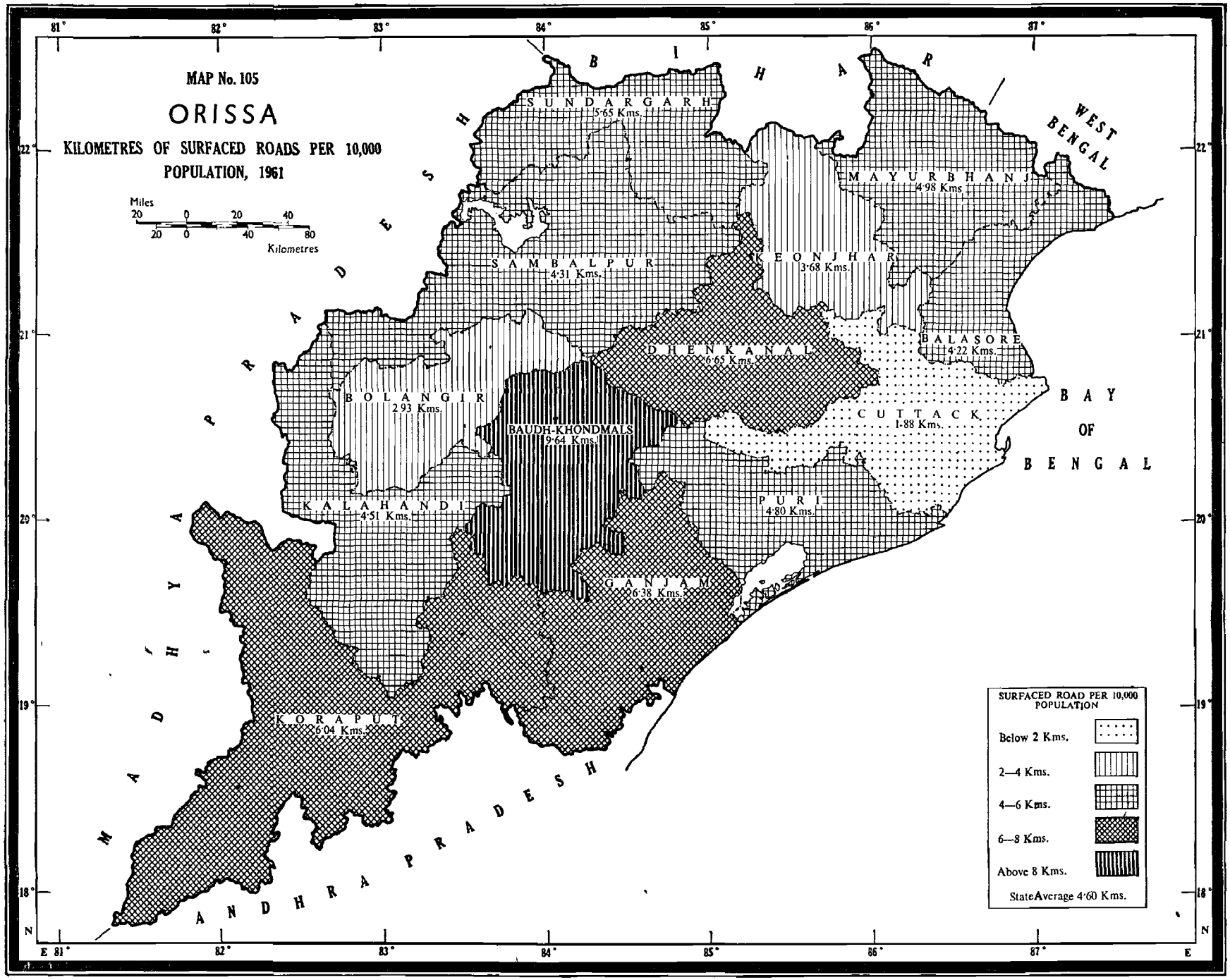
The road mileage in the State and in each district as in 1963 is given in the statement on page 228.

ROAD MILEAGE BY DISTRICTS IN ORISSA

Road	State	Kala-handi	Koraput	Sambal-pur	Bolangir	Baudh-Khond-mals	Ganjam	Sundar-garh	Dhen-kanal	Puri	Keon-jhar	Cuttack	Mayur-bhanj	Balasore
National Highway ...	835	—	99	197	—	—	54	—	109	68	58	73	108	69
State Highway ...	1,435	196	240	136	87	192	110	162	—	121	127	32	—	32
Major District Road ...	3,253	135	211	303	199	201	461	218	230	273	51	401	291	279
Other District Road ...	1,070	15	—	123	19	12	159	15	165	212	1	139	204	6
Roads maintained by local bodies ...	926	17	77	98	59	9	109	38	24	137	50	187	44	77
Important Revenue Road (Village Road) ...	13,872	496	1,928	1,391	193	81	852	7	1,407	1,022	1,468	2,033	2,070	924
Total Roads ...	21,391	859	2,555	2,248	557	495	1,745	440	1,935	1,833	1,755	2,865	2,717	1,387
Total Geographical area of the district ...	60,172	5,057	9,919	6,765	3,412	4,282	4,725	3,788	4,226	4,043	3,216	4,210	4,022	2,507
Density of road mileage per square mile ...	0·36	0·17	0·26	0·33	0·16	0·12	0·37	0·12	0·46	0·45	0·55	0·68	0·68	0·55



CEMENT FACTORY, RAJGANGPUR
(SUNDARGARH DISTRICT)
Production: 1,100 tons of cement per day


MAP No. 105
ORISSA
KILOMETRES OF SURFACED ROADS PER 10,000 POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 5·65 Kms.
SAMBALPUR 4·31 Kms.
KEONJHAR 3·68 Kms.
MAYURBHANJ 4·98 Kms.
BALASORE 4·22 Kms.
DHENKANAL 6·65 Kms.
BOLANGIR 2·93 Kms.
BAUDH-KHONDMALS 9·64 Kms.
CUTTACK 1·88 Kms.
KALAHANDI 4·51 Kms.
PURI 4·80 Kms.
GANJAM 6·38 Kms.
KORAPUT 6·04 Kms.
SURFACED ROAD PER 10,000 POPULATION
Below 2 Kms.
2—4 Kms.
4—6 Kms.
6—8 Kms.
Above 8 Kms.
StateAverage 4·60 Kms.
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 105

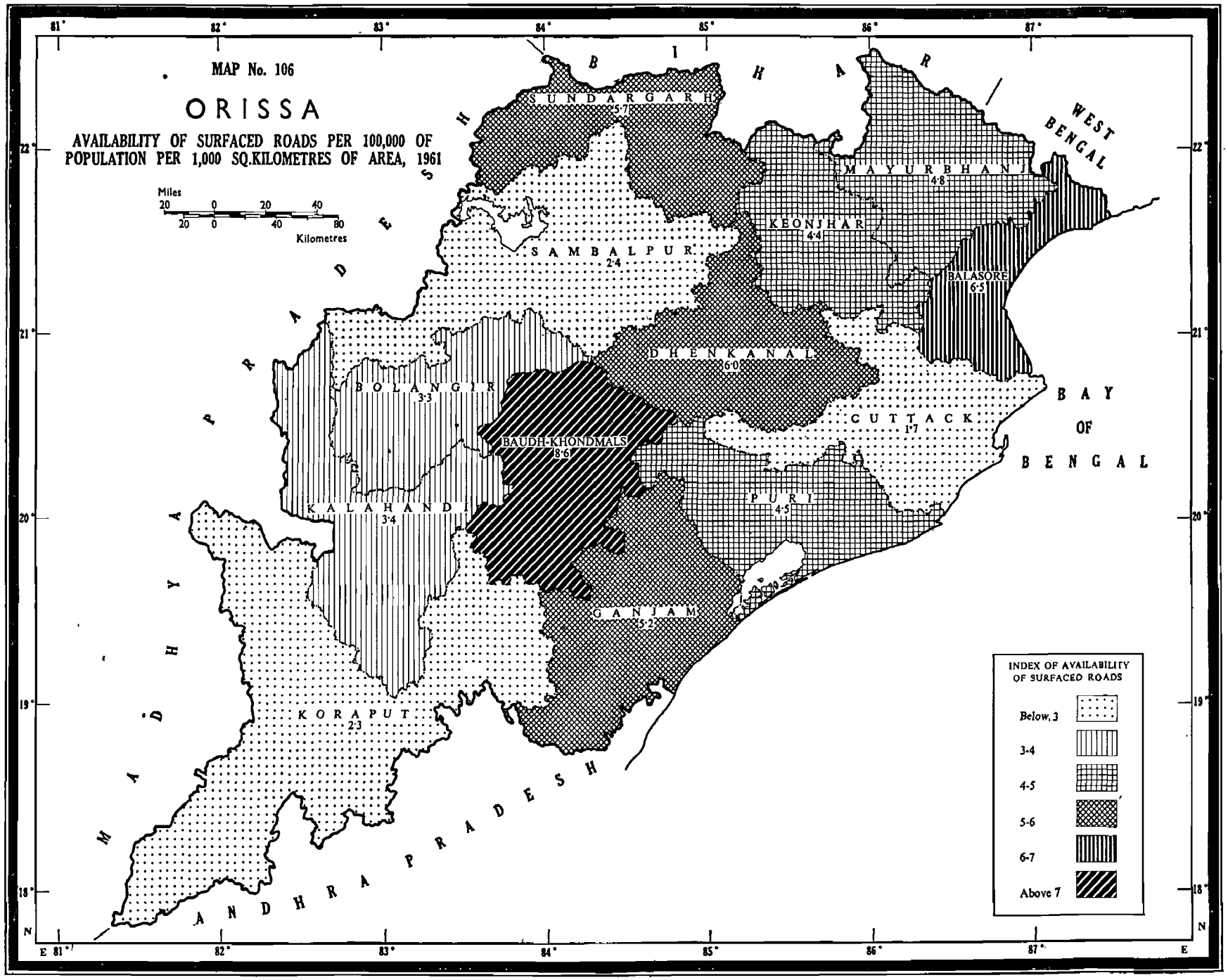
KILOMETRES OF SURFACED ROADS PER 10,000 OF POPULATION, 1961

Road is one of the vital sources of communication. Length of roads expresses the nature of advancement in a country. This map is drawn to show the length of roads in kilometres per 10,000 of population in every district in the State during 1961. The required data are worked out for all the districts and grouped into five ranges, viz., below 2, 2 to 4, 4 to 6, 6 to 8 and above 8 kilometres. Districts are shaded by choropleth method according to the groups assigned.

Overall length of surfaced roads in the State is 8,078 kilometres. The average for every 10,000 of population comes to only 4·60 kms which is poor indeed. Ganjam district has the longest mileage of surfaced roads (1,195 kms) while Keonjhar with 274 kms has the minimum length. But the highest proportion is achieved by Baudh-Khondmals, where it is 9·64 kms per 10,000 of population. Cuttack, on the other hand, has the smallest proportion, namely 1·88 kms only. The proportion in Cuttack is low because of its heavy population. Moreover, the extensive net work of streams and tributaries to the major rivers of the deltaic region is not conducive to the development of road communications.

The following statement gives the length of surfaced roads per 10,000 of population in each district:

District	Kilometres of surfaced roads per 10,000 of population
Baudh-Khondmals	9·64
Dhenkanal	6·65
Ganjam	6·38
Koraput	6·04
Sundargarh	5·65
Mayurbhanj	4·98
Puri	4·80
State Average	4·60
Kalahandi	4·51
Sambalpur	4·31
Balasore	4·22
Keonjhar	3·68
Bolangir	2·93
Cuttack	1·88


MAP No. 106
ORISSA
AVAILABILITY OF SURFACED ROADS PER 100,000 OF POPULATION PER 1,000 SQ.KILOMETRES OF AREA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 5·7
MAYURBHANJ 4·8
KEONJHAR 4·4
SAMBALPUR 2·4
BALASORE 6·5
DHENKANAL 6·0
BOLANGIR 3·3
CUTTACK 1·7
BAUDH-KHONDMALS 8·6
PURI 4·5
KALAHANDI 3·4
GANJAM 5·2
KORAPUT 2·3
INDEX OF AVAILABILITY OF SURFACED ROADS
Below, 3
3-4
4-5
5-6
6-7
Above 7
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 106

AVAILABILITY OF SURFACED ROADS PER 100,000 OF POPULATION PER 1,000 SQ. KILOMETRES OF AREA

Surfaced roads available per 100,000 of population per 1,000 sq. kms of area in the districts of Orissa is demonstrated in this map. To measure this, the following index is adopted, viz.—

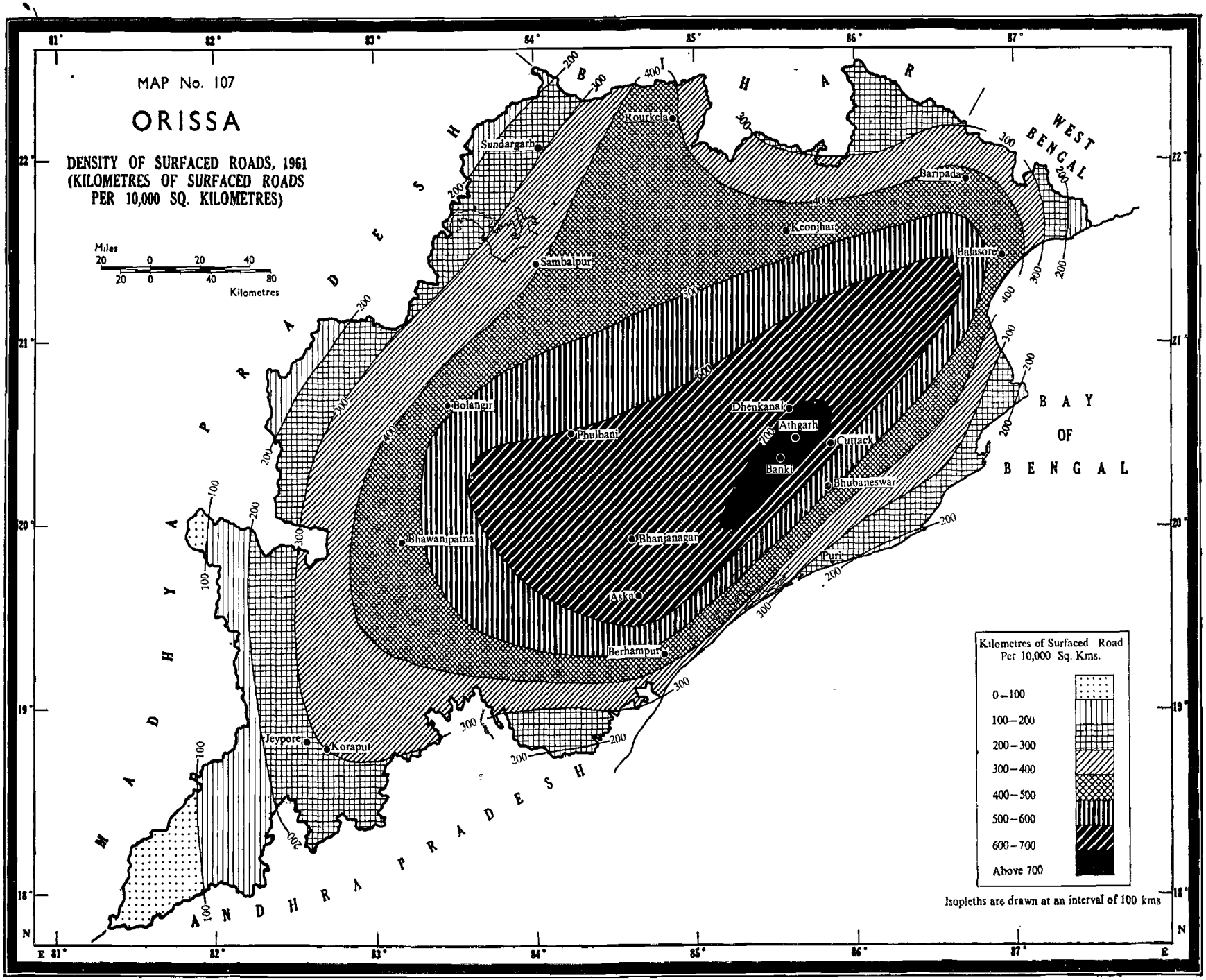
$$\frac{\text{Kilometres of surfaced roads} \times 100{,}000 \times 1{,}000}{\text{Area in sq. kilometres} \times \text{Population}}$$

The result obtained for each district is grouped into six ranges, viz., below 3, 3 to 4, 4 to 5, 5 to 6, 6 to 7 and above 7 kilometres. Districts corresponding to the above groups are hatched in suitable black shades.

The length of surfaced roads in the State is 8,078 kms for a population of 17,548,846 in an area of 155,844·9 sq. kms. Baudh-Khondmals, among the districts, has the largest share of such roads (8·6) available for every 100,000 of population living in 1,000 sq. kms of area. The proportion is high because the population is comparatively low. Cuttack presents the reverse picture with a low proportion of 1·7 resulting from a comparatively heavy population.

The statement below gives the proportion of surfaced roads available to every 100,000 of population in 1,000 sq. kms of area in each district of Orissa :

District	Area in sq. kms	Population 1961	Length of surfaced road (in km)	Index availability of surfaced road per 100,000 of population per 1,000 sq. kms
Kalahandi	13,097·6	1,009,654	456	3·4
Koraput	25,690·1	1,498,271	906	2·3
Sambalpur	17,520·3	1,508,686	651	2·4
Bolangir	8,836·0	1,068,686	314	3·3
Baudh-Khondmals	11,090·4	514,427	496	8·6
Ganjam	12,237·8	1,872,530	1,195	5·2
Sundargarh	9,810·9	758,617	429	5·7
Dhenkanal	10,945·4	1,028,935	685	6·0
Puri	10,472·3	1,865,439	896	4·5
Keonjhar	8,330·7	743,315	274	4·4
Cuttack	10,903·9	3,060,320	578	1·7
Mayurbhanj	10,416·4	1,204,043	600	4·8
Balasore	6,493·1	1,415,923	598	6·5


MAP No. 107
ORISSA
DENSITY OF SURFACED ROADS, 1961
(KILOMETRES OF SURFACED ROADS
PER 10,000 SQ. KILOMETRES)
Miles
20 0 20 40
20 0 40 80
Kilometres
Rourkela
Sundargarh
Baripada
Keonjhar
Balasore
Sambalpur
Bolangir
Dhenkanal
Athgarh
Phulbani
Cuttack
Banki
Bhubaneswar
Bhawanipatna
Bhanjanagar
Puri
Aska
Berhampur
Jeypore
Koraput
BAY OF BENGAL
WEST BENGAL
ORISSA
MADHYA PRADESH
ANDHRA PRADESH
Kilometres of Surfaced Road
Per 10,000 Sq. Kms.
0–100
100–200
200–300
300–400
400–500
500–600
600–700
Above 700
Isopleths are drawn at an interval of 100 kms

MAP No. 107

DENSITY OF SURFACED ROADS, 1961

(Kilometres of surfaced roads per 10,000 of sq. kilometres)

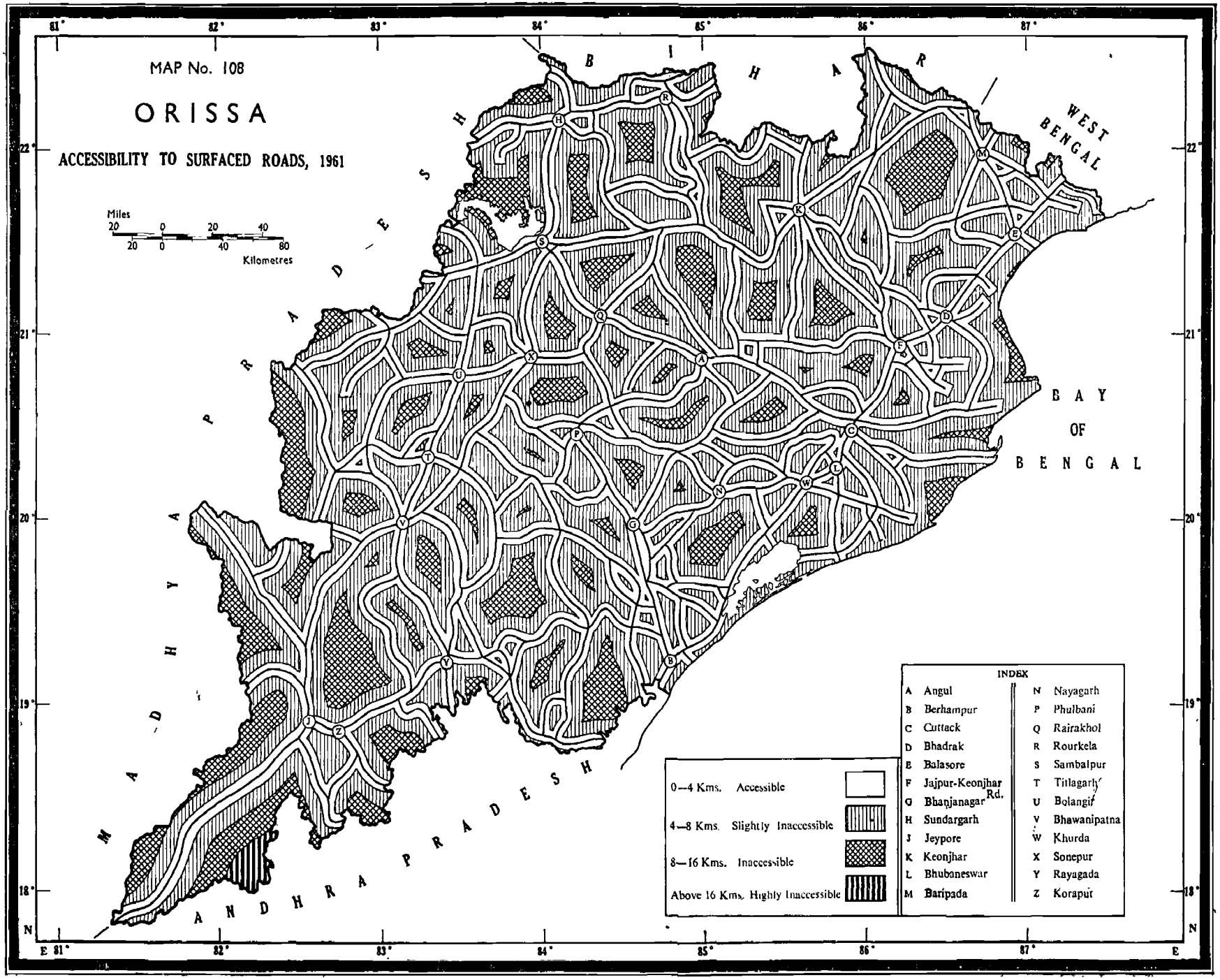
The density of surfaced roads, i.e., the length of roads in kilometres per 10,000 sq. kilometres of area is shown in the map.

The road map of Orissa is imposed upon a grid with squares of 10,000 sq. kilometres, each side of the square being 100 kilometres. The length of roads in each such square is measured in kilometre by a rotametre, and the length thus obtained is plotted in the centre of each square. The grids are erased and isopleths are drawn at intervals of 100 kilometres, starting from 0 and rising to above 700. The areas in between the isopleths are hatched suitably.

The map shows one dark patch of high density of roads between Cuttack and Dhenkanal extending in a south-westerly direction. The locality has a large mileage of various kinds of roads, mostly revenue roads.

With this dark patch at the centre, there are concentric formations of density ranges, descending from high to low till the periphery of the State is reached. This indicates that the extreme border areas of the State are less provided with roads than the areas which are nearer the heart of the State.

Source—Chief Engineer, Roads and Buildings, Orissa

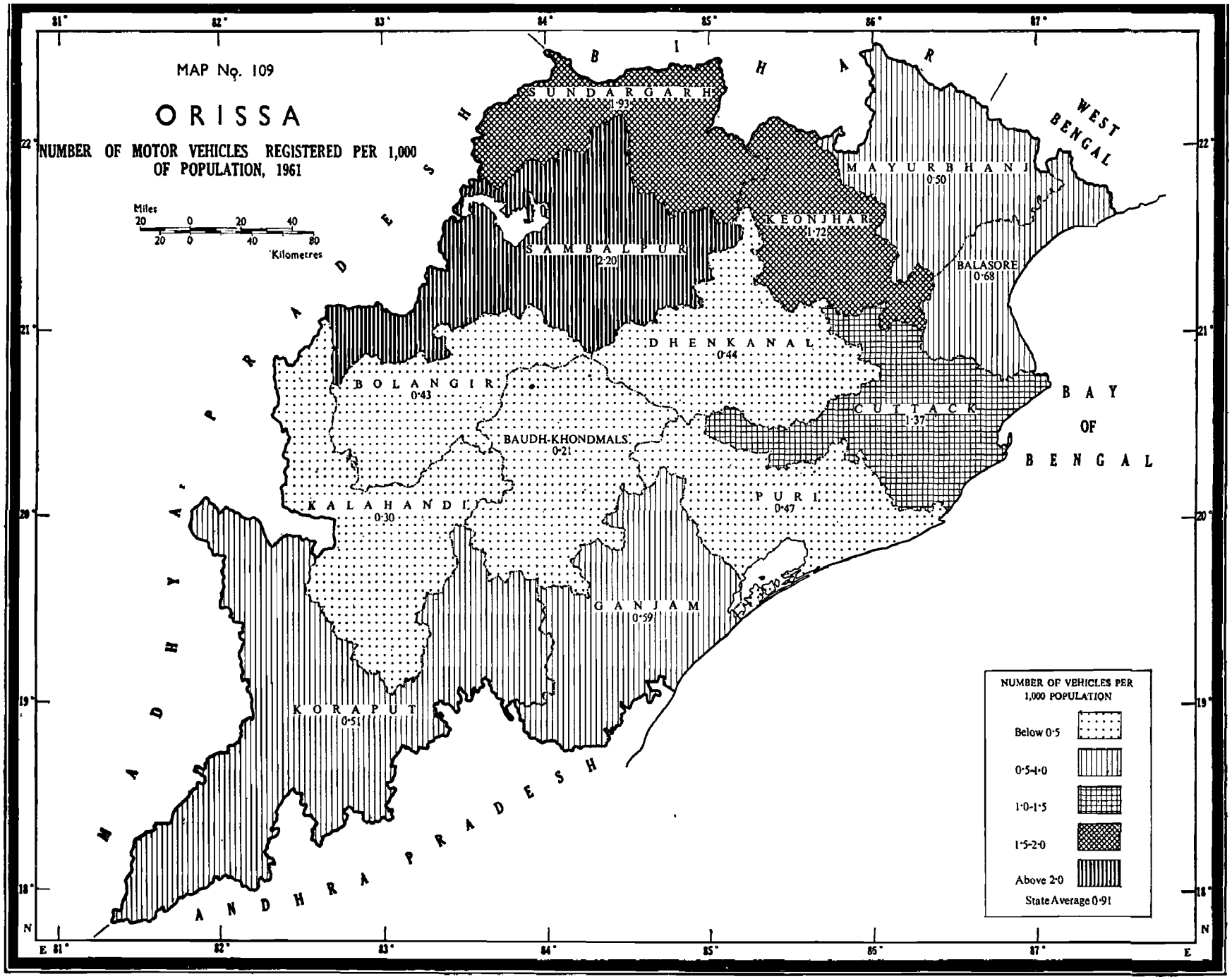

MAP No. 108
ORISSA
ACCESSIBILITY TO SURFACED ROADS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N
0—4 Kms. Accessible
4—8 Kms. Slightly Inaccessible
8—16 Kms. Inaccessible
Above 16 Kms. Highly Inaccessible
INDEX
A Angul
B Berhampur
C Cuttack
D Bhadrak
E Balasore
F Jajpur-Keonjhar Rd.
G Bhanjanagar
H Sundargarh
J Jeypore
K Keonjhar
L Bhubaneswar
M Baripada
N Nayagarh
P Phulbani
Q Rairakhol
R Rourkela
S Sambalpur
T Titlagarh
U Bolangir
V Bhawanipatna
W Khurda
X Sonepur
Y Rayagada
Z Koraput

MAP No. 108

ACCESSIBILITY TO SURFACED ROADS, 1961

The map shows the degree of accessibility of different regions to roads running throughout the State. On the road map of the State, distances of 4 kilometres, 8 kilometres and 16 kilometres from the surfaced roads are marked by parallel lines. These lines delineate areas which are accessible, slightly inaccessible, inaccessible and highly inaccessible to the roads. The inaccessible areas are hatched from light to dark shades as indicated in the legend. Important road junctions have been marked on the map with alphabets A, B, C, etc. These alphabets indicate particular localities or towns as given in the index at the bottom of the map.

The areas which are very much inaccessible are dispersed throughout the State, but large patches appear in Mayurbhanj and Koraput districts.


MAP No. 109
ORISSA
NUMBER OF MOTOR VEHICLES REGISTERED PER 1,000 OF POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 1·93
SAMBALPUR 2·20
KEONJHAR 1·72
MAYURBHANJ 0·50
BALASORE 0·68
DHENKANAL 0·44
CUTTACK 1·37
BOLANGIR 0·43
BAUDH-KHONDMALS 0·21
KALAHANDI 0·30
PURI 0·47
GANJAM 0·59
KORAPUT 0·51
NUMBER OF VEHICLES PER 1,000 POPULATION
Below 0·5
0·5-1·0
1·0-1·5
1·5-2·0
Above 2·0
State Average 0·91
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 109

NUMBER OF MOTOR VEHICLES REGISTERED PER 1,000 OF POPULATION, 1961

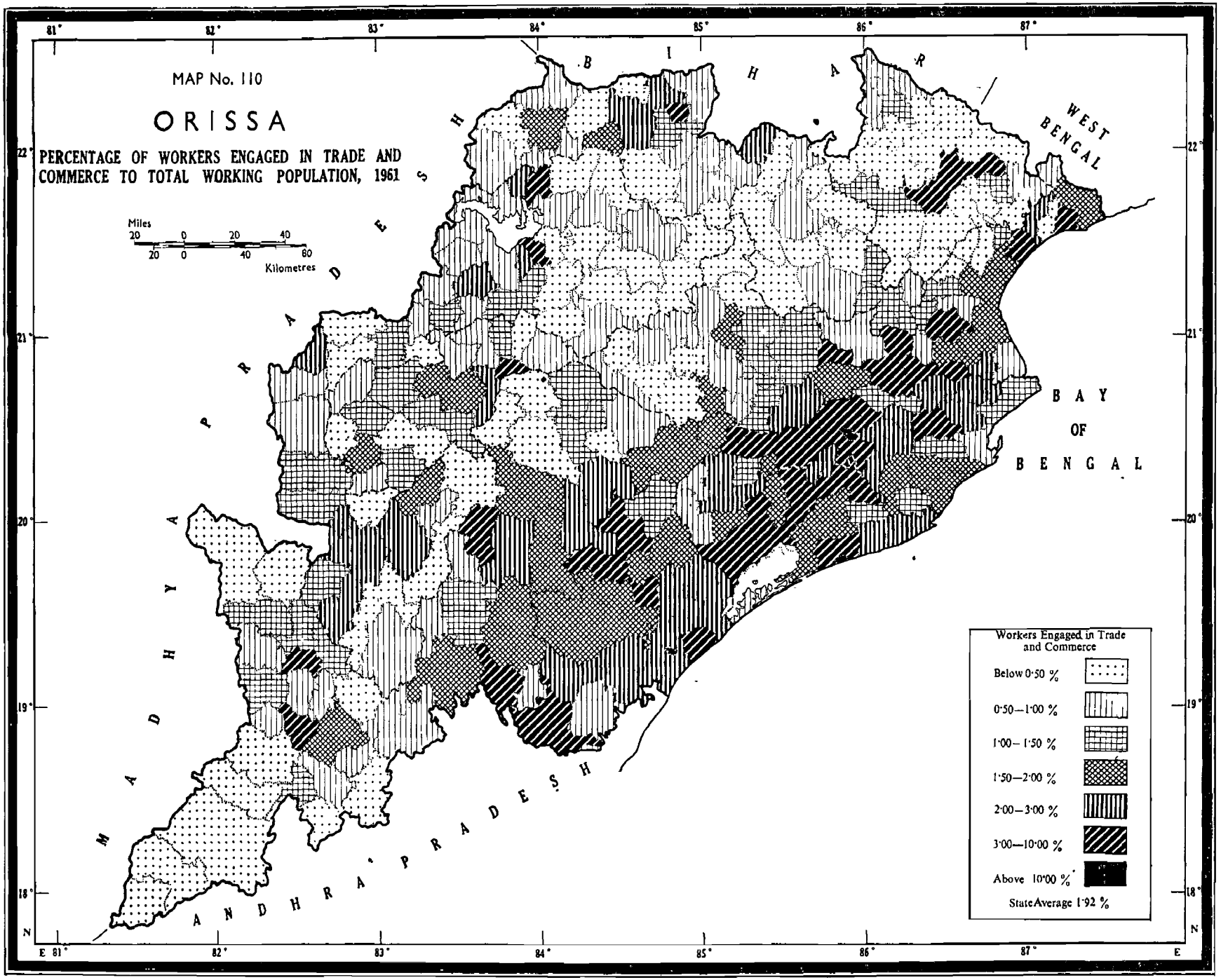
The map depicts the intensity of registration of motor vehicles in each district during 1961 on the basis of the proportion of the number of registered motor vehicles to every 1,000 population. The count of motor vehicles has been confined to cars, taxis, trucks and buses only. The ratio of vehicles calculated is grouped into five ranges, viz., below 0·5, 0·5 to 1·0, 1·0 to 1·5, 1·5 to 2·0 and above 2·0. The districts have been shaded by choropleth method corresponding to their proportion.

There were 15,890 motor vehicles in 1961 in the State which comprised a population of 17,548,846, the proportion for 1,000 being 0·91 only. Cuttack district alone had 4,178 vehicles, the largest number in the State, though the ratio is not the highest as a consequence of heavy population. Sambalpur has a higher proportion of vehicles, namely, 2·2 for every 1,000 population. Baudh-Khondmals, on the other hand, has the lowest, 0·21 only.

The number of motor vehicles and their proportion to 1,000 population in each district is given below:

State/ District	Total No. of vehicles registered	Total population in thousands	Vehicles per 1,000 population
ORISSA	15,890	17,549	0·91
Kalahandi	302	1,010	0·30
Koraput	769	1,498	0·51
Sambalpur	3,314	1,509	2·20
Bolangir	462	1,069	0·43
Baudh-Khondmals	108	514	0·21
Ganjam	1,109	1,873	0·59
Sundargarh	1,468	759	1·93
Dhenkanal	455	1,029	0·44
Puri	869	1,865	0·47
Keonjhar	1,281	743	1·72
Cuttack	4,178	3,060	1·37
Mayurbhanj	609	1,204	0·50
Balasore	960	1,416	0·68

Source—District Superintendents of Police


MAP No. 110
ORISSA
PERCENTAGE OF WORKERS ENGAGED IN TRADE AND COMMERCE TO TOTAL WORKING POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
Workers Engaged in Trade and Commerce
Below 0·50 %
0·50—1·00 %
1·00—1·50 %
1·50—2·00 %
2·00—3·00 %
3·00—10·00 %
Above 10·00 %
State Average 1·92 %

MAP No. 110

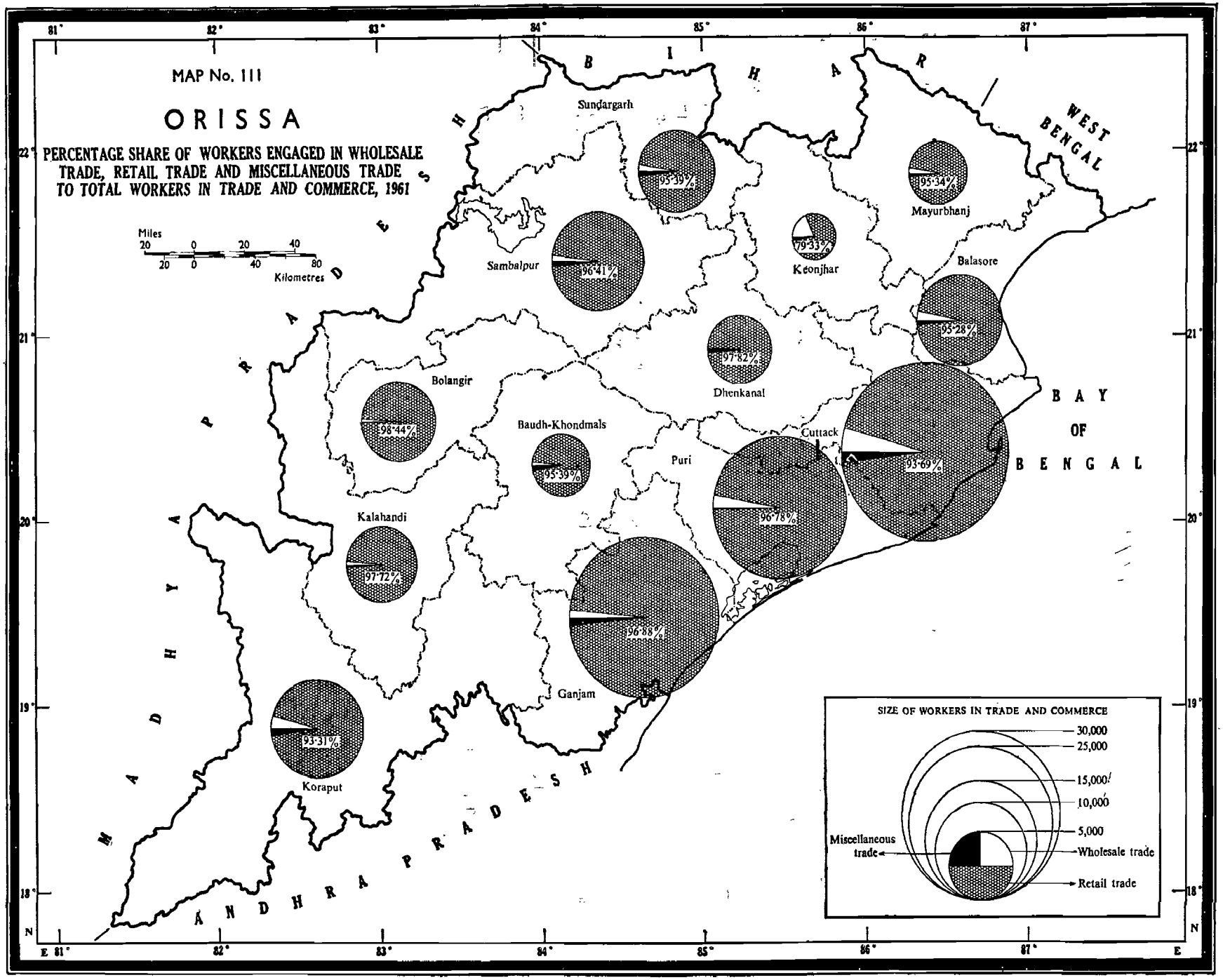
PERCENTAGE OF WORKERS ENGAGED IN TRADE AND COMMERCE TO TOTAL WORKING POPULATION, 1961

The map brings out the percentage of workers engaged in trade and commerce to total working population in the police stations of the State during 1961. The percentages thus obtained for all police stations are grouped into seven ranges, above and below the State Average (1·92%), viz., below 0·50, 0·50 to 1·00, 1·00 to 1·50, 1·50 to 2·00, 2·00 to 3·00, 3·00 to 10·00 and above 10·00 per cent. The police stations are shaded by choropleth method corresponding to their percentage groups.

The total number of workers in the State is 7,661,529, while the number engaged in trade and commerce is 147,462, giving 1·92 per cent only. A look at the map indicates that the coastal districts of Balasore, Cuttack, Puri and Ganjam have a higher percentage of workers in trade and commerce, compared to others. Berhampur, Puri and Cuttack Town police stations have the highest percentage, in order, viz., 17·25, 15·84 and 13·22 respectively. The police station having the lowest or no percentage is Purunakote in Dhenkanal district. Besides this, the police stations of Baria (0·046%), Kanjipani (0·052%) in Keonjhar, Mahulpada (0·049%) in Sundargarh, Pottangi (0·053%) in Koraput and Sarat (0·029%) in Mayurbhanj have an insignificant proportion of workers engaged in trade and commerce.

The following statement gives the percentage of workers engaged in trade and commerce to the total working population in different districts in 1961 :

District	Percentage
Mayurbhanj	0·67
Keonjhar	0·69
Dhenkanal	1·17
Koraput	1·29
Sambalpur	1·30
Bolangir	1·31
Kalahandi	1·32
Baudh-Khondmals	1·43
Sundargarh	1·83
State Average	1·92
Balasore	1·97
Ganjam	2·99
Cuttack	3·30
Puri	3·33


MAP No. 111
ORISSA
PERCENTAGE SHARE OF WORKERS ENGAGED IN WHOLESALE TRADE, RETAIL TRADE AND MISCELLANEOUS TRADE TO TOTAL WORKERS IN TRADE AND COMMERCE, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
Sundargarh
95·39%
Mayurbhanj
95·34%
WEST BENGAL
Sambalpur
96·41%
Keonjhar
79·33%
Balasore
95·28%
Dhenkanal
97·82%
Bolangir
98·44%
Baudh-Khondmals
95·39%
Cuttack
93·69%
Puri
96·78%
BAY OF BENGAL
Kalahandi
97·72%
Ganjam
96·88%
Koraput
93·31%
ORISSA
BIHAR
MADHYA PRADESH
ANDHRA PRADESH
SIZE OF WORKERS IN TRADE AND COMMERCE
30,000
25,000
15,000
10,000
5,000
Miscellaneous trade
Wholesale trade
Retail trade

MAP No. 111

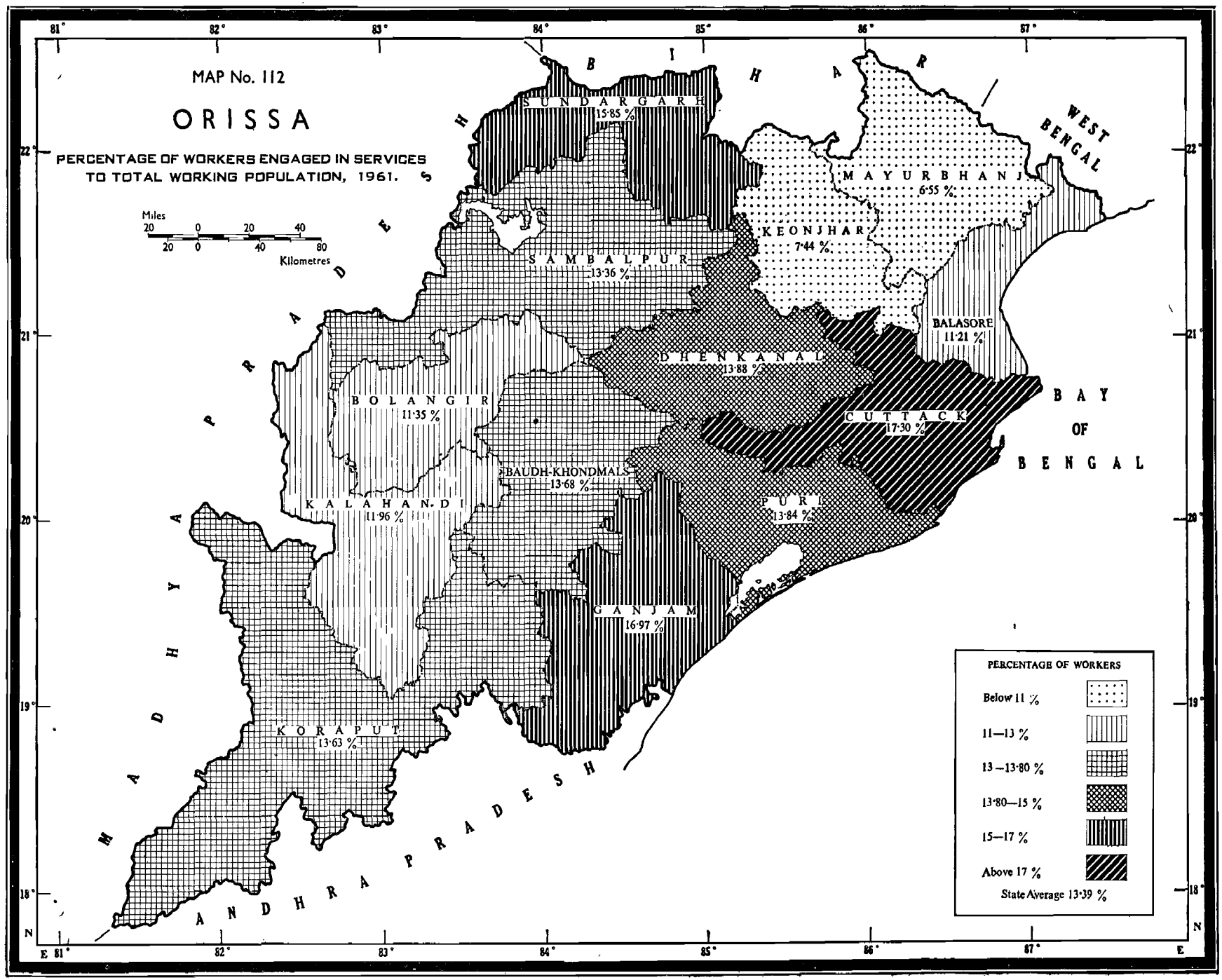
PERCENTAGE SHARE OF WORKERS ENGAGED IN WHOLESALE TRADE, RETAIL TRADE AND MISCELLANEOUS TRADE TO TOTAL WORKERS IN TRADE AND COMMERCE

The previous map displayed the percentage of workers engaged in trade and commerce to the total working population, whereas this map is intended to show the percentage engaged in wholesale, retail and miscellaneous trades to total workers in trade and commerce. The proportion of workers in trade and commerce in each district is shown by proportionate pie-graphs, while the percentage of workers engaged in wholesale, retail and miscellaneous trades is shown by proportionate sectors carved out in each circle.

The number of workers engaged in trade and commerce is 147,462. The number engaged in wholesale, retail and miscellaneous trades is 4,447, 140,777 and 2,238 or 3·01 per cent, 95·47 per cent and 1·52 per cent respectively. Cuttack has the largest number of workers in trade and commerce, viz., 33,281. Keonjhar, on the other hand, has the smallest number (2,317) engaged in trade and commerce.

The statement below gives the percentage share of workers engaged in different trades in the districts of Orissa :

State/ District	Percentage of workers engaged in		
	Wholesale trade	Retail trade	Miscellaneous trade
ORISSA	3·01	95·47	1·52
Kalahandi	1·35	97·72	0·93
Koraput	4·23	93·31	2·46
Sambalpur	1·98	96·41	1·61
Bolangir	1·26	98·44	0·30
Baudh-Khondmals	1·69	95·39	2·92
Ganjam	1·57	96·88	1·55
Sundargarh	2·66	95·39	1·95
Dhenkanal	0·52	97·82	1·66
Puri	2·94	96·78	0·28
Keonjhar	18·69	79·33	1·98
Cuttack	4·33	93·69	1·98
Mayurbhanj	2·82	95·34	1·84
Balasore	3·27	95·28	1·45


MAP No. 112
ORISSA
PERCENTAGE OF WORKERS ENGAGED IN SERVICES TO TOTAL WORKING POPULATION, 1961.
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 15·85 %
SAMBALPUR 13·36 %
MAYURBHANJ 6·55 %
KEONJHAR 7·44 %
BALASORE 11·21 %
DHENKANAL 13·88 %
CUTTACK 17·30 %
BOLANGIR 11·35 %
BAUDH-KHONDMALS 13·68 %
KALAHANDI 11·96 %
PURI 13·84 %
GANJAM 16·97 %
KORAPUT 13·63 %
PERCENTAGE OF WORKERS
Below 11 %
11—13 %
13—13·80 %
13·80—15 %
15—17 %
Above 17 %
State Average 13·39 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 112

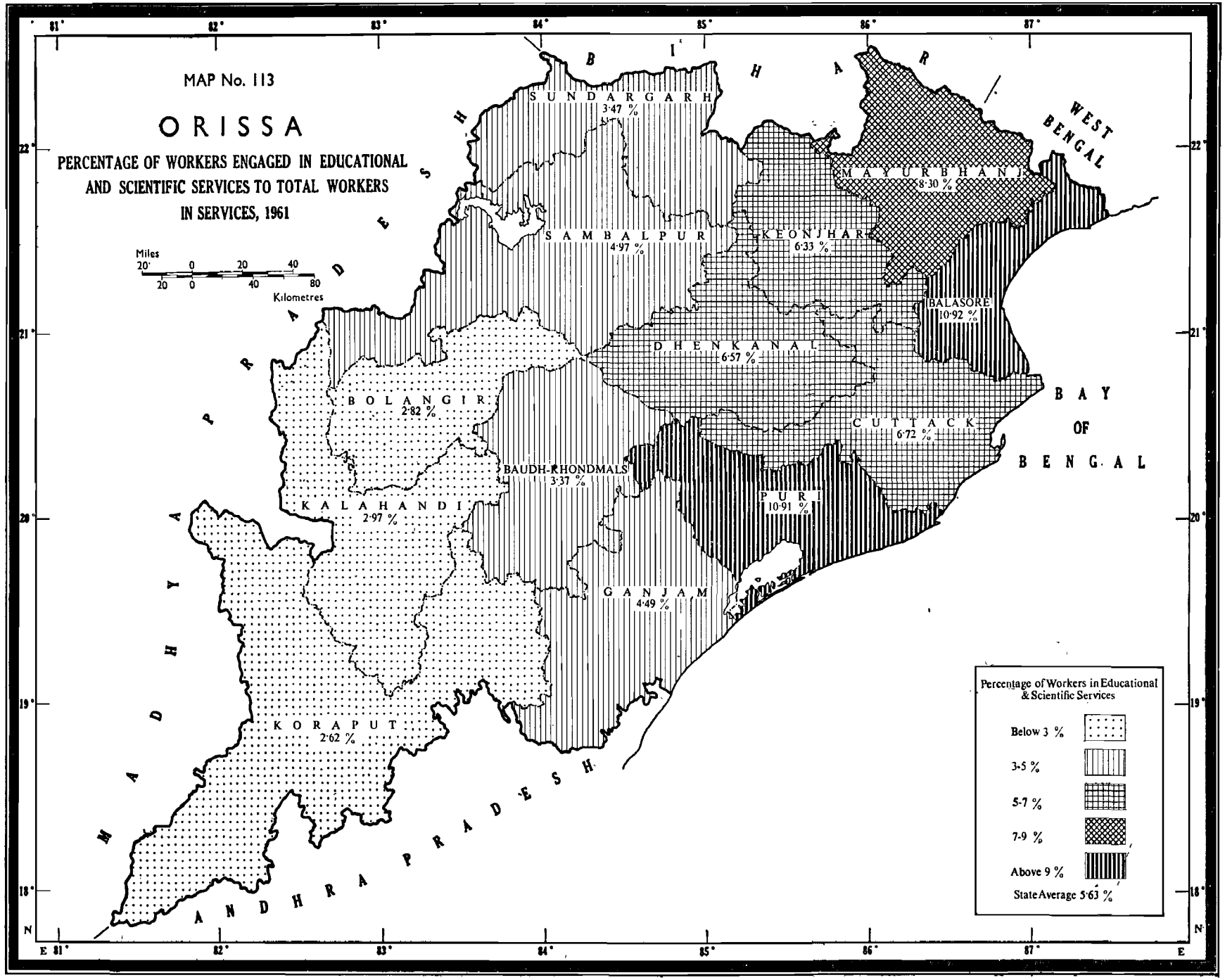
PERCENTAGE OF WORKERS ENGAGED IN SERVICES TO TOTAL WORKING POPULATION, 1961

The map displays the proportion of workers engaged in services to total working population in the districts during 1961. The proportion is measured in percentage for the districts separately and grouped into six ranges, viz., below 11·00, 11·00 to 13·00, 13·00 to 13·80, 13·80 to 15·00, 15·00 to 17·00 and above 17·00 per cent. Districts coming under the above groups are hatched in black from low to high.

The strength of working population in the State is 7,661,529 of whom 1,025,968 persons are actively engaged in services, the percentage being 13·39. The largest number and percentage of workers is seen in Cuttack district with 174,285 persons and 17·30 per cent respectively. Mayurbhanj, on the other hand, has the smallest percentage, viz., 6·55 only. But the poorest number of workers engaged in services is found in Keonjhar district with 24,921 persons only.

The following statement gives the percentage of workers engaged in services in the districts during 1961 :

District	Percentage
Cuttack	17·30
Ganjam	16·97
Sundargarh	15·85
Dhenkanal	13·88
Puri	13·84
Baudh-Khondmals	13·68
Koraput	13·63
State Average	13·39
Sambalpur	13·36
Kalahandi	11·96
Bolangir	11·35
Balasore	11·21
Keonjhar	7·44
Mayurbanj	6·55


MAP No. 113
ORISSA
PERCENTAGE OF WORKERS ENGAGED IN EDUCATIONAL AND SCIENTIFIC SERVICES TO TOTAL WORKERS IN SERVICES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH 3·47 %
SAMBALPUR 4·97 %
KEONJHAR 6·33 %
MAYURBHANJ 8·30 %
BALASORE 10·92 %
DHENKANAL 6·57 %
CUTTACK 6·72 %
PURI 10·91 %
BOLANGIR 2·82 %
BAUDH-KHONDMALS 3·37 %
KALAHANDI 2·97 %
GANJAM 4·49 %
KORAPUT 2·62 %
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Percentage of Workers in Educational & Scientific Services
Below 3 %
3-5 %
5-7 %
7-9 %
Above 9 %
State Average 5·63 %

MAP No. 113

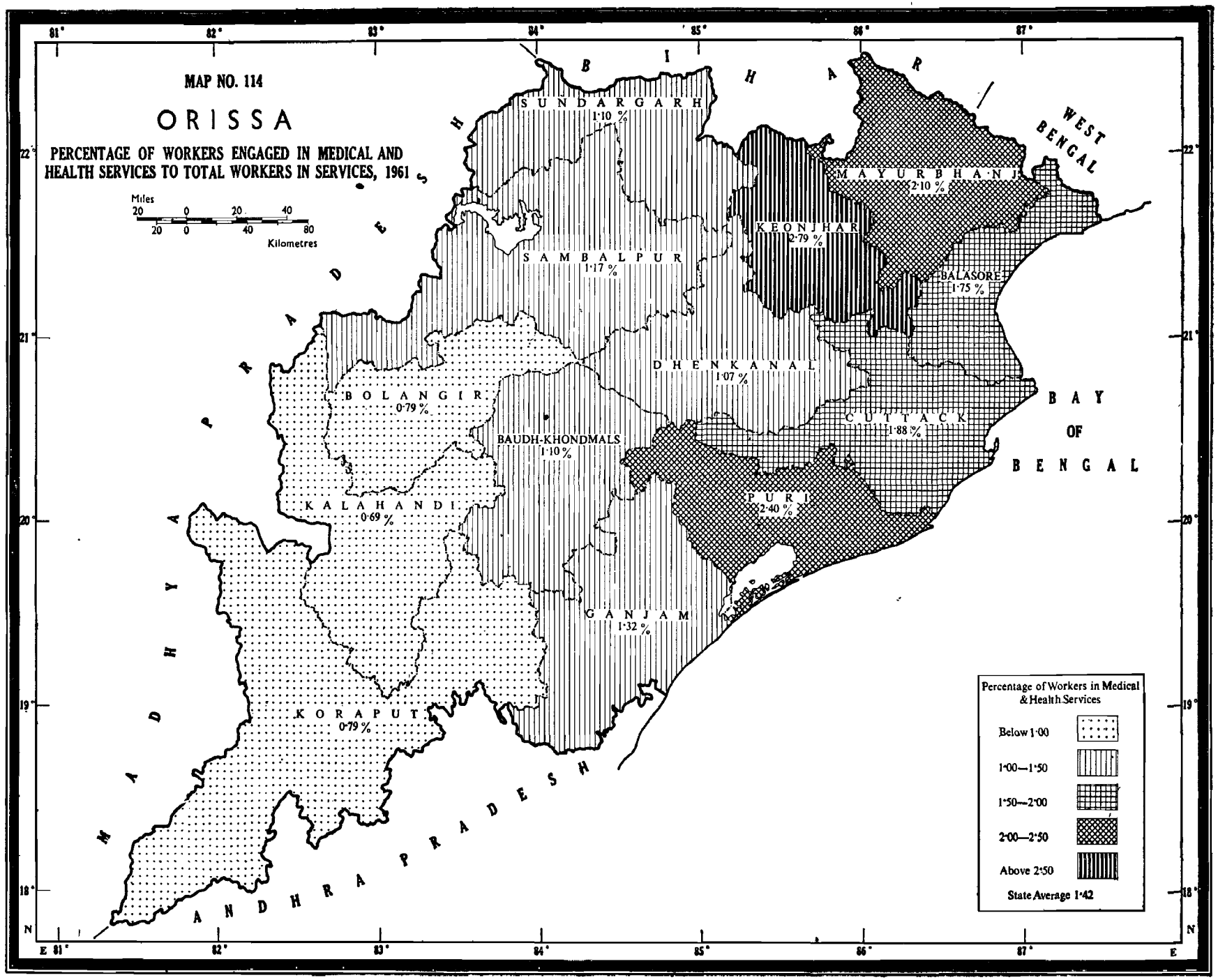
PERCENTAGE OF WORKERS ENGAGED IN EDUCATIONAL AND SCIENTIFIC SERVICES TO TOTAL WORKERS IN SERVICES, 1961

This map brings out the proportion of workers engaged in educational and scientific services to total workers in services. The proportion has been calculated in percentage for every district during 1961 and grouped into five ranges, viz., below 3, 3 to 5, 5 to 7, 7 to 9 and above 9 per cent. Districts are shaded in black corresponding to their percentage share.

In Orissa there are 1,014,728 persons engaged in services. And out of this, the number under educational and scientific services is 57,094, the percentage being 5·63 only. Balasore and Puri districts claim to have 10·92 per cent and 10·91 per cent of workers busy in scientific and educational services. Cuttack with only 6·72 per cent has the largest number (11,559) of workers under the above services. The minimum percentage is noticeable in Koraput (2·62).

The percentage of workers engaged in scientific and educational services to total workers in services in the districts is given below :

District	Percentage
Balasore	10·92
Puri	10·91
Mayurbhanj	8·30
Cuttack	6·72
Dhenkanal	6·57
Keonjhar	6·33
State Average	5·63
Sambalpur	4·97
Ganjam	4·49
Sundargarh	3·47
Baudh-Khondmals	3·37
Kalahandi	2·97
Bolangir	2·82
Koraput	2·62


MAP NO. 114
ORISSA
PERCENTAGE OF WORKERS ENGAGED IN MEDICAL AND HEALTH SERVICES TO TOTAL WORKERS IN SERVICES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 1·10 %
SAMBALPUR 1·17 %
KEONJHAR 2·79 %
MAYURBHANJ 2·10 %
BALASORE 1·75 %
DHENKANAL 1·07 %
CUTTACK 1·88 %
PURI 2·40 %
BOLANGIR 0·79 %
BAUDH-KHONDMALS 1·10 %
KALAHANDI 0·69 %
GANJAM 1·32 %
KORAPUT 0·79 %
Percentage of Workers in Medical & Health Services
Below 1·00
1·00—1·50
1·50—2·00
2·00—2·50
Above 2·50
State Average 1·42
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E

MAP No. 114

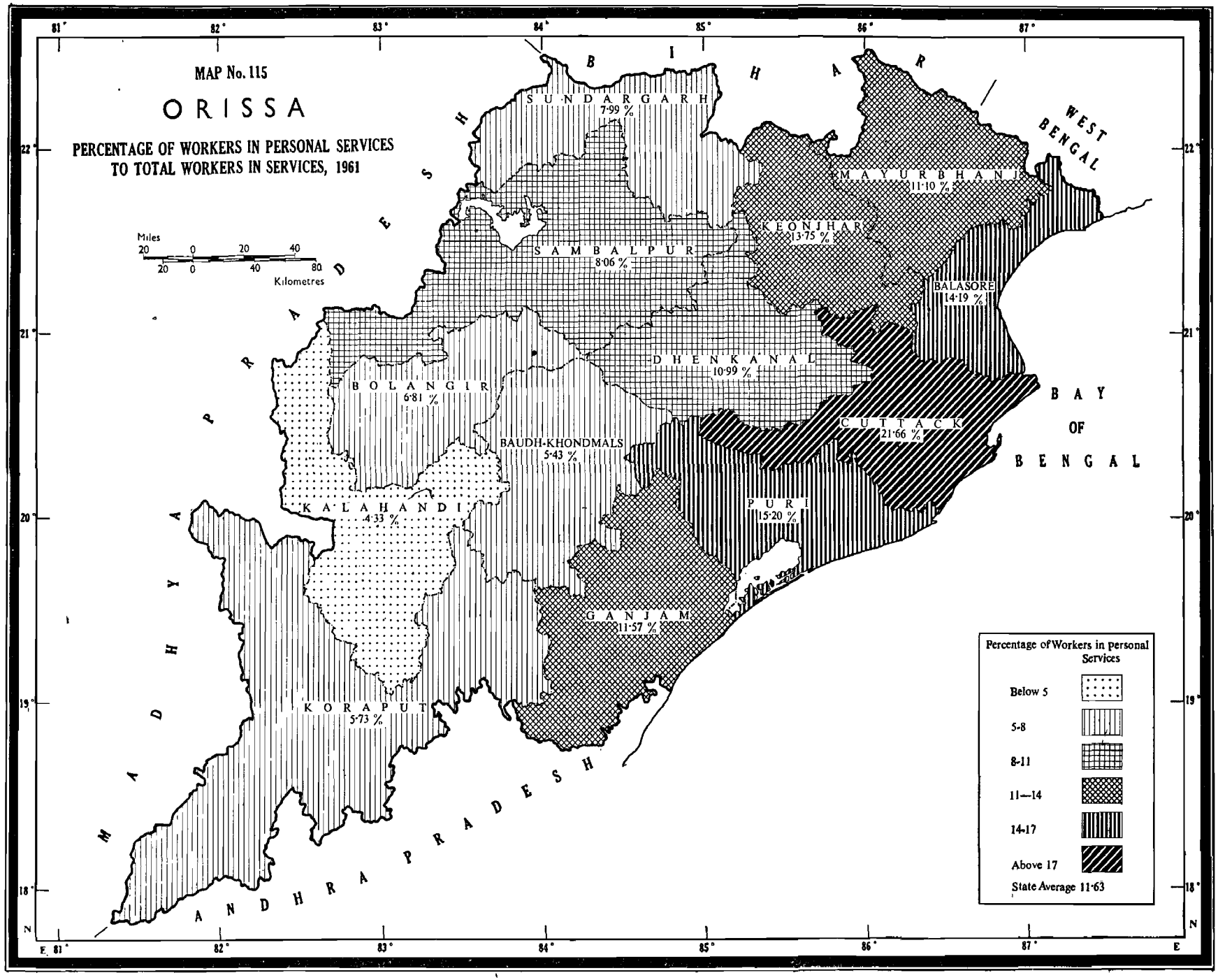
PERCENTAGE OF WORKERS IN MEDICAL AND HEALTH SERVICES TO TOTAL WORKERS IN SERVICES, 1961

This map brings out the percentage of workers in medical and health services to total number in services, while the previous map gave the percentage of workers in educational and scientific services. The proportion is worked out for the districts in percentage and grouped into five ranges, viz., below 1·00, 1·00 to 1·50, 1·50 to 2·00, 2·00 to 2·50 and above 2·50 per cent. Districts falling under the mentioned ranges are differently shaded in black.

Out of a total of 1,014,728 persons, the number engaged in medical and health services is 14,443 or 1·42 per cent, a rather insignificant proportion. Keonjhar has the highest percentage and that too only 2·79, the next being Puri with 2·40 per cent. The lowest proportion is seen in Kalahandi with 0·69 per cent, followed by Koraput and Bolangir, both having 0·79 per cent of workers in the mentioned services.

The percentage engaged in medical and health services to total number in services in the districts is given below:

District	Percentage
Keonjhar	2·79
Puri	2·40
Mayurbhanj	2·10
Cuttack	1·88
Balasore	1·75
State Average	1·42
Ganjam	1·32
Sambalpur	1·17
Baudh-Khondmals	1·10
Sundargarh	1·10
Dhenkanal	1·07
Bolangir	0·79
Koraput	0·79
Kalahandi	0·69


MAP No. 115
ORISSA
PERCENTAGE OF WORKERS IN PERSONAL SERVICES TO TOTAL WORKERS IN SERVICES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 7·99 %
MAYURBHANJ 11·10 %
KEONJHAR 13·75 %
SAMBALPUR 8·06 %
BALASORE 14·19 %
DHENKANAL 10·99 %
BOLANGIR 6·81 %
CUTTACK 21·66 %
BAUDH-KHONDMALS 5·43 %
KALAHANDI 4·33 %
PURI 15·20 %
GANJAM 11·57 %
KORAPUT 5·73 %
Percentage of Workers in personal Services
Below 5
5-8
8-11
11—14
14-17
Above 17
State Average 11·63
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 115

PERCENTAGE OF WORKERS ENGAGED IN PERSONAL SERVICES TO TOTAL WORKERS IN SERVICES, 1961

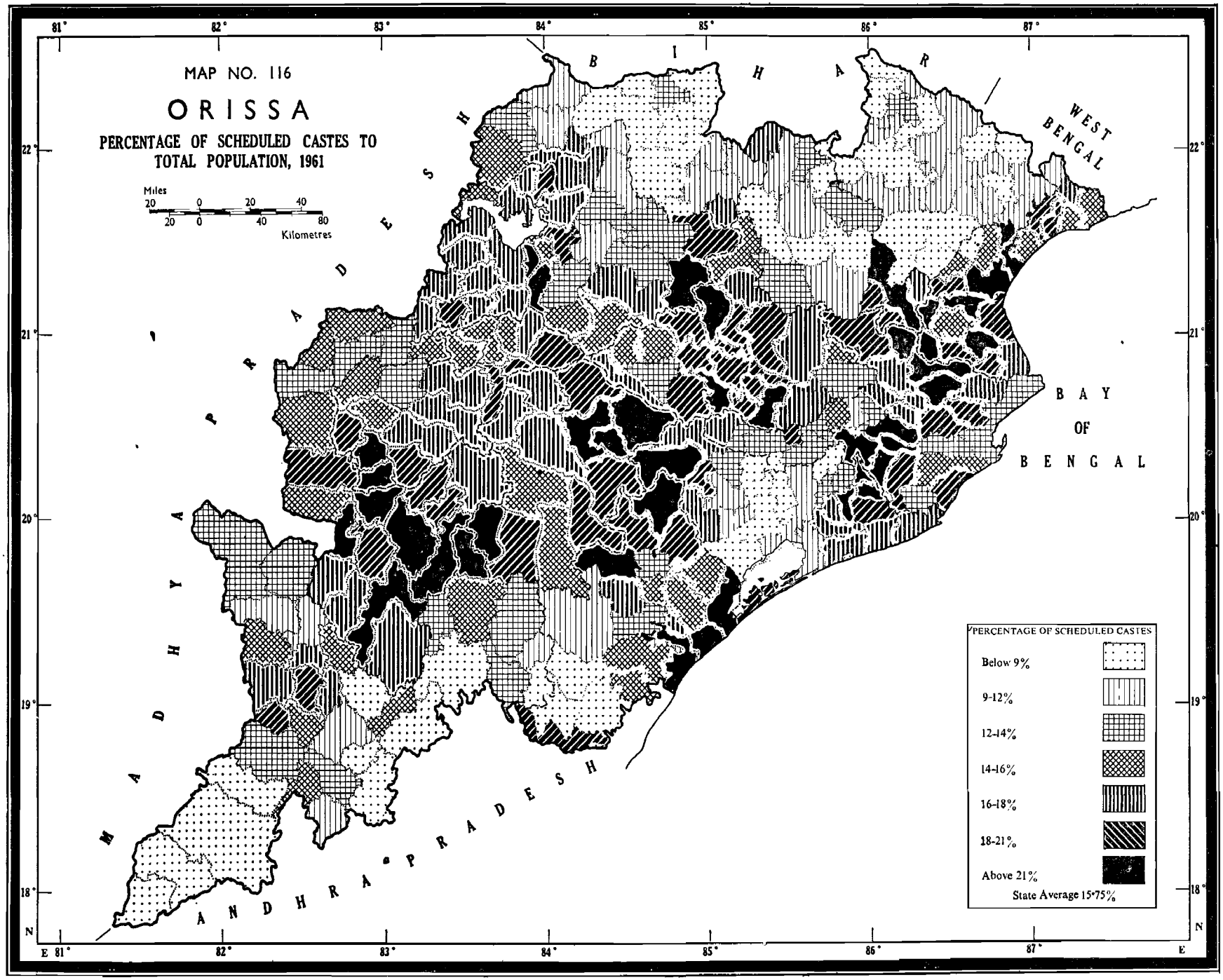
The last among the series of maps showing the proportion of workers engaged in different categories of 'Services' is this one intended to display the proportion absorbed in personal services. The districtwise proportion is worked out in percentage and grouped into six ranges, viz., below 5, 5 to 8, 8 to 11, 11 to 14, 14 to 17 and above 17 per cent. Districts are shaded suitably in black corresponding to their percentage groups.

There are 1,014,728 persons engaged in services in the State and the number absorbed by personal services is 117,972 being 11·63 per cent. There are 4 districts having a higher percentage than that of the State. Cuttack has the largest number, as well as the highest percentage of persons under personal services, viz., 37,252 persons and 21·66 per cent respectively. Kalahandi has the lowest percentage of workers, viz., 4·33 only, while Baudh-Khondmals has the lowest number (2,153) engaged in the concerned services. The proportion seems to be higher in the coastal districts than in others.

The statement below gives the percentage of workers engaged in personal services to total workers in services in the districts during 1961 :

District	Percentage
Cuttack	21·66
Puri	15·20
Balasore	14·19
Keonjhar	13·75
State Average	11·63
Ganjam	11·57
Mayurbhanj	11·10
Dhenkanal	10·99
Sambalpur	8·06
Sundargarh	7·99
Bolangir	6·81
Koraput	5·73
Baudh-Khondmals	5·43
Kalahandi	4·33

V. SOCIO-CULTURAL ASPECT


MAP NO. 116
ORISSA
PERCENTAGE OF SCHEDULED CASTES TO TOTAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE OF SCHEDULED CASTES
Below 9%
9-12%
12-14%
14-16%
16-18%
18-21%
Above 21%
State Average 15·75%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 116

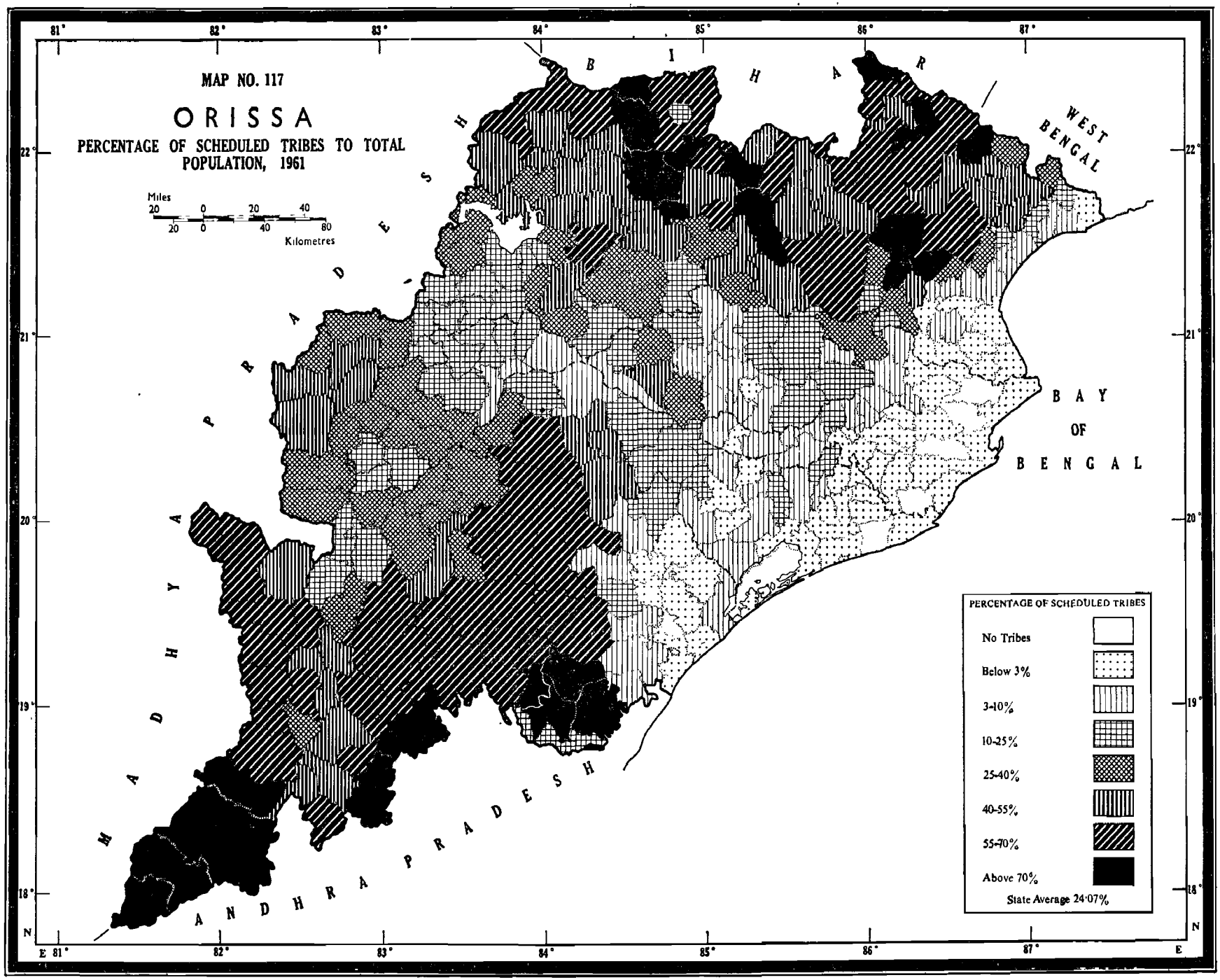
PERCENTAGE OF SCHEDULED CASTES TO THE TOTAL POPULATION, 1961

The percentage of Scheduled Castes to the total population of each police station in 1961 is represented in this map and grouped into seven ranges, viz., below 9, 9 to 12, 12 to 14, 14 to 16, 16 to 18, 18 to 21 and above 21 per cent. All the police stations are hatched by choropleth technique corresponding to their groups.

The total population of the State in 1961 was 17,548,846 of whom 2,763,858 persons were enumerated under the Scheduled Castes, constituting 15·75 per cent. The number of Scheduled Castes is large in Orissa, and according to the existing official list it comes to 94. These castes are widely distributed in the State. Baudh-Khondmals contains the highest percentage (19·32) of Scheduled Castes in the State. Among the police stations, Khajuripada (33·13%) in Baudh-Khondmals and Shergada (32·23%) in Balasore district have the highest percentage, while the police stations of Motu (0·78%) in Koraput and R. Udayagiri (3·36%) and Serango (3·58 %) in Ganjam district have the lowest percentage of Scheduled Castes in the State. The proportion of Scheduled Castes seems to be poor in the districts of Mayurbhanj, Keonjhar, Sundargarh and Koraput.

The statement below gives the percentage of Scheduled Castes in the districts:

District	Percentage
Baudh-Khondmals	19·32
Kalahandi	18·87
Balasore	18·84
Dhenkanal	18·19
Cuttack	17·90
Bolangir	17·54
Ganjam	16·46
Sambalpur	16·24
State Average .	15·75
Puri	14·19
Keonjhar	13·85
Koraput	12·44
Sundargarh	9·64
Mayurbhanj	8·66


MAP NO. 117
ORISSA
PERCENTAGE OF SCHEDULED TRIBES TO TOTAL POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE OF SCHEDULED TRIBES
No Tribes
Below 3%
3-10%
10-25%
25-40%
40-55%
55-70%
Above 70%
State Average 24·07%
81°
82°
83°
84°
85°
86°
87°
E
22°
21°
20°
19°
18°
N

MAP No. 117

PERCENTAGE OF SCHEDULED TRIBES TO THE TOTAL POPULATION, 1961

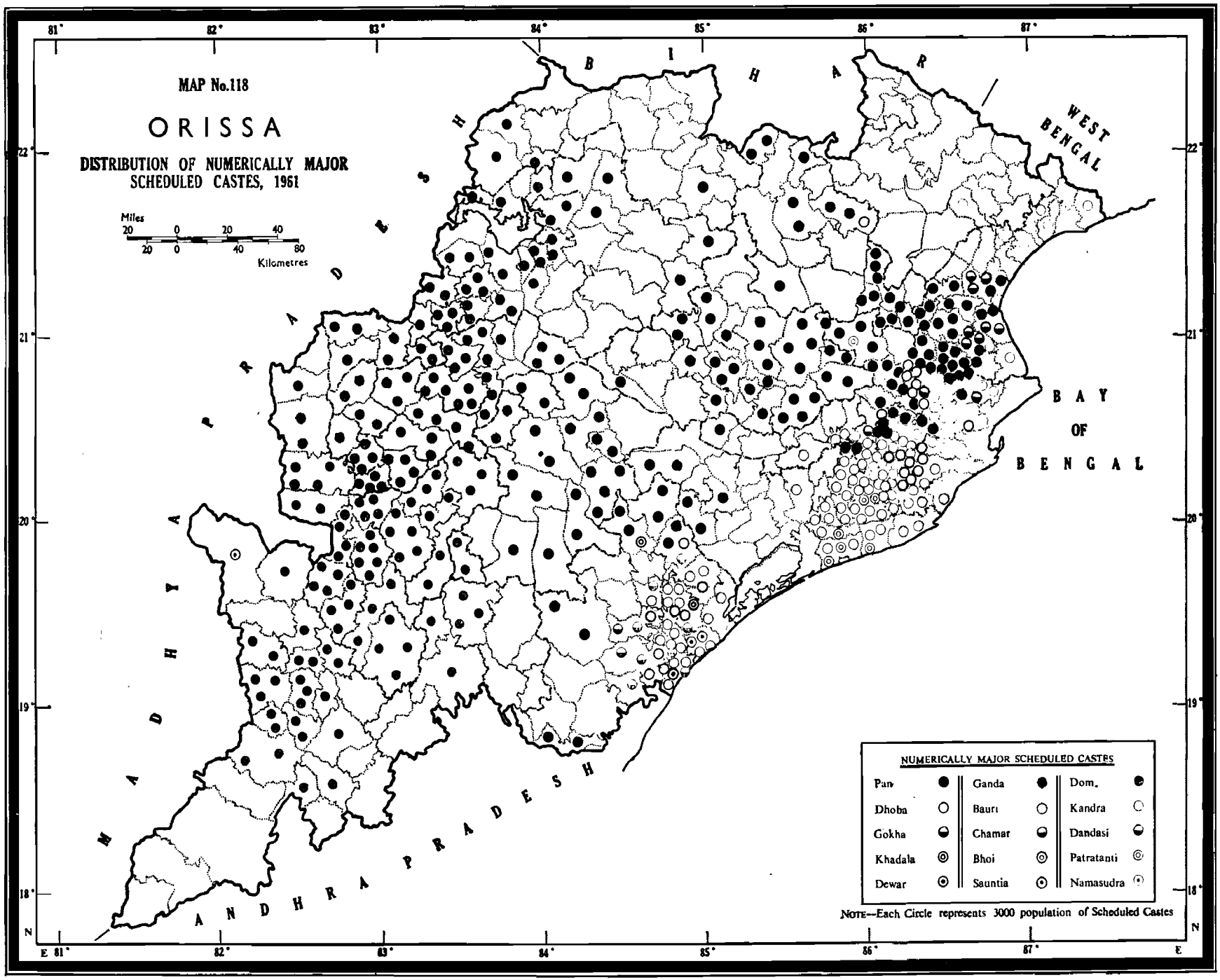
The map shows the proportion of Scheduled Tribes in the total population during 1961 in the police stations of the State. The proportion is given in percentage and grouped into eight ranges, above and below the State average (24·07%) viz., below 3, 3 to 10, 10 to 25, 25 to 40, 40 to 55, 55 to 70 and above 70 per cent. Moreover, the police stations left unshaded indicate that there is no tribal population there. The rest of the police stations are hatched by choropleth method.

There are a large number of Scheduled Tribes, viz., 62 living in the State. They form almost a fourth of the State's population. To be exact, it is 24·07 per cent or 4,223,757 persons out of the total of 17,548,846 in the State. Koraput contains the largest number (912,343) as well as the highest percentage (60·89) of the tribal population. The police stations of Motu (88·91) and Puttasingi (85·96) in Koraput, Ramagiri (83·01) in Ganjam and Sarat (82·44) in Mayurbhanj have the highest percentage of tribes. On the other hand, the police stations of Gobindpur (0·02), Mahanga (1·24) and Kendrapara (0·07) in Cuttack, Nimapara (0·01) and Balianta (0·03) in Puri have the lowest percentage of Scheduled Tribes. But the police stations of Balikuda, Patamundai, Patkura and Aul in Cuttack district, Gop in Puri district and Hinjili in Ganjam district do not have any tribal population, or have just a negligible number.

A glance at the map will indicate that the coastal tracts have an insignificant proportion of Scheduled Tribes compared to the mountainous and forested districts in the interior. The north-eastern and the south-western parts of the State appear to be the real homeland of the tribes.

The following statement gives the percentage of Scheduled Tribes in the districts during 1961 :

District	Percentage
Koraput	60·89
Mayurbhanj	60·61
Sundargarh	58·12
Keonjhar	47·14
Baudh-Khondmals	41·61
Kalahandi	33·19
Sambalpur	29·13
State Average	24·07
Bolangir	22·54
Dhenkanal	13·94
Ganjam	10·04
Balasore	6·78
Puri	3·62
Cuttack	2·81


MAP No.118
ORISSA
DISTRIBUTION OF NUMERICALLY MAJOR SCHEDULED CASTES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
NUMERICALLY MAJOR SCHEDULED CASTES
Pan
Dhoba
Gokha
Khadala
Dewar
Ganda
Bauri
Chamar
Bhoi
Sauntia
Dom.
Kandra
Dandasi
Patratanti
Namasudra
NOTE--Each Circle represents 3000 population of Scheduled Castes
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

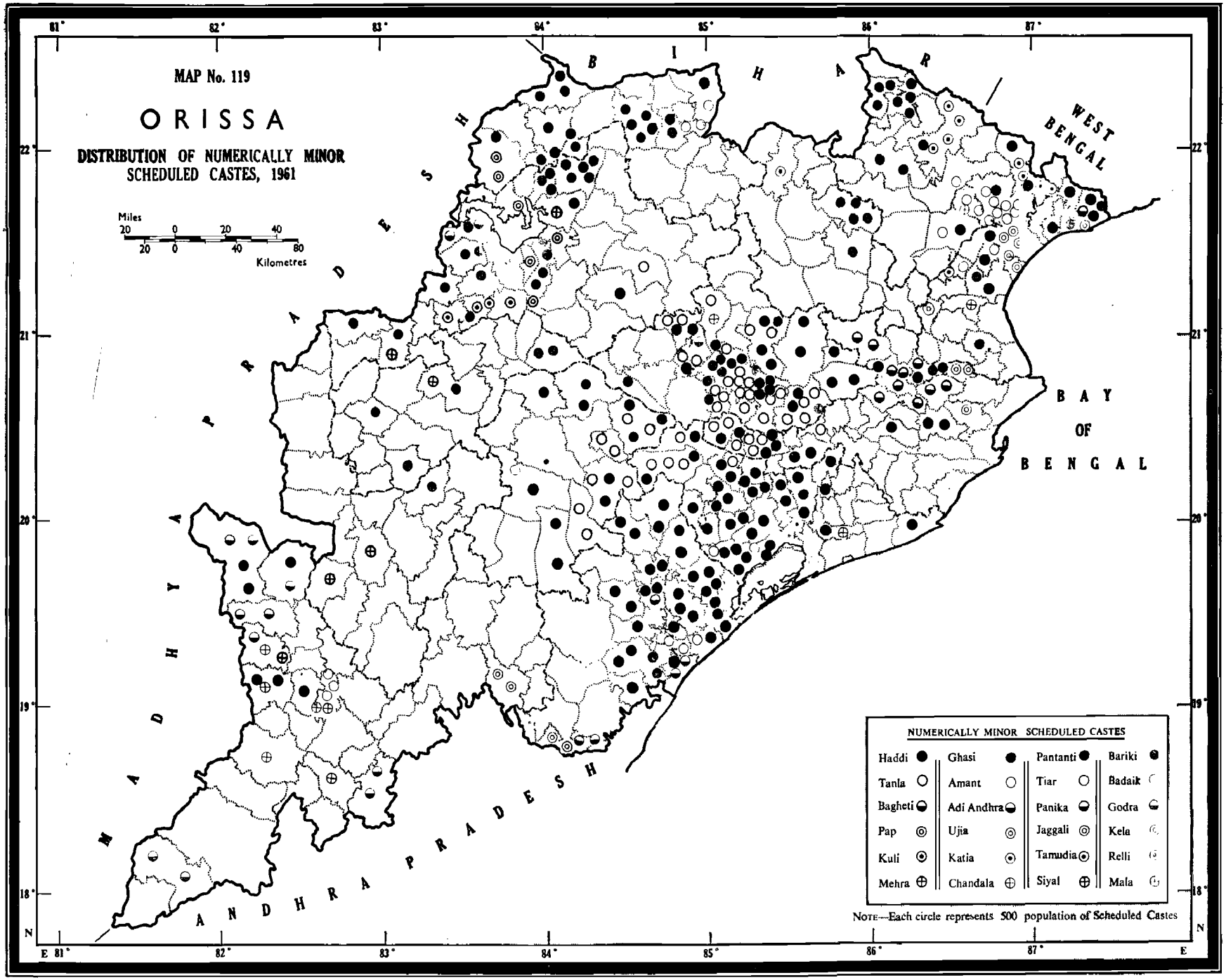
MAP No. 118

DISTRIBUTION OF NUMERICALLY MAJOR SCHEDULED CASTES, 1961

The map shows the distribution of major Scheduled Castes in each police station of the State. As laid down in the Scheduled Castes and Scheduled Tribes List (Modification) Order, 1956 there are 94 Scheduled Castes in Orissa, the total population of which is 2,763,858. For purpose of this map, a Scheduled Caste is treated as major if it has a population of above 3,000 within any police station of the State. On this basis 15 Scheduled Castes qualify themselves for enlistment as major Scheduled Castes of Orissa. The places of concentration of individual castes have been plotted on the map by symbols explained in the legend. Five symbols have been used in 3 different colours, giving a combination of 15 items in order to represent 15 major Scheduled Castes.

The members of the Pan Scheduled Caste constitute the largest number, viz., 602,126 among the Scheduled Castes of Orissa. They are spread over mostly in the districts of Balasore, Cuttack, Dhenkanal, Ganjam, Keonjhar and Baudh-Khondmals. The other numerically dominant Scheduled Castes are the Gandas and Doms. The Gandas are mostly found in the districts of Sambalpur and Bolangir while the Doms are found living in large numbers in Kalahandi and Koraput districts. The statement below gives the population of each of the major Scheduled Castes of Orissa in 1961 :

Scheduled Caste	Population
1. Pan	602,126
2. Ganda	358,403
3. Dom	311,183
4. Dhoba	265,360
5. Bauri	250,914
6. Kandra	212,039
7. Gokha	66,733
8. Chamar	57,064
9. Dandasi	50,250
10. Patratanti	41,371
11. Khadala	37,686
12. Bhoi	36,302
13. Dewar	19,323
14. Sauntia	15,703
15. Namasudra	7,900


MAP No. 119
ORISSA
DISTRIBUTION OF NUMERICALLY MINOR SCHEDULED CASTES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E
NUMERICALLY MINOR SCHEDULED CASTES
Haddi
Tanla
Bagheti
Pap
Kuli
Mehra
Ghasi
Amant
Adi Andhra
Ujia
Katia
Chandala
Pantanti
Tiar
Panika
Jaggali
Tamudia
Siyal
Bariki
Badaik
Godra
Kela
Relli
Mala
NOTE—Each circle represents 500 population of Scheduled Castes

MAP No. 119

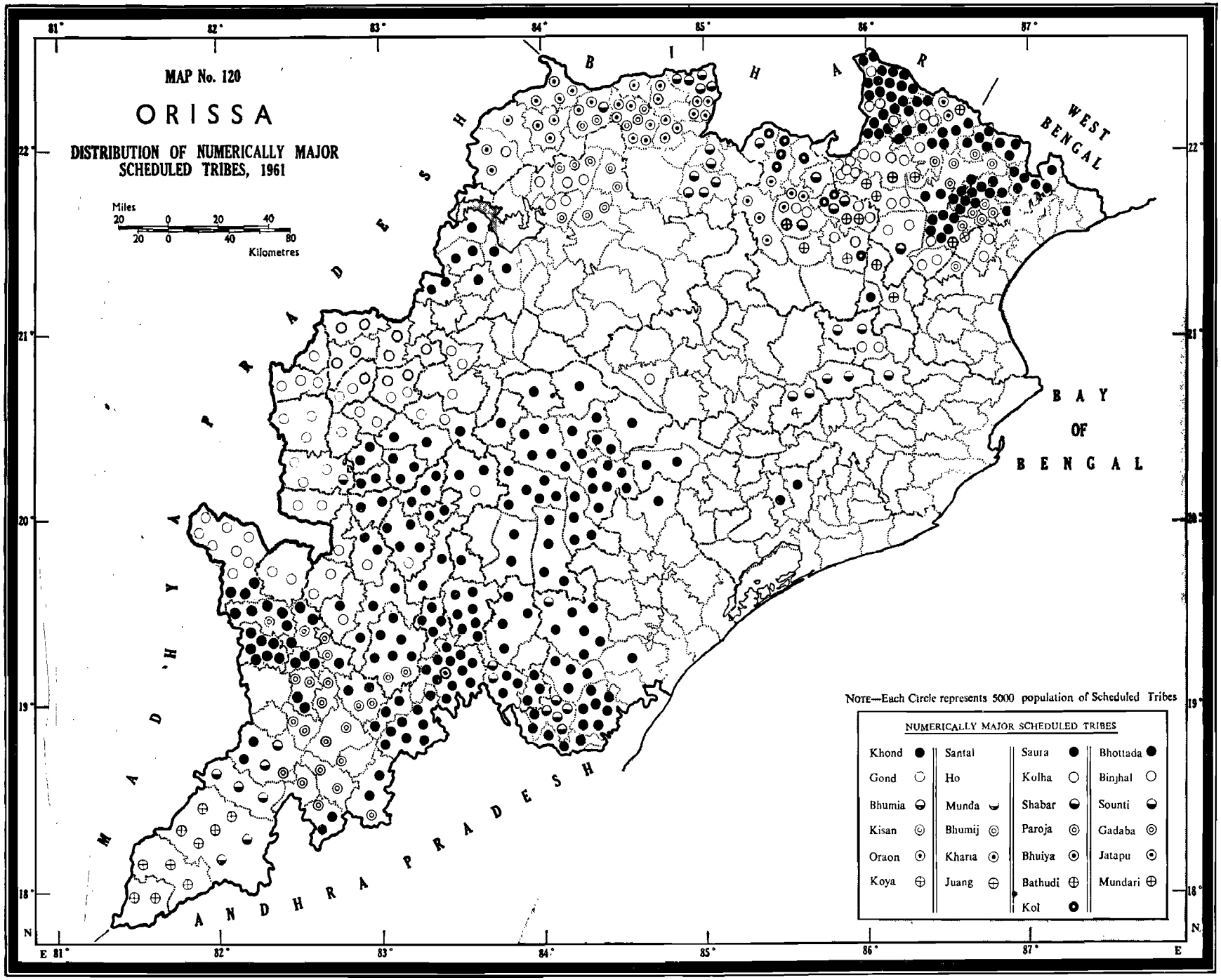
DISTRIBUTION OF NUMERICALLY MINOR SCHEDULED CASTES, 1961

Out of 94 Scheduled Castes in the State, 15 have been treated as major castes as mentioned in the previous Map (No. 118). Each of these castes has at least a population of 3,000 or more within any one police station of the State. There are however, a number of other Scheduled Castes which have lesser concentration in different police stations of the State. Scheduled Castes which have a population not less than 500 and not more than 3,000 within any one police station are treated as minor castes for purpose of this map. There are 24 such Scheduled Castes in the State. Besides, there are a few other castes which are numerically insignificant, being less than 500 within the jurisdiction of any single police station. Such castes have not been shown in this map.

The members of the Hadi caste form the largest population among the numerically minor Scheduled Castes, their population being 91,819. The Ghasis and the Pantantis with population of 54,647 and 32,875 respectively in the State constitute next important minor Scheduled Castes so far as their numbers are concerned. The Hadis are spread over mostly in Ganjam, Puri, Cuttack, Dhenkanal and Balasore districts, while the Ghasis are to be seen in large numbers in Sambalpur, Bolangir, Baudh-Khondmals, Koraput and Dhenkanal districts. The Pantantis are mostly the inhabitants of Sundargarh, Mayurbhanj, Keonjhar and Sambalpur districts.

The statement below gives the population of each of the numerically minor Scheduled Castes of Orissa in 1961 :

	Caste	Population
1.	Hadi	91,819
2.	Ghasi	54,647
3.	Pantanti	32,875
4.	Tanla	32,245
5.	Bariki	26,996
6.	Mehra	12,803
7.	Amant	12,656
8.	Tiar	12,012
9.	Siyal	10,351
10.	Baghuti	8,600
11.	Adi Ándhra	8,313
12.	Kela	7,764
13.	Panika	7,504
14.	Pap	6,702
15.	Ujia	6,424
16.	Relli	4,548
17.	Mala	4,506
18.	Chandala	4,466
19.	Jaggali	4,182
20.	Kuli	3,911
21.	Badaik	3,763
22.	Katia	3,357
23.	Godra	2,370
24.	Tamadia	1,684


MAP No. 120
ORISSA
DISTRIBUTION OF NUMERICALLY MAJOR SCHEDULED TRIBES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N
NOTE—Each Circle represents 5000 population of Scheduled Tribes
NUMERICALLY MAJOR SCHEDULED TRIBES
Khond
Gond
Bhumia
Kisan
Oraon
Koya
Santal
Ho
Munda
Bhumij
Kharia
Juang
Saura
Kolha
Shabar
Paroja
Bhuiya
Bathudi
Kol
Bhottada
Binjhal
Sounti
Gadaba
Jatapu
Mundari

MAP No. 120

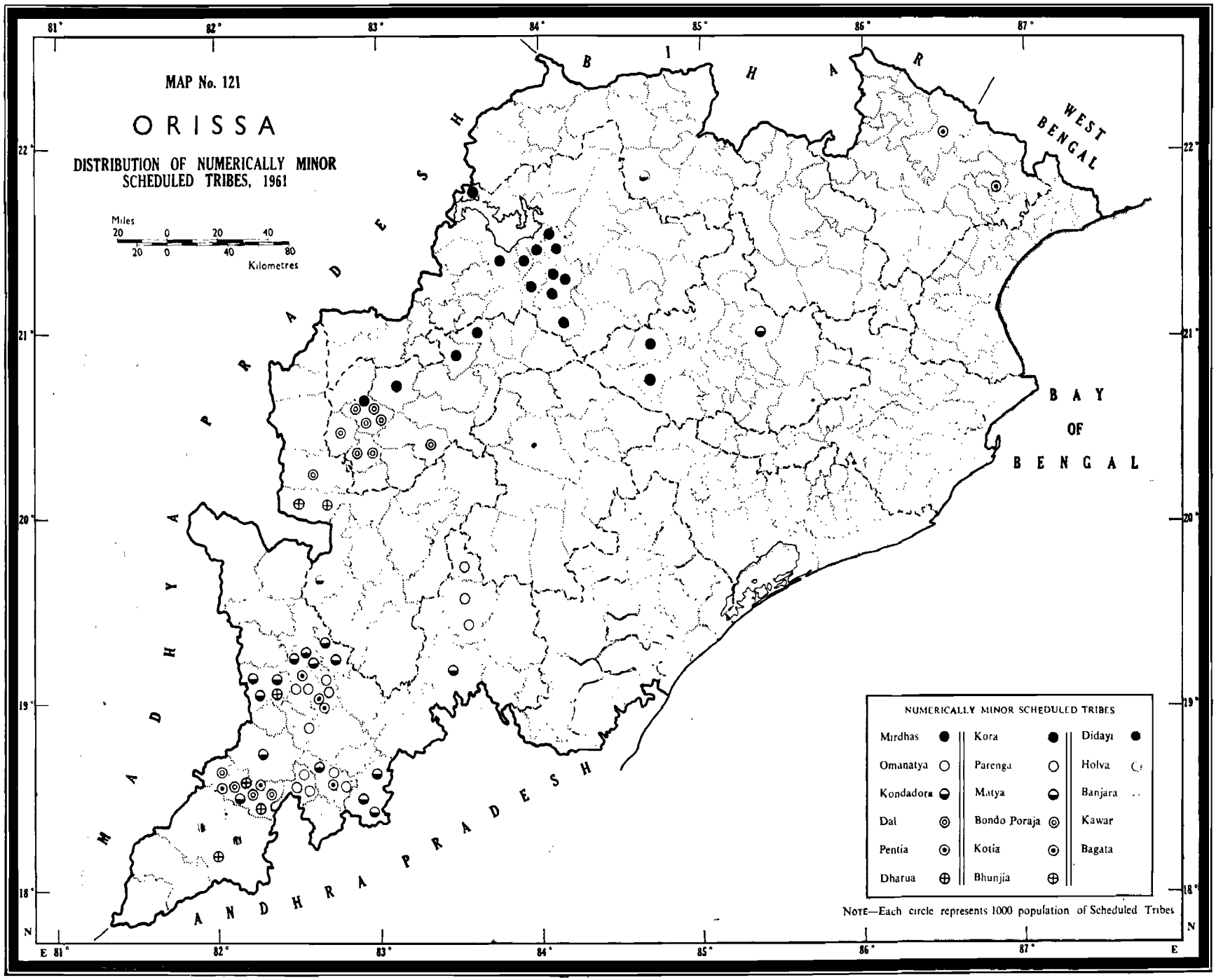
DISTRIBUTION OF NUMERICALLY MAJOR SCHEDULED TRIBES, 1961

The map shows the distribution of major Scheduled Tribes in each police station within the State. According to the Scheduled Castes and Scheduled Tribes List (Modification) Order, 1956 there are 62 Scheduled Tribes in the State, having a population of 4,223,757. For purpose of this map a Scheduled Tribe is treated as major if it has a population above 5,000 within any police station in the State. On this basis 25 Scheduled Tribes of Orissa are enlisted as major tribes. The localities of concentration of individual tribes have been plotted on the map by symbols explained in the legend.

A glance at the map will show that the Konds (8·19 lakhs) are most widely distributed in the central and southern parts of the State. Concentration of tribal population is mostly confined to Koraput, Ganjam, Baudh-Khondmals, Sundargarh, Keonjhar and Mayurbhanj districts. The coastal region and the valley of the main rivers, viz., the Mahanadi and the Brahmani are mostly devoid of tribal population.

The following statement gives the population of each of the major Scheduled Tribes living in Orissa, during 1961 :

	Tribe	Population
1.	Kond	818,847
2.	Gond	445,705
3.	Santal	411,181
4.	Saora	311,614
5.	Munda	221,399
6.	Kolha	203,515
7.	Shabar	193,613
8.	Paroja	159,866
9.	Bhottada	159,091
10.	Bhuyan	156,878
11.	Oraon	129,061
12.	Kisan	125,668
13.	Bhumij	116,181
14.	Bathudi	104,542
15.	Kharia	96,691
16.	Binjhal	76,692
17.	Koya	55,284
18.	Bhumia	50,294
19.	Kol	46,397
20.	Sounti	44,409
21.	Gadaba	43,939
22.	Ho	43,323
23.	Juang	21,890
24.	Mundari	17,688
25.	Jatapu	10,801


MAP No. 121
ORISSA
DISTRIBUTION OF NUMERICALLY MINOR SCHEDULED TRIBES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
NUMERICALLY MINOR SCHEDULED TRIBES
Mirdhas
Omanatya
Kondadora
Dal
Pentia
Dharua
Kora
Parenga
Matya
Bondo Poraja
Kotia
Bhunjia
Didayi
Holva
Banjara
Kawar
Bagata
NOTE—Each circle represents 1000 population of Scheduled Tribes

MAP No. 121

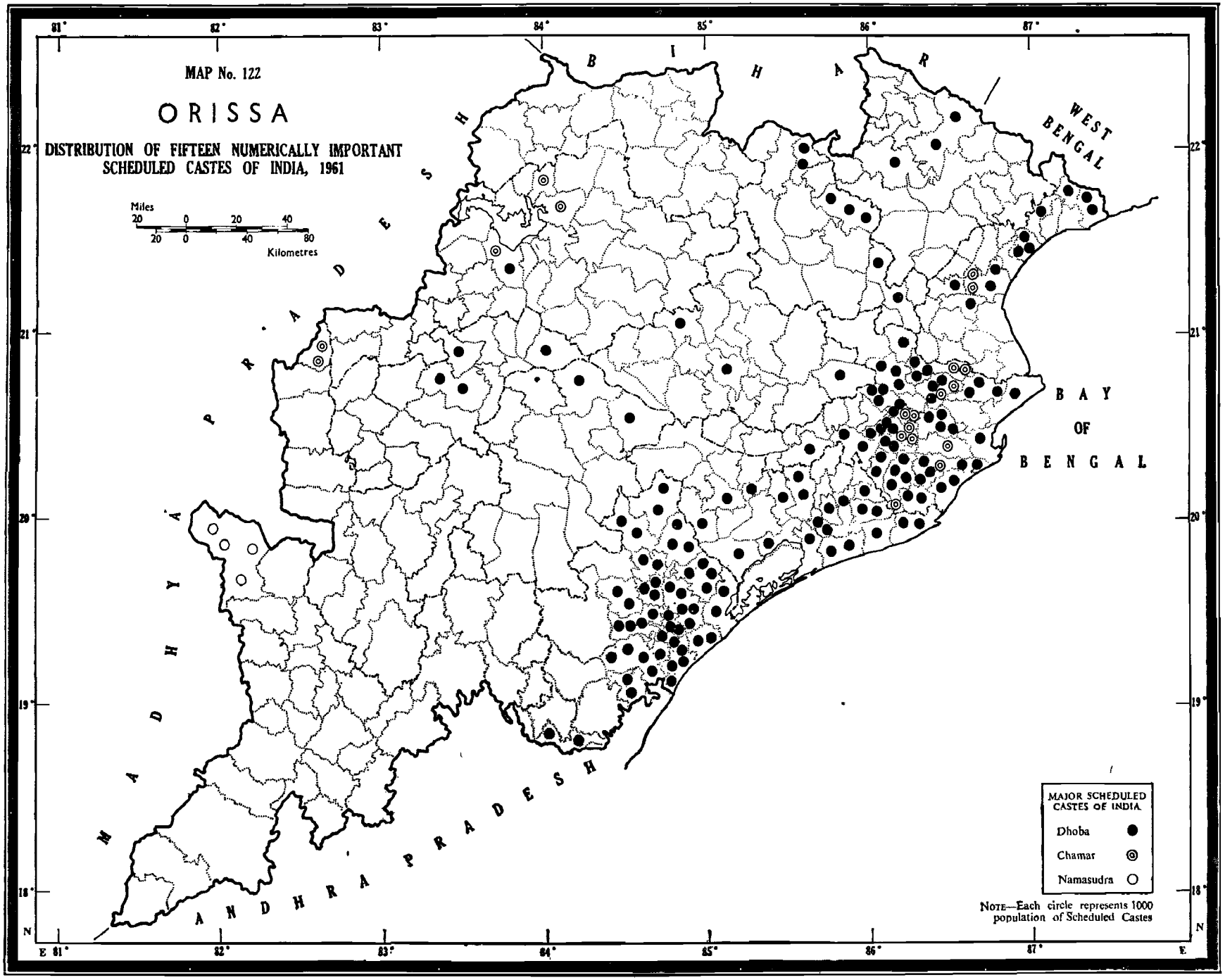
DISTRIBUTION OF NUMERICALLY MINOR SCHEDULED TRIBES, 1961

According to the approved list, there are 62 Scheduled Tribes in Orissa, but two tribes were found non-existent and were not enumerated in the Census of 1961. Out of the remaining 60 tribes, 25 have been treated as major tribes as mentioned in the Explanatory Note to the previous Map (No. 120). All these tribes have a population above 5,000 within any police station of Orissa. But there are a number of other tribes which have lesser concentration in different localities of the State. Scheduled Tribes which have a population not less than 1,000 and not more than 5,000 in a police station are treated as minor tribes for purpose of this map. There are 17 such tribes in Orissa. Besides, there are a few others which are numerically insignificant, being less than 1,000 within the jurisdiction of any single police station of Orissa. Such tribes have not been shown in this map.

The Mirdhas have the largest population among the minor Scheduled Tribes, their population being 26,660. Next in numerical importance are Kondadora (16,526) and Omanatya (14,365). The Mirdhas are mostly concentrated in Sambalpur and Bolangir districts, while Omanatyas and Kondadoras are to be found in their largest numbers in Koraput. These minor tribes are mostly the inhabitants of the region extending along the south-western portion of the State.

The statement below gives the population of each numerically minor Scheduled Tribe of Orissa in 1961 :

	Tribe	Population
1.	Mirdhas	26,660
2.	Kondadora	16,526
3.	Omanatya	14,365
4.	Dal	9,844
5.	Pentia	9,656
6.	Dharua	7,210
7.	Kora	7,189
8.	Parenga	6,801
9.	Matya	5,711
10.	Bondo Poraja	4,677
11.	Holva	4,483
12.	Banjara	3,678
13.	Kotia	3,559
14.	Kawar	2,778
15.	Bhunjia	2,375
16.	Didayi	1,978
17.	Bagata	1,511


MAP No. 122
ORISSA
DISTRIBUTION OF FIFTEEN NUMERICALLY IMPORTANT SCHEDULED CASTES OF INDIA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
MAJOR SCHEDULED CASTES OF INDIA
Dhoba
Chamar
Namasudra
NOTE—Each circle represents 1000 population of Scheduled Castes
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E

MAP No. 122

DISTRIBUTION OF 15 NUMERICALLY IMPORTANT SCHEDULED CASTES OF INDIA, 1961

The population of Scheduled Castes in India is 64,449,275. Arranged in order of population as recorded in the Census of 1961 in respect of each Scheduled Caste, the following is the list of the first 15 numerically dominant Scheduled Castes of India. The names of the castes and their total population in India is given below:

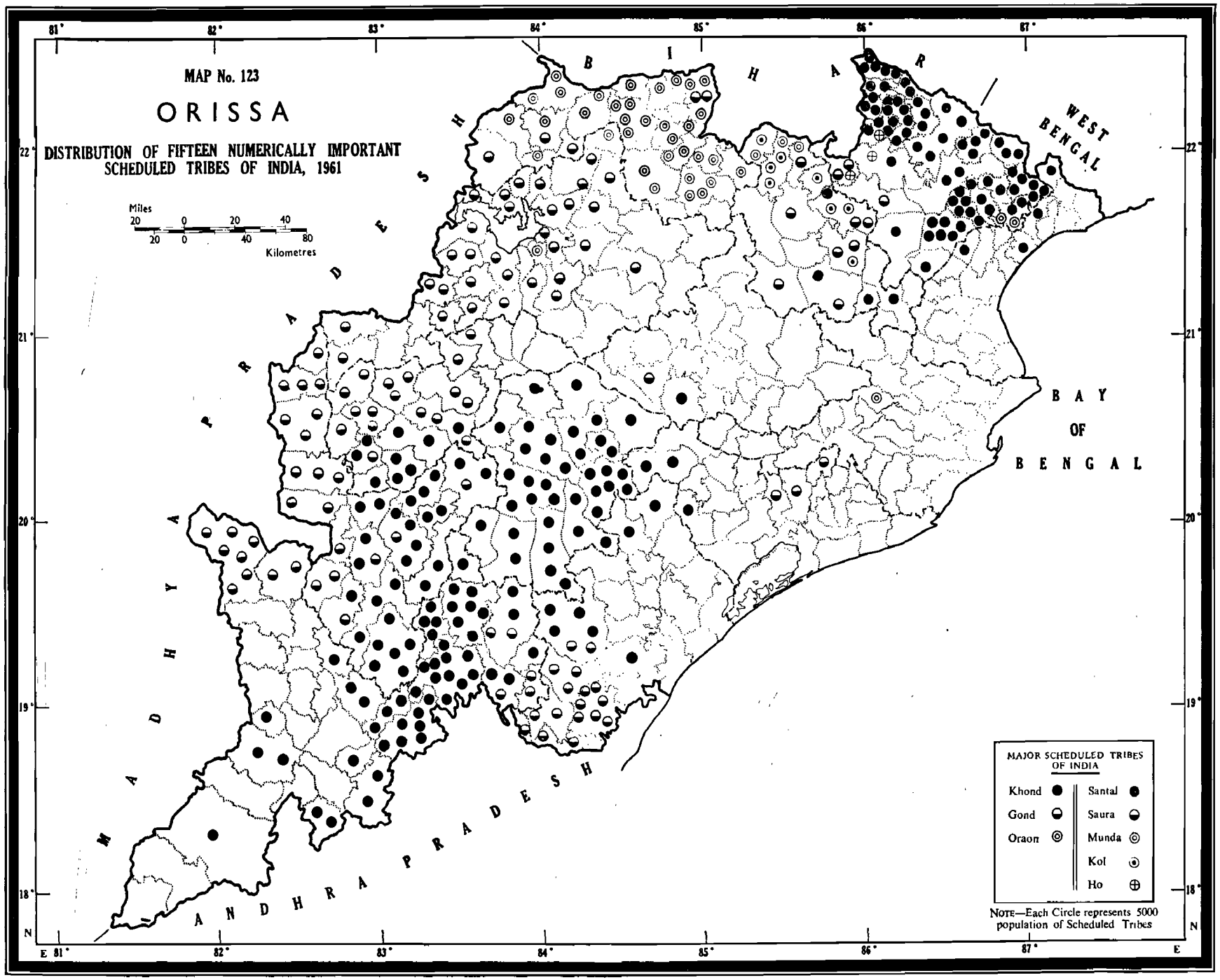
Sl. No.	Scheduled Caste	Population
1.	CHAMAR/MOCHI including castes/subcastes grouped under CHAMAR/MOCHI	17,960,328
2.	PASI	2,509,273
3.	MADIGA including castes/subcastes grouped under MADIGA	2,339,670
4.	ADI DRAVIDA	2,189,271
5.	MALA including castes/subcastes grouped under MALA ...	1,848,224
6.	DOSADH including castes/subcastes grouped under DOSADH	1,843,565
7.	DHOBI including castes/subcastes grouped under DHOBI ...	1,704,036
8.	PARAIYAN including castes/subcastes grouped under PARAIYAN	1,670,354
9.	BHANGI/MEHTAR including castes/subcastes grouped under BHANGI/MEHTAR	1,418,113
10.	KOLI including castes/subcastes grouped under KOLI ...	1,263,282
11.	ADI KARNATAKA	1,239,096
12.	RAJBANSHI	1,201,717
13.	BAGDI including castes/subcastes grouped under BAGDI ...	1,187,366
14.	MUSAHAR	1,108,649
15.	NAMASUDRA	1,007,217

Out of the Scheduled Castes mentioned above, there are only 3, viz., Dhoba, Chamar and Namasudra who are found living in Orissa and dispersed in different police stations of the State in varying strength. Each such caste has been plotted on the map at the rate of one dot per 1,000 population of the particular Scheduled Caste. If any police station has a population of any of the above mentioned 15 Scheduled Castes of India with a strength of less than 1,000 in any police station, such caste has not been shown in the map.

The population of Dhoba or Dhobi in India is 1,704,036 out of which 265,360 live in Orissa constituting 15·57 per cent. They are found extensively in Ganjam, Cuttack, Puri, Balasore and Keonjhar districts. Small numbers are also seen in Mayurbhanj, Dhenkanal, Baudh-Khondmals, Bolangir and Sambalpur. The Chamars are concentrated mostly in Cuttack district and less extensively in Balasore, Sambalpur and Kalahandi districts. The Namasudras are all concentrated at one place in Orissa, viz.; in Umarkote police station of Koraput district.

The Chamars are numerically at the top of all Scheduled Castes in India, their population being 17,960,328 but their proportion in Orissa is small, being limited to a population of 57,064 which makes 0·32 per cent.

The Namasudras occupy the 15th place in the list of 15 numerically important Scheduled Castes of India, their number being 1,007,217. In Orissa the population is small being limited to 7,900 or 0·78 per cent.


MAP No. 123
ORISSA
DISTRIBUTION OF FIFTEEN NUMERICALLY IMPORTANT SCHEDULED TRIBES OF INDIA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
MAJOR SCHEDULED TRIBES OF INDIA
Khond
Gond
Oraon
Santal
Saura
Munda
Kol
Ho
NOTE—Each Circle represents 5000 population of Scheduled Tribes
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 123

DISTRIBUTION OF 15 NUMERICALLY IMPORTANT SCHEDULED TRIBES OF INDIA, 1961.

The total population of Scheduled Tribes in India is 30,130,184 as recorded in the Census of 1961. Below is given a list of 15 Scheduled Tribes which are numerically at the top of the list of Scheduled Tribes of India.

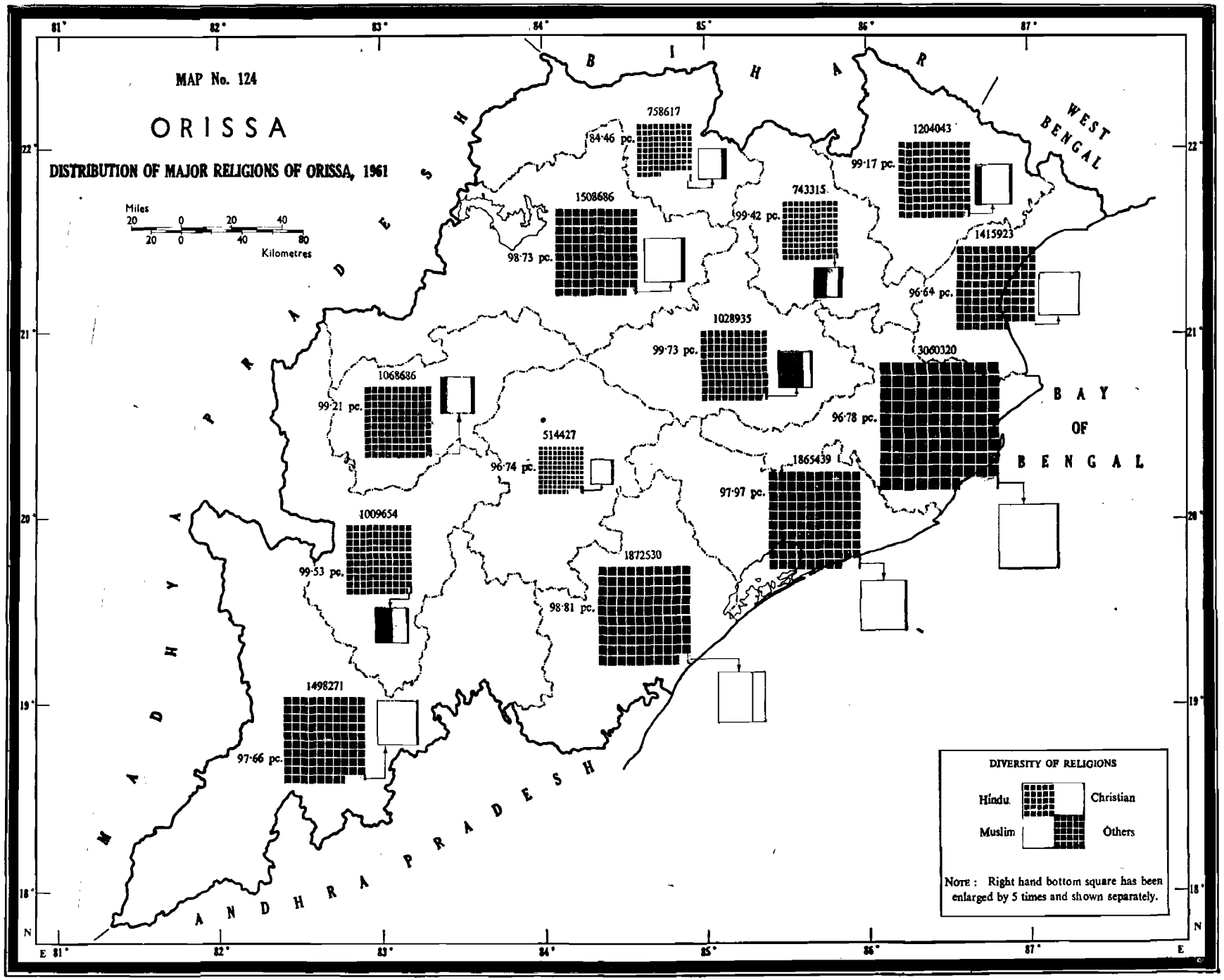
Sl. No.	Scheduled Tribe	Population
1.	GOND including tribes/subtribes grouped under GOND ...	3,991,767
2.	BHIL/BHILALA including tribes/subtribes grouped under BHIL/BHILALA	3,838,371
3.	SANTAL	3,154,107
4.	ORAON including tribes/subtribes grouped under ORAON ...	1,447,429
5.	MINA	1,155,916
6.	MUNDA including tribes/subtribes grouped under MUNDA ...	1,019,098
7.	KHOND including tribes/subtribes grouped under KHOND	845,981
8.	KACHARI GROUP	654,013
9.	HO	499,144
10.	NAGA TRIBES	466,215
11.	KOL including tribes/subtribes grouped under KOL	432,459
12.	SAORA/SAVARA including tribes/subtribes grouped under SAORA/SAVARA	432,125
13.	KOLI including tribes/subtribes grouped under KOLI	418,640
14.	KHASI including tribes/subtribes grouped under KHASI ...	356,557
15.	KAWAR including tribes/subtribes grouped under KAWAR	334,406

Out of the above 15 Scheduled Tribes which are numerically dominant in India, 8 are found in Orissa as named below :

Scheduled Tribe	Population	Percentage to total population of the Tribe in India
Khond	818,847	96·8
Gond	445,705	11·2
Santal	411,181	13·0
Saora	*311,614*	72·1
Munda	221,399	21·7
Oraon	129,061	8·9
Kol	46,397	10·7
Ho	43,323	8·7

In drawing up the above list, only those tribes which have a population of at least 5,000 in any police station of Orissa have been taken into consideration. Other tribes have not been named in the list above or plotted on the map.

An overwhelming majority of Khond population of India lives in Orissa. Their total population in India is 8·46 lakhs out of which 8·19 lakhs or 96·8 per cent are inhabitants of this State. Similarly, nearly three-fourths of the Saoras of India live within the bounds of Orissa, the actual number being 3·12 lakhs out of 4·32 lakhs in India. The other tribes, namely, Gond, Santal, Munda, Oraon, Kol and Ho form varying percentages between 8·7 and 21·7 out of the total population of India. The Santals occupy to a great extent the north-eastern part of the State with very high concentration in Mayurbhanj district. The Saoras are concentrated in Parlakhemundi and Gunupur subdivisions in the south of Orissa and in portions of Sambalpur and Bolangir districts. The Mundas are found largely in the district of Sundargarh, while the Kols are concentrated in northern Keonjhar. The Khonds are extensively spread over the central and the southern Orissa, but the Gonds have got the maximum concentration in areas adjoining Madhya Pradesh. The coastal region has very little of population of the major Scheduled Tribes of India.


MAP No. 124
ORISSA
DISTRIBUTION OF MAJOR RELIGIONS OF ORISSA, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
758617
84·46 pc.
1204043
99·17 pc.
1508686
98·73 pc.
743315
99·42 pc.
1415923
96·64 pc.
1028935
99·73 pc.
3060320
96·78 pc.
1068686
99·21 pc.
514427
96·74 pc.
1865439
97·97 pc.
1009654
99·53 pc.
1872530
98·81 pc.
1498271
97·66 pc.
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
DIVERSITY OF RELIGIONS
Hindu
Christian
Muslim
Others
Note : Right hand bottom square has been enlarged by 5 times and shown separately.

MAP No. 124

DISTRIBUTION OF MAJOR RELIGIONS IN ORISSA, 1961

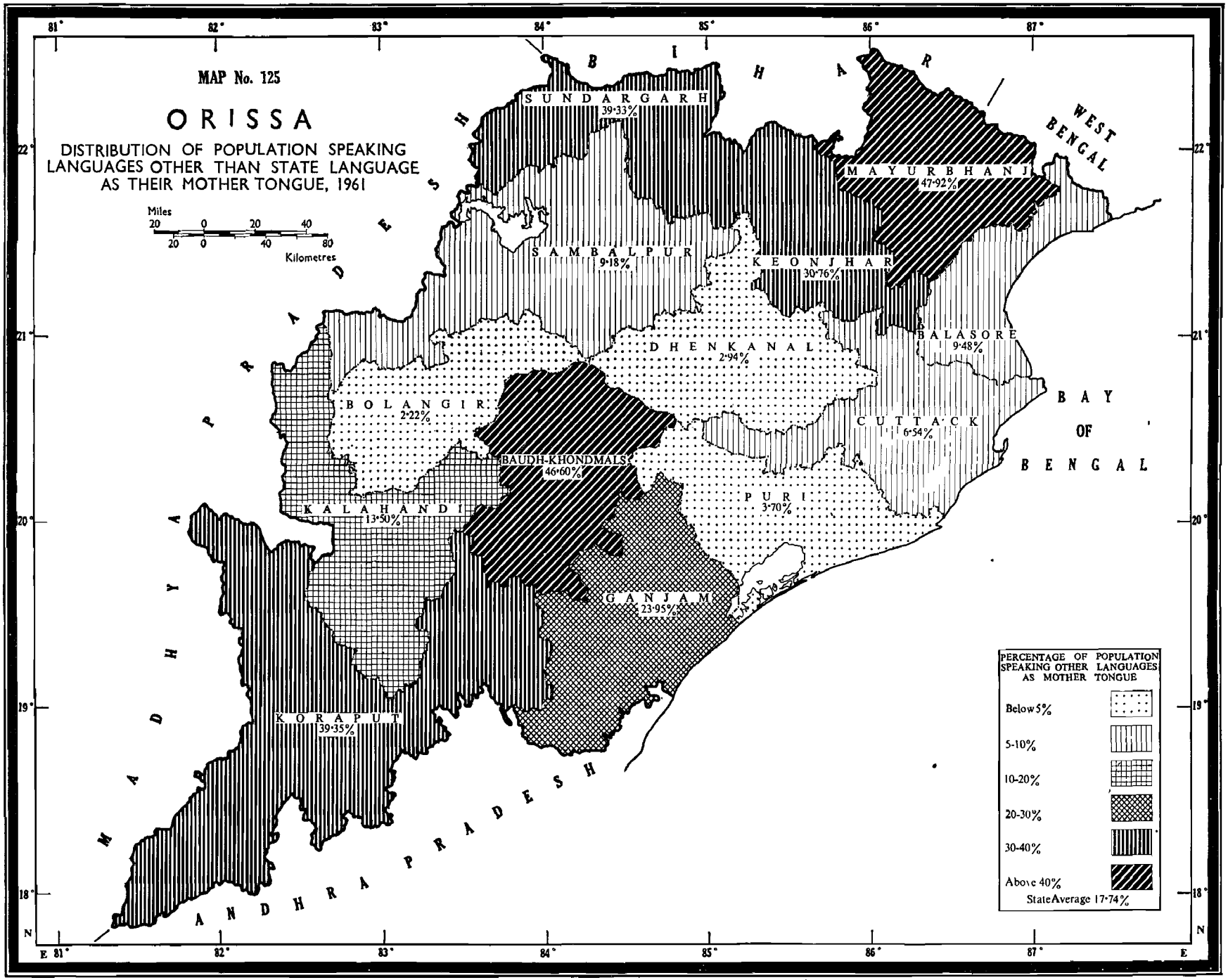
The major religions of Orissa comprise Hinduism, Islam and Christianity. The map shows the distribution of the above religions in the State, along with one more category, namely, 'Others' which includes Budhists, Jains, Sikhs and others. The tribal population is included under Hinduism, except those members who have been converted to Christianity or have preferred to describe their religion as 'Tribal' as distinguished from Hinduism. The latter, a small group, has been included among 'Others'.

Square root of the total population of each district is worked out and proportionate squares drawn within them respectively. All the squares are divided into 100 small squares, each small square representing one per cent of the population of the district. These small squares are shaded according to the percentage of population in each religion, viz., Hindu, Muslim, Christian and others by blue, red, yellow and black tints respectively. As the percentage of Muslims, Christians and others is very small, the last small square at the bottom right-hand corner of each big square has been separately shown nearby being enlarged 5 times the original small square for the facility of depiction of fractional percentages of religions in the district.

The total population during 1961 in the State, viz., 17,548,846, is divided among Hindus (17,123,194 or 97·57%), Muslims (215,319 or 1·23%), Christians (201,017 or 1·15%) and Others (9,316 or 0·05%). Higher concentration is noticeable among Muslims in the coastal districts, and among Christians in Sundargarh, Koraput and Ganjam.

The following statement gives the distribution of major religions in the districts of Orissa :

State/ District	Total Population	Hindus	Muslims	Christians	Others
ORISSA	17,548,846	17,123,194	215,319	201,017	9,316
Kalahandi	1,009,654	1,004,871	2,202	1,498	1,083
Koraput	1,498,271	1,463,177	3,655	31,155	284
Sambalpur	1,508,686	1,489,536	6,119	11,910	1,121
Bolangir	1,068,686	1,060,237	2,364	5,071	1,014
Baudh-Khondmals	514,427	497,684	446	16,247	50
Ganjam	1,872,530	1,850,177	4,802	17,516	35
Sundargarh	758,617	640,760	10,530	106,342	985
Dhenkanal	1,028,935	1,026,161	2,079	455	240
Puri	1,865,439	1,827,580	34,869	2,644	346
Keonjhar	743,315	738,993	2,578	802	942
Cuttack	3,060,320	2,961,637	92,717	4,562	1,404
Mayurbhanj	1,204,043	1,194,034	7,557	870	1,582
Balasore	1,415,923	1,368,347	45,401	1,945	230


MAP No. 125
ORISSA
DISTRIBUTION OF POPULATION SPEAKING LANGUAGES OTHER THAN STATE LANGUAGE AS THEIR MOTHER TONGUE, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 39·33%
MAYURBHANJ 47·92%
SAMBALPUR 9·18%
KEONJHAR 30·76%
DHENKANAL 2·94%
BALASORE 9·48%
BOLANGIR 2·22%
CUTTACK 6·54%
BAUDH-KHONDMALS 46·60%
PURI 3·70%
KALAHANDI 13·50%
GANJAM 23·95%
KORAPUT 39·35%
PERCENTAGE OF POPULATION SPEAKING OTHER LANGUAGES AS MOTHER TONGUE
Below 5%
5-10%
10-20%
20-30%
30-40%
Above 40%
State Average 17·74%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 125

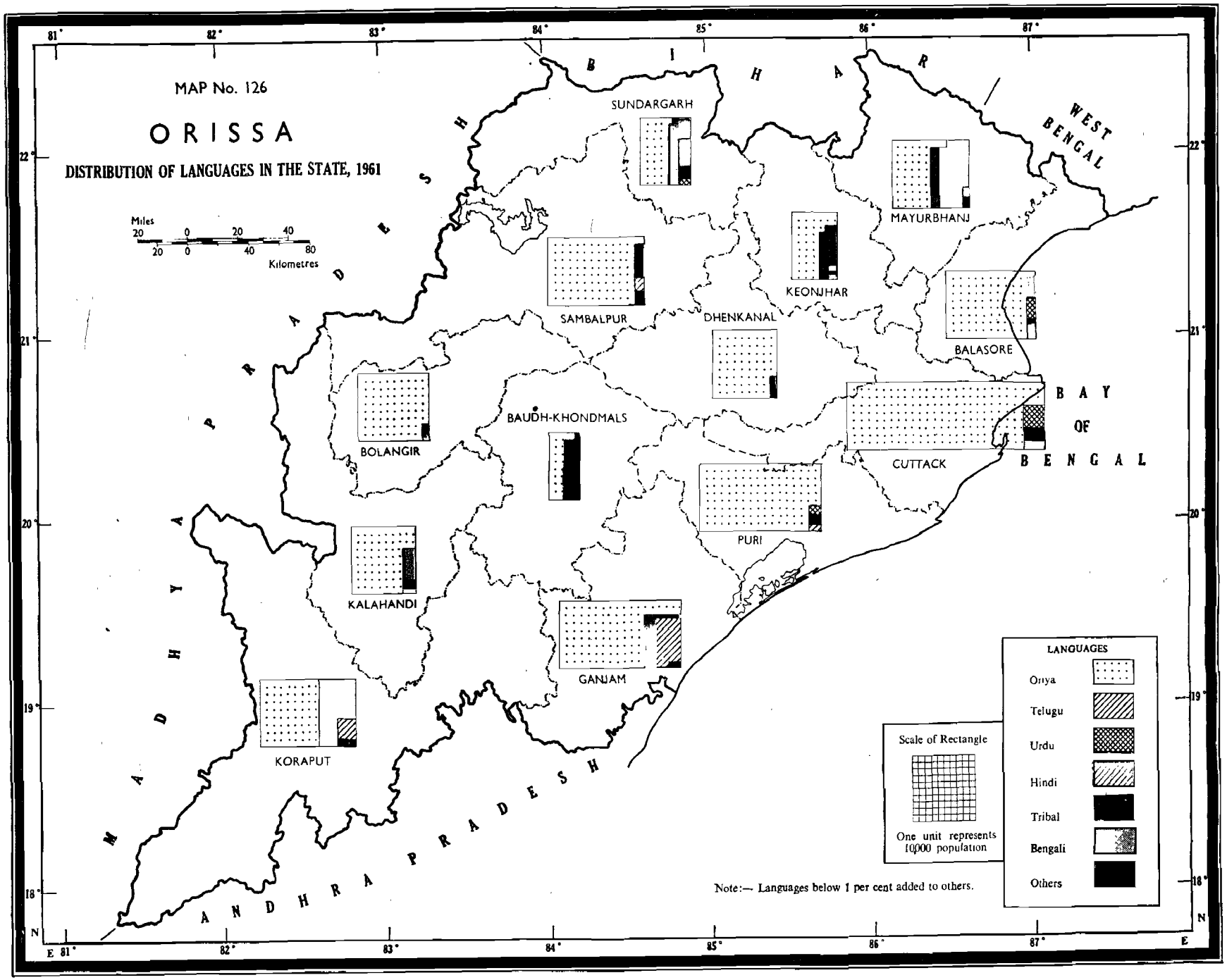
DISTRIBUTION OF POPULATION SPEAKING LANGUAGES OTHER THAN STATE LANGUAGE AS THEIR MOTHER-TONGUE, 1961

The map is drawn on linguistic basis. It shows distribution of population speaking languages other than the State language as their mother-tongue. The State language is Oriya. The proportion of population speaking non-Oriya languages as their mother-tongue in every district is valued in percentage and grouped into six ranges, viz., below 5, 5 to 10, 10 to 20, 20 to 30, 30 to 40 and above 40 per cent. The districts falling under the above groups are shaded by choropleth technique.

The number of non-Oriya speaking population is 3,113,959 constituting 17·74 per cent of the total population of the State. The principal languages spoken by such section of the population are Hindi, Urdu, Telugu and Tribal. Nearly half the population of two districts, namely, Mayurbhanj and Baudh-Khondmals speak languages other than Oriya as mother-tongue. To be exact, it is 47·92 and 46·60 per cent respectively. Bolangir (2·22%) and Dhenkanal (2·94%) have the least non-Oriya speaking population.

The percentage of non-Oriya speaking population in each of the districts during 1961 is given below :

District	Percentage
Mayurbhanj	47·92
Baudh-Khondmals	46·60
Koraput	39·35
Sundargarh	39·33
Keonjhar	30·76
Ganjam	23·95
State Average	17·74
Kalahandi	13·50
Balasore	9·48
Sambalpur	9·18
Cuttack	6·54
Puri	3·70
Dhenkanal	2·94
Bolangir	2·22


MAP No. 126
ORISSA
DISTRIBUTION OF LANGUAGES IN THE STATE, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
MAYURBHANJ
KEONJHAR
SAMBALPUR
DHENKANAL
BALASORE
BAUDH-KHONDMALS
BOLANGIR
CUTTACK
PURI
KALAHANDI
GANJAM
KORAPUT
LANGUAGES
Oriya
Telugu
Urdu
Hindi
Tribal
Bengali
Others
Scale of Rectangle
One unit represents 10000 population
Note:— Languages below 1 per cent added to others.
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 126

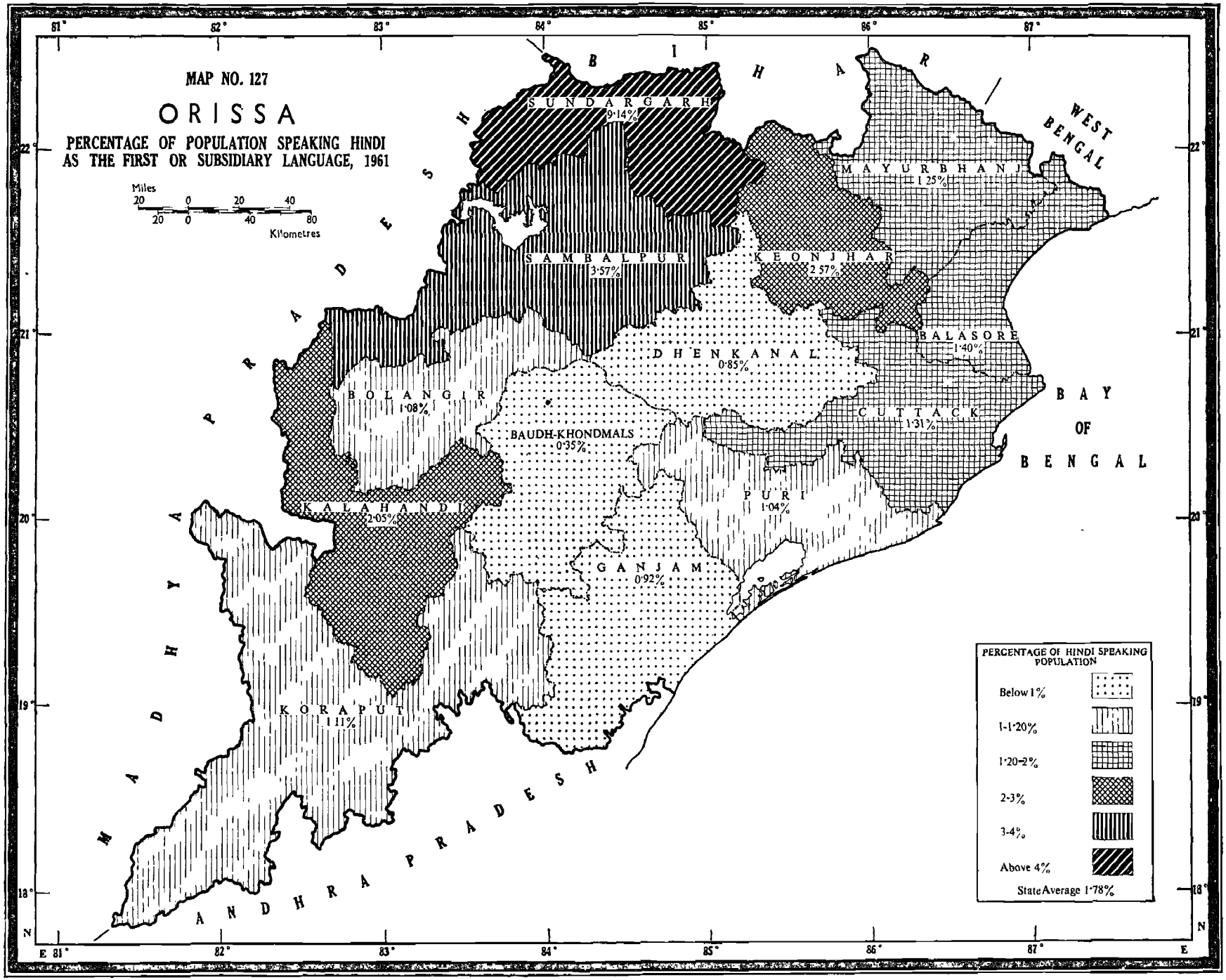
DISTRIBUTION OF LANGUAGES IN THE STATE, 1961

This map furnishes the linguistic pattern obtaining in the State. Different languages spoken and their distribution in the districts is shown in it. Rectangles, proportionate to the total population are drawn inside the respective districts. The height of the rectangles being common in all cases, the length varies in respect of each district according to its total population. The rectangles are divided and shaded to show the proportion of different languages spoken within the districts. The legend explains the utilization of shades and colours.

The State language of Orissa is Oriya, spoken by 14,434,887 persons or 82·26 per cent of the total population. If the dialects of Oriya language, viz., Bhuiya, Dhelki, Jharia, Matia and Saunti are included, the total number of speakers of Oriya will be increased to 14,443,598. Among other languages the important ones are Tribal (12·07%), Telugu (2·24%), Urdu (1·21%), Hindi (0·99%) and others (1·23%). In Mayurbhanj, Koraput and Baudh-Khondmals, tribal languages are prominent being spoken by 44·95 per cent, 31·81 per cent and 46·19 per cent respectively. Ganjam has the largest Telugu speaking population (254,092) in the State.

The following statement gives the percentage of population speaking various languages in the districts during 1961 :

State/ District	Percentage of population speaking					
	Oriya	Tribal language	Hindi	Urdu	Telugu	Others
ORISSA	82·26	12·07	0·99	1·21	2·24	1·23
Kalahandi	86·50	9·24	1·38	0·17	0·29	2·42
Koraput	60·65	31·81	0·81	0·27	5·75	0·71
Sambalpur	90·82	5·12	2·19	0·45	0·31	1·11
Bolangir	97·78	0·85	0·73	0·17	0·23	0·24
Baudh-Khondmals	53·40	46·19	0·10	0·11	0·13	0·07
Ganjam	76·05	9·52	0·22	0·34	13·57	0·30
Sundargarh	60·67	25·71	6·16	1·54	0·61	5·31
Dhenkanal	97·06	1·78	0·49	0·19	0·09	0·39
Puri	96·30	0·43	0·30	1·30	0·91	0·76
Keonjhar	69·24	26·50	1·59	0·49	0·07	2·11
Cuttack	93·46	1·28	0·63	3·15	0·52	0·96
Mayurbhanj	52·08	44·95	0·56	0·66	0·03	1·72
Balasore	90·52	3·31	0·51	3·22	0·23	2·21


MAP NO. 127
ORISSA
PERCENTAGE OF POPULATION SPEAKING HINDI AS THE FIRST OR SUBSIDIARY LANGUAGE, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 9·14%
SAMBALPUR 3·57%
MAYURBHANJ 1·25%
KEONJHAR 2·57%
BALASORE 1·40%
DHENKANAL 0·85%
BOLANGIR 1·08%
CUTTACK 1·31%
BAUDH-KHONDMALS 0·35%
PURI 1·04%
KALAHANDI 2·05%
GANJAM 0·92%
KORAPUT 1·11%
PERCENTAGE OF HINDI SPEAKING POPULATION
Below 1%
1-1·20%
1·20-2%
2-3%
3-4%
Above 4%
State Average 1·78%
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 127

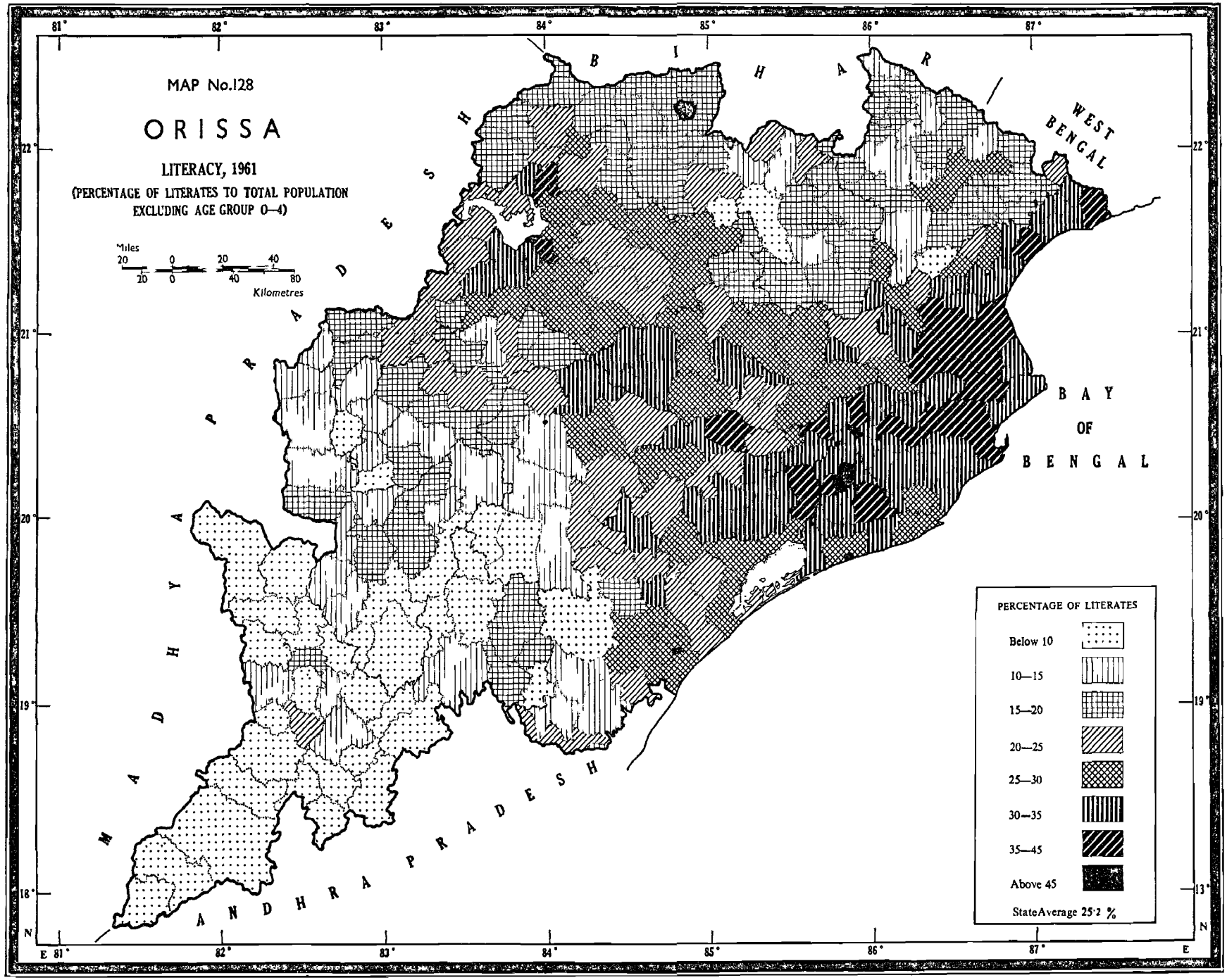
PERCENTAGE OF POPULATION SPEAKING HINDI AS THE FIRST OR SUBSIDIARY LANGUAGE, 1961

The map brings out the percentage of population speaking Hindi as the first or subsidiary language in the districts of Orissa. The percentage of such speakers is divided into six groups, viz., below 1, 1 to 1·20, 1·20 to 2, 2 to 3, 3 to 4 and above 4 per cent. The districts coming under the respective ranges are shaded suitably.

Hindi speaking population in the State numbers 313,261 (1·78%) out of a total of 17,548,846. The percentage of Hindi speakers is highest in Sundargarh (9·14) where 69,439 persons speak the language out of 758,617 in the district. In contrary, Baudh-Khondmals has only 1,790 persons (0·35%) speaking Hindi out of 514,427 population. It is the influence of neighbouring States like Bihar and Madhya Pradesh that the districts in the north-western border of Orissa have a larger number of Hindi speakers.

The following statement gives the percentage figures of Hindi speaking population in the districts:

District	Percentage
Sundargarh	9·14
Sambalpur	3·57
Keonjhar	2·57
Kalahandi	2·05
State Average	1·78
Balasore	1·40
Cuttack	1·31
Mayurbhanj	1·25
Koraput	1·11
Bolangir	1·08
Puri	1·04
Ganjam	0·92
Dhenkanal	0·85
Baudh-Khondmals	0·35


MAP No.128
ORISSA
LITERACY, 1961
(PERCENTAGE OF LITERATES TO TOTAL POPULATION EXCLUDING AGE GROUP 0—4)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE OF LITERATES
Below 10
10—15
15—20
20—25
25—30
30—35
35—45
Above 45
State Average 25·2 %
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 128

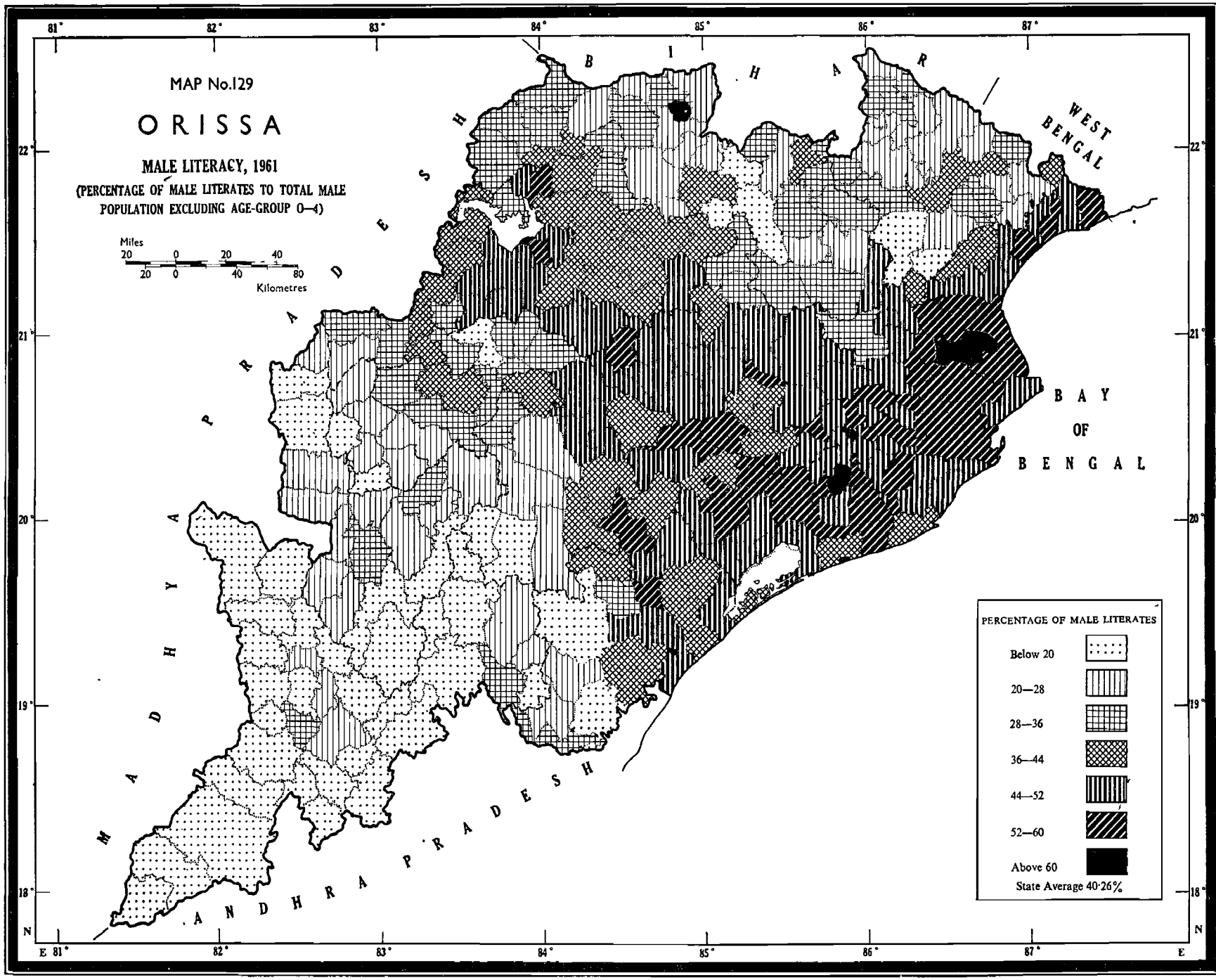
LITERACY, 1961

The proportion of literates to total population excluding age-group 0—4 is shown for every police station during 1961. The proportion is measured in percentage and grouped into eight divisions, viz., below 10, 10 to 15, 15 to 20, 20 to 25, 25 to 30, 30 to 35, 35 to 45 and above 45 per cent. The police stations are hatched by suitable shades.

The percentage of literates in the State is 25·24, the absolute number being 3,801,245 out of 15,061,879 persons in the mentioned age group. The proportion of literates seems to be generally higher in the coastal districts than in the rest. Among the districts as whole units, Balasore has the highest literacy, namely, 34·79, closely followed by Cuttack and Puri with 34·63 and 34·01 per cent respectively. But among the individual police stations, Cuttack City has the highest percentage of literates (61·1), the next being Puri Town PS (53·1). The police stations having the lowest percentage is Venkatapalam (1·9) in Koraput district. Koraput district has the poorest proportion of literates, viz., 9·49 per cent only.

The percentage of literates in the districts is given below :

District	Percentage
Balasore	34·79
Cuttack	34·63
Puri	34·01
Dhenkanal	27·74
Sambalpur	26·29
State Average	25·24
Ganjam	25·09
Sundargarh	22·97
Keonjhar	20·85
Baudh-Khondmals	20·54
Bolangir	16·88
Mayurbhanj	16·72
Kalahandi	13·08
Koraput	9·49


MAP No.129
ORISSA
MALE LITERACY, 1961
(PERCENTAGE OF MALE LITERATES TO TOTAL MALE POPULATION EXCLUDING AGE-GROUP 0—4)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
PERCENTAGE OF MALE LITERATES
Below 20
20—28
28—36
36—44
44—52
52—60
Above 60
State Average 40·26%
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 129

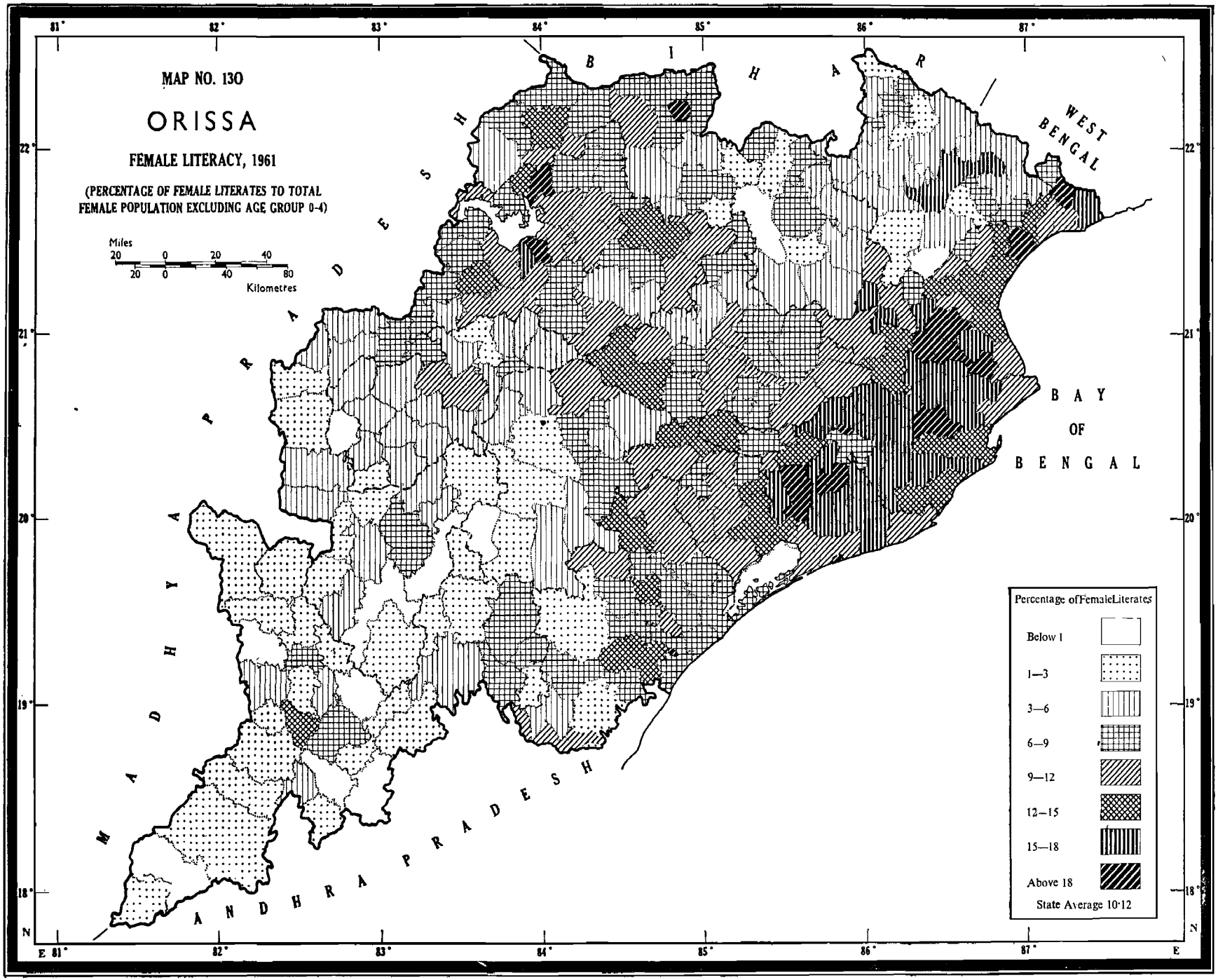
MALE LITERACY, 1961

The map displays the percentage of male literacy in the police stations during 1961. The percentage of male literates in the general population excluding the age-group 0—4 years is divided into seven groups, viz., below 20, 20 to 28, 28 to 36, 36 to 44, 44 to 52, 52 to 60 and above 60 per cent. The police stations are shaded by choropleth method accordingly.

Male population in the State excluding the age-group 0—4 is 7,556,810. The number of male literates is 3,042,004 or 40·26 per cent. The proportion of male literacy, as it appears from the map, is quite high in the coastal regions and in the Mahanadi valley. And in the regions to its north and south, the percentage shrinks down remarkably. Among the districts, Balasore has the highest percentage (53·67) of male literates. Then come Cuttack (52·87) and Puri (52·58) districts. Koraput with 15·35 has the lowest percentage of such literates. But among the police stations, Cuttack City (72·5%) tops the list, followed closely by Bhubaneswar (70·6%). On the other hand, Pottangi PS in Koraput has the least number of male literates, namely, 671 persons or 4·2 per cent only.

The percentage of male literates in the districts is given below:

District	Percentage
Balasore	53·67
Cuttack	52·87
Puri	52·58
Dhenkanal	45.76
Sambalpur	42·50
Ganjam	42·03
State Average	40·26
Baudh-Khondmals	36·20
Sundargarh	35·09
Keonjhar	34·36
Bolangir	28·70
Mayurbhanj	27·93
Kalahandi	23·08
Koraput	15·35


MAP NO. 130
ORISSA
FEMALE LITERACY, 1961
(PERCENTAGE OF FEMALE LITERATES TO TOTAL FEMALE POPULATION EXCLUDING AGE GROUP 0-4)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Percentage of Female Literates
Below 1
1—3
3—6
6—9
9—12
12—15
15—18
Above 18
State Average 10·12
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 130

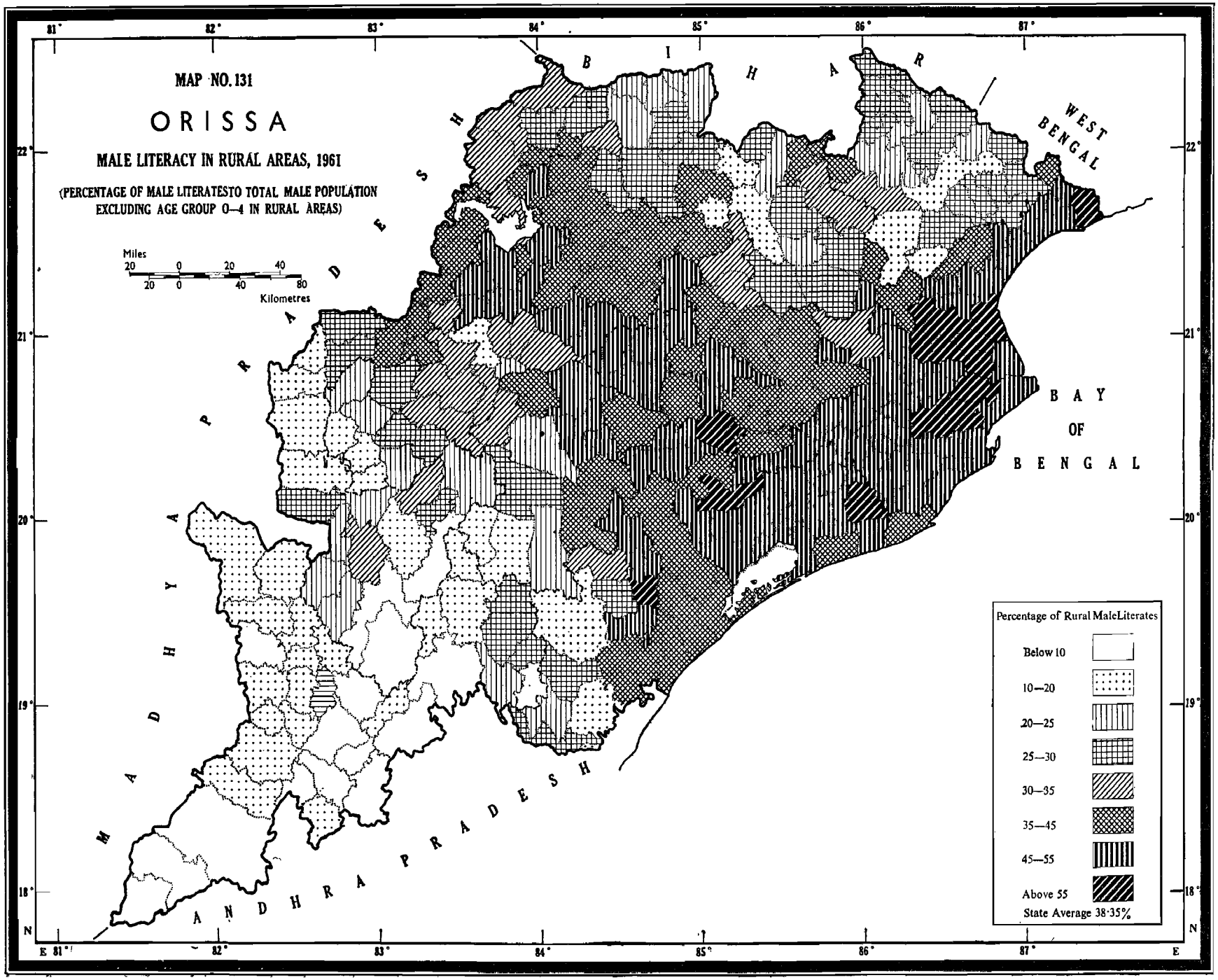
FEMALE LITERACY, 1961

Female literacy in Orissa is poor. This map displays the percentage of female literates to total female population excluding age group 0—4 during 1961. The percentages are grouped into eight divisions, viz., below 1, 1 to 3, 3 to 6, 6 to 9, 9 to 12, 12 to 15, 15 to 18 and above 18 per cent. The police stations are shaded by choropleth method corresponding to their divisions.

Out of a total of 7,505,069 females above the age of 4, the number of literates is only 759,241 amounting to 10·12 per cent. The districts of Cuttack (16·26%), Puri (15·37%) and Balasore (15·14%) rank high among all the districts. Kalahandi and Koraput with 3·22 and 3·43 per cent respectively occupy the position at the bottom of the list. Cuttack City with 44·5 per cent has the highest proportion of female literates. Puri Town PS (38·3%) follows close to it. On the contrary, there are many police stations having less than even 1 per cent. Venkatapalam (0·36) and Pottangi (0·49) both in Koraput have the lowest percentage of female literacy.

The following statement gives the district-wise percentage figures :

District	Percentage
Cuttack	16·26
Puri	15·37
Balasore	15·14
State Average	10·12
Sambalpur	9·90
Ganjam	9·63
Sundargarh	9·45
Dhenkanal	9·38
Keonjhar	6·95
Mayurbhanj	5·35
Baudh-Khondmals	4·96
Bolangir	4·93
Koraput	3·43
Kalahandi	3·22


MAP NO. 131
ORISSA
MALE LITERACY IN RURAL AREAS, 1961
(PERCENTAGE OF MALE LITERATESTO TOTAL MALE POPULATION EXCLUDING AGE GROUP 0—4 IN RURAL AREAS)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Percentage of Rural MaleLiterates
Below 10
10—20
20—25
25—30
30—35
35—45
45—55
Above 55
State Average 38·35%
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 131

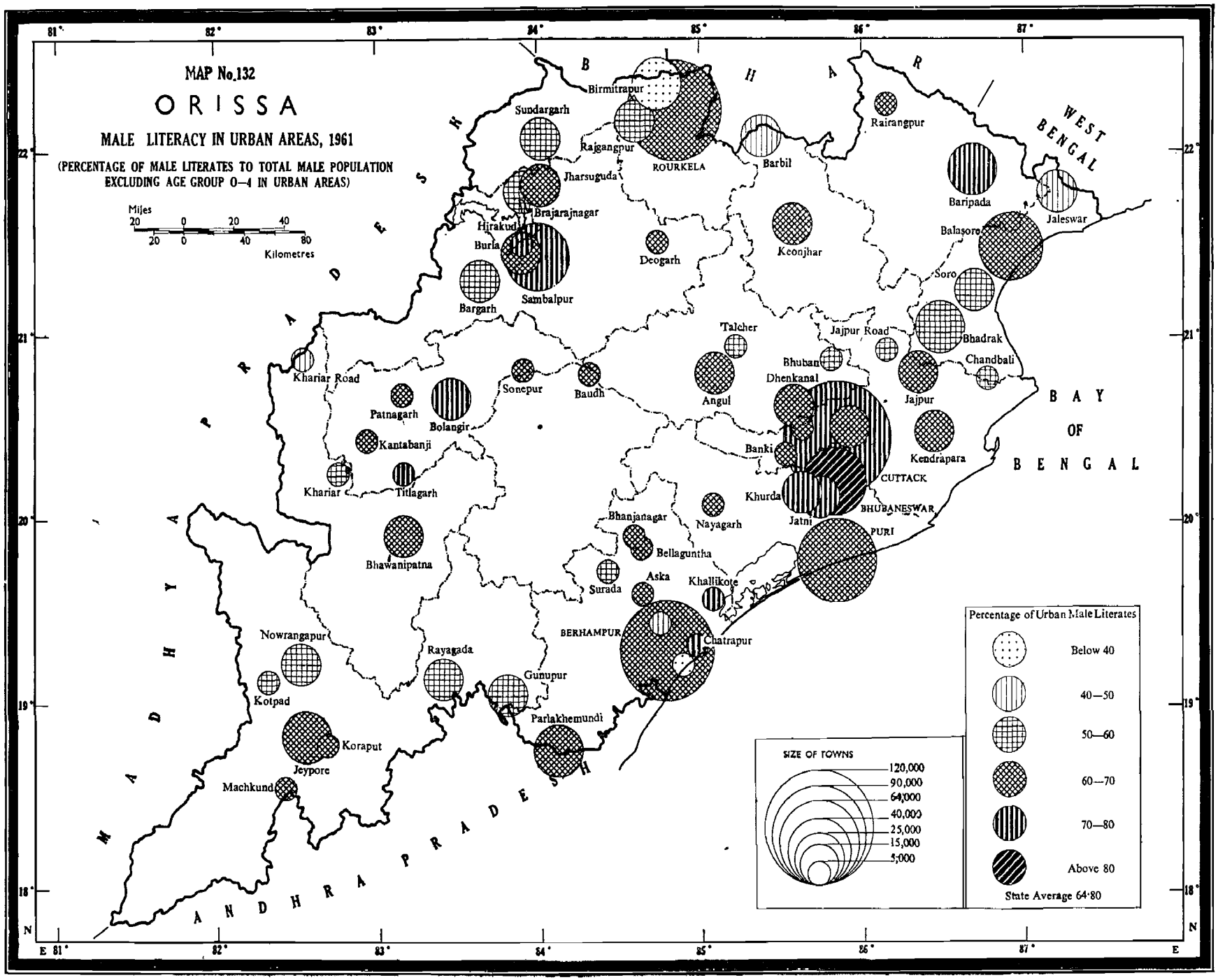
MALE LITERACY IN RURAL AREAS, 1961

This map shows the percentage of male literacy to total male population in rural areas in 1961 after excluding the age-group 0—4. The percentages of different police stations are grouped into eight ranges, viz., below 10, 10 to 20, 20 to 25, 25 to 30, 30 to 35, 35 to 45, 45 to 55 and above 55 per cent. The police stations are hatched by different black shades.

Male population above the age-group 0—4 in the rural areas of the State is 7,011,573 and the number of literates is 2,688,695 or 38·35 per cent. Balasore leads with 53·37 per cent of literates among all the districts. Cuttack (51·36%) and Puri (50·73%) follow one after the other closely. One noticeable feature in the map is that the literacy belt runs from Sambalpur to the coastal districts in a widening angle. Koraput has the lowest percentage, viz., 12·87 only. The police stations having the highest and the lowest percentages of male literates are Dhamnagar PS of Balasore district with 61·82 and Venkatapalam PS of Koraput district with 3·67 only.

Percentage figures of male literacy in the districts is given below:

District	Percentage
Balasore	53·37
Cuttack	51·36
Puri	50·73
Dhenkanal	44·88
Sambalpur	40·33
Ganjam	39·59
State Average	38·35
Baudh-Khondmals	35·83
Keonjhar	33·60
Sundargarh	29·00
Bolangir	26·68
Mayurbhanj	26·67
Kalahandi	22·06
Koraput	12·87


MAP No.132
ORISSA
MALE LITERACY IN URBAN AREAS, 1961
(PERCENTAGE OF MALE LITERATES TO TOTAL MALE POPULATION EXCLUDING AGE GROUP 0—4 IN URBAN AREAS)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
Sundargarh
Rajgangpur
ROURKELA
Barbil
Rairangpur
Jharsuguda
Brajarajnagar
Hirakud
Burla
Sambalpur
Bargarh
Deogarh
Keonjhar
Baripada
Jaleswar
Balasore
Soro
Bhadrak
Chandbali
Jajpur Road
Jajpur
Talcher
Angul
Bhuban
Dhenkanal
Sonepur
Baudh
Khariar Road
Patnagarh
Bolangir
Kantabanji
Khariar
Titlagarh
Banki
Kendrapara
CUTTACK
BHUBANESWAR
PURI
Khurda
Jatni
Nayagarh
Bhanjanagar
Bellaguntha
Bhawanipatna
Surada
Aska
Khallikote
BERHAMPUR
Chatrapur
Nowrangapur
Rayagada
Gunupur
Kotpad
Parlakhemundi
Koraput
Jeypore
Machkund
SIZE OF TOWNS
120,000
90,000
60,000
40,000
25,000
15,000
5,000
Percentage of Urban Male Literates
Below 40
40—50
50—60
60—70
70—80
Above 80
State Average 64·80
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 132

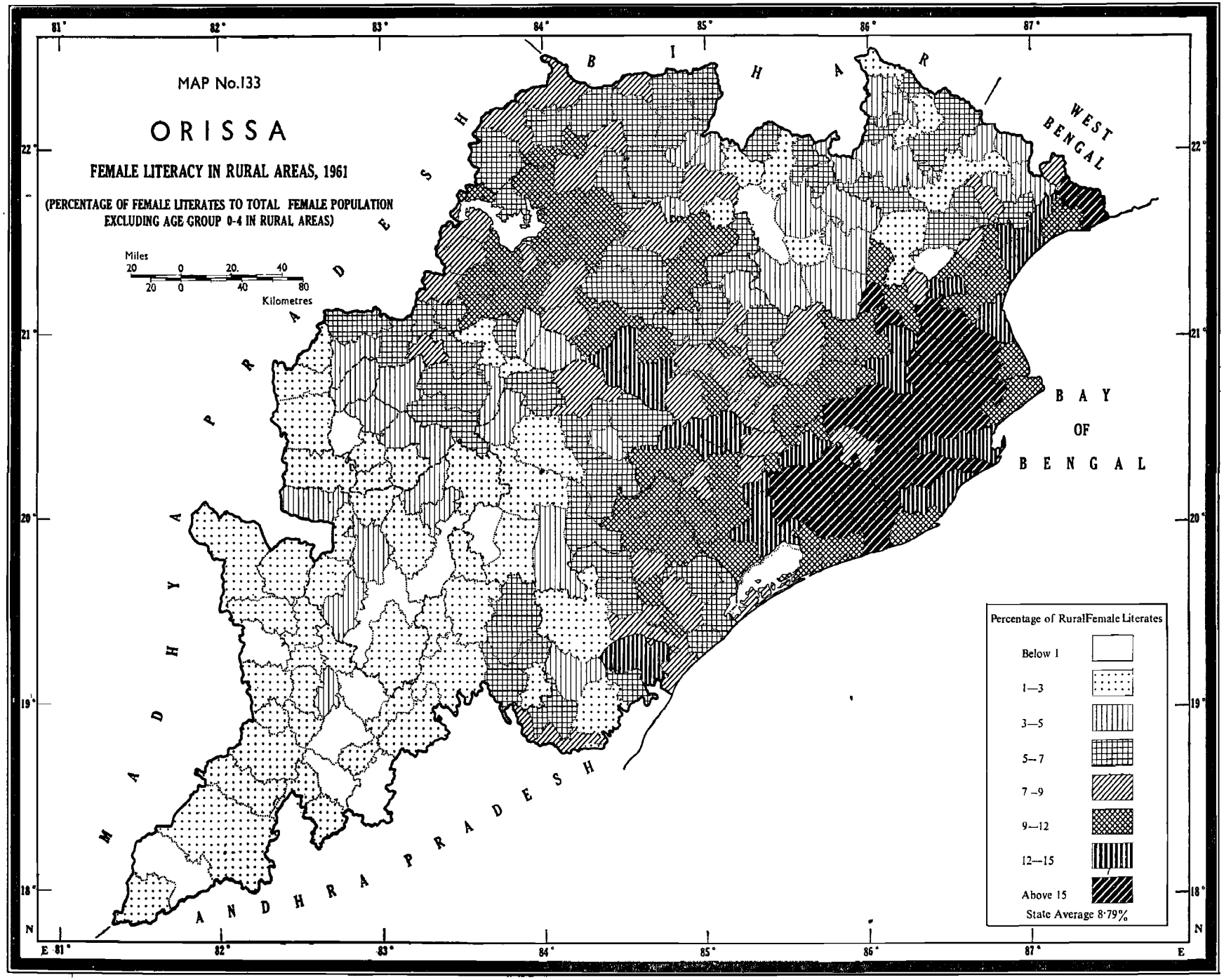
MALE LITERACY IN URBAN AREAS, 1961

The map brings out the percentage of male literates to total male population excluding age-group 0—4 in urban areas in 1961. The percentages are put into six groups, viz., below 40, 40 to 50, 50 to 60, 60 to 70, 70 to 80 and above 80 per cent. The towns are shaded by choropleth method.

There are 545,237 males in the urban areas of the State, of whom 353,309 are literates, bringing the percentage to 64·80. The district with the largest number of male literates is Cuttack containing 74,631 persons who make up 70·12 per cent, but the highest percentage is noticed in Mayurbhanj, viz., 74·07 though the absolute number is only 10,168 persons. Among the towns, Bhubaneswar tops the list of male literacy with 85·79 per cent or 17,957 out of 20,932 males. Birmitrapur with 36·74 has the lowest percentage of male literacy.

The following statement gives the district-wise percentage figures of urban male literacy:

District	Percentage
Mayurbhanj	74·07
Puri	72·49
Cuttack	70·12
Bolangir	69·03
Ganjam	66·47
Sambalpur	65·95
Baudh-Khondmals	64·97
State Average	64·80
Dhenkanal	62·17
Koraput	60·66
Balasore	57·38
Sundargarh	56·65
Kalahandi	56·59
Keonjhar	49·17


MAP No.133
ORISSA
FEMALE LITERACY IN RURAL AREAS, 1961
(PERCENTAGE OF FEMALE LITERATES TO TOTAL FEMALE POPULATION EXCLUDING AGE GROUP 0-4 IN RURAL AREAS)
Miles
20 0 20. 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Percentage of RuralFemale Literates
Below 1
1—3
3—5
5—7
7—9
9—12
12—15
Above 15
State Average 8·79%
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 133

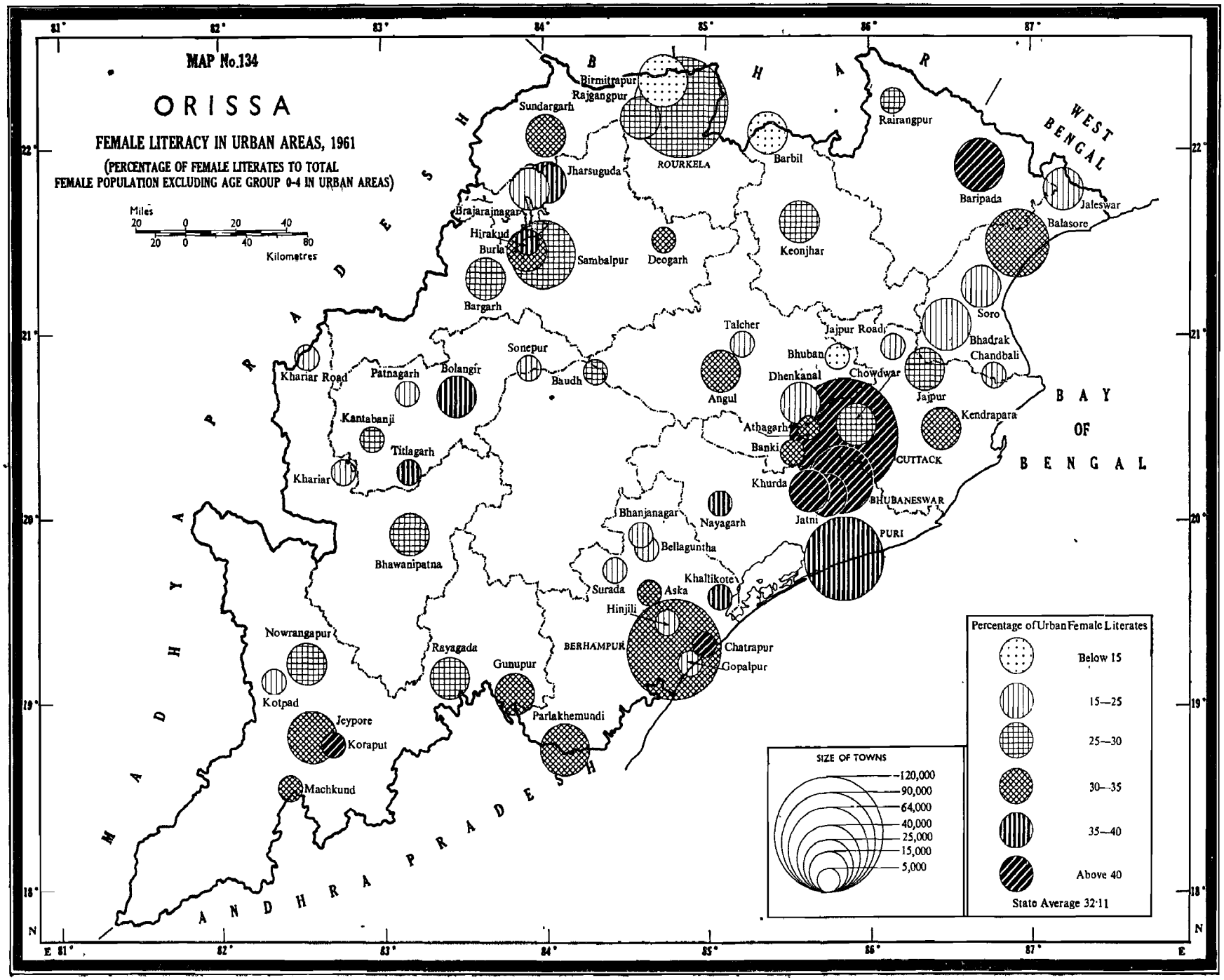
FEMALE LITERACY IN RURAL AREAS, 1961

The map displays the percentage of female literates to total female population excluding age-group 0—4 in rural areas during 1961. The percentage obtained police-stationwise is divided into eight groups, viz., below 1, 1 to 3, 3 to 5, 5 to 7, 7 to 9, 9 to 12, 12 to 15 and above 15 per cent. The police stations are shaded corresponding to their groups.

The total female population in the rural areas of the State is 7,079,349 and the number of literates is 622,560, the percentage being 8·79. Cuttack has 183,465 literates out of 1,236,714 females, constituting 14·38 per cent in the district. Koraput (2·06%) and Kalahandi (2·65%) districts present a grim picture of female literacy. The police stations of Bhandaripokhari (19·42%) in Balasore district, Jatni (19·29%) and Khurda (19·20%) in Puri district have a high percentage of female literacy, while Venkatapalam (0·36%) and Pottangi (0·49%) have very low percentage. In general, female literacy among rural folks is greater in the coastal regions than in the hilly and mountainous interior.

The percentage of female literacy in the districts is given below:

District	Percentage
Cuttack	14·83
Balasore	14·39
Puri	13·43
State Average	8·79
Dhenkanal	8·78
Sambalpur	8·55
Ganjam	7·78
Sundargarh	6·81
Keonjhar	6·51
Baudh-Khondmals	4·69
Mayurbhanj	4·58
Bolangir	3·70
Kalahandi	2·65
Koraput	2·06


MAP No.134
ORISSA
FEMALE LITERACY IN URBAN AREAS, 1961
(PERCENTAGE OF FEMALE LITERATES TO TOTAL FEMALE POPULATION EXCLUDING AGE GROUP 0-4 IN URBAN AREAS)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Birmitrapur
Rajgangpur
Sundargarh
ROURKELA
Barbil
Rairangpur
Baripada
Jaleswar
Balasore
Jharsuguda
Brajarajnagar
Hirakud
Burla
Sambalpur
Deogarh
Keonjhar
Bargarh
Soro
Bhadrak
Chandbali
Talcher
Jajpur Road
Bhuban
Chowdwar
Jajpur
Kendrapara
Sonepur
Baudh
Angul
Dhenkanal
Athagarh
Banki
CUTTACK
Khurda
BHUBANESWAR
Jatni
PURI
Kharlar Road
Patnagarh
Bolangir
Kantabanji
Titlagarh
Kharlar
Bhanjanagar
Nayagarh
Bellaguntha
Bhawanipatna
Surada
Aska
Khallikote
Hinjili
BERHAMPUR
Chatrapur
Gopalpur
Nowrangapur
Rayagada
Gunupur
Parlakhemundi
Kotpad
Jeypore
Koraput
Machkund
SIZE OF TOWNS
120,000
90,000
64,000
40,000
25,000
15,000
5,000
Percentage of Urban Female Literates
Below 15
15—25
25—30
30—35
35—40
Above 40
State Average 32·11
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 134

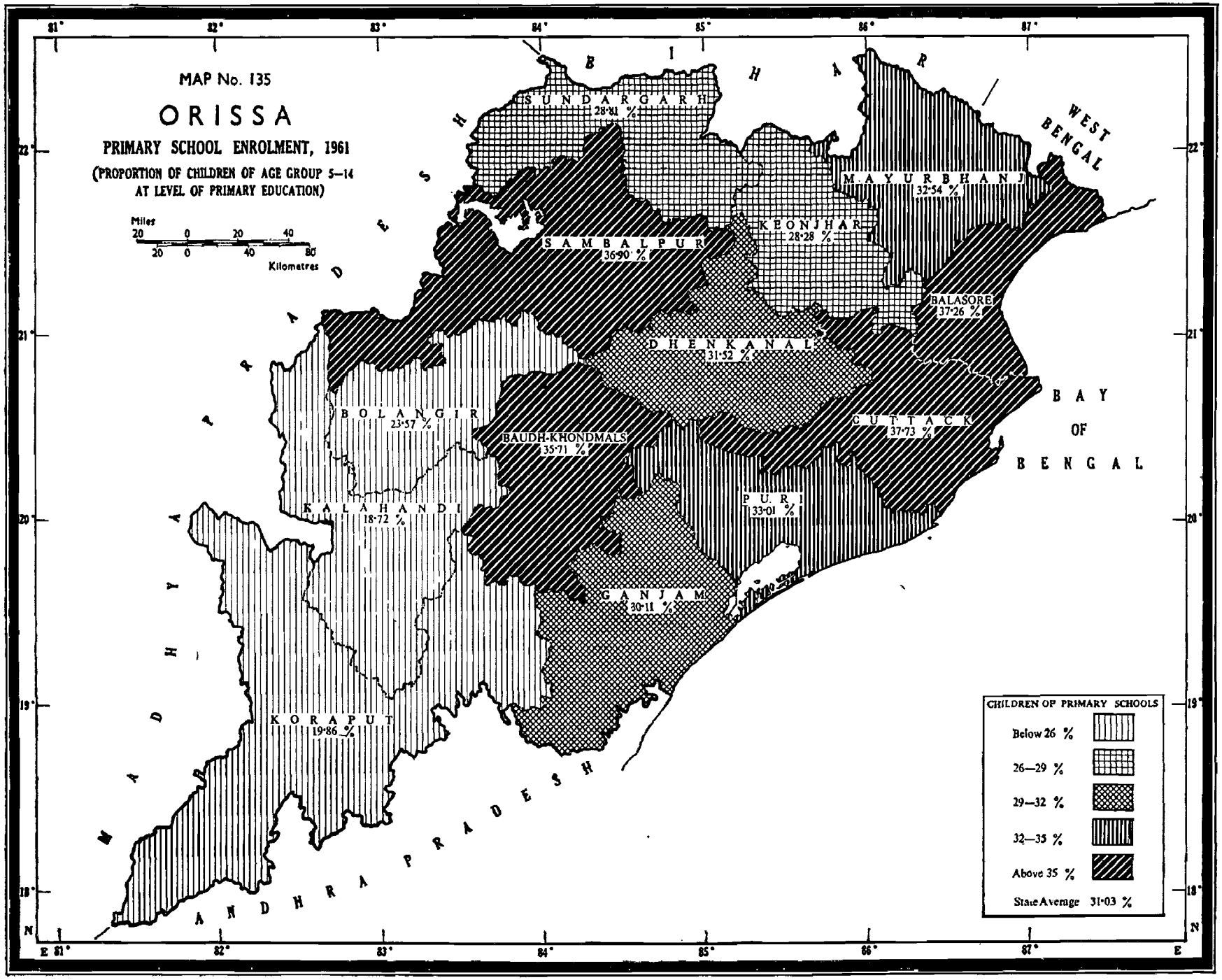
FEMALE LITERACY IN URBAN AREAS, 1961

The previous map dealt with female literacy in rural areas, whereas this one deals with the corresponding aspect in urban areas. The percentage of female literacy to total female population excluding age-group 0—4 in urban areas is grouped into six ranges, viz., below 15, 15 to 25, 25 to 30, 30 to 35, 35 to 40 and above 40 per cent. The individual towns are hatched by suitable shades corresponding to their groups.

There are 62 towns in the State. All these urban localities of the State contain 425,720 females above 0—4 age-group, of whom 136,681 constituting 32·11 per cent are literates. The town having the highest percentage of literate females is Khurda in Puri district with 65·68. Bhubaneswar (47·27%) and Jatni (44·15%) linked with Khurda form a big patch showing female literacy above 40 per cent. Baripada town (46·74%), Cuttack City (44·55%), Chatrapur town (40·08%) and Koraput town (40·27%) are among other urban localities with literacy above 40 per cent. Bhuban (11·07%) in Dhenkanal district has the lowest percentage of literacy.

The statement below gives the percentage figures of female literacy in urban areas of the district:

District	Percentage
Puri	44·14
Mayurbhanj	41·02
Cuttack	39·57
State Average	32·11
Bolangir	31·40
Ganjam	31·18
Koraput	29·84
Sambalpur	28·85
Baudh-Khondmals	28·19
Balasore	25·93
Sundargarh	25·04
Dhenkanal	23·47
Kalahandi	23·17
Keonjhar	18·16


MAP No. 135
ORISSA
PRIMARY SCHOOL ENROLMENT, 1961
(PROPORTION OF CHILDREN OF AGE GROUP 5—14 AT LEVEL OF PRIMARY EDUCATION)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 28·81 %
SAMBALPUR 36·90 %
KEONJHAR 28·28 %
MAYURBHANJ 32·54 %
BALASORE 37·26 %
DHENKANAL 31·52 %
CUTTACK 37·73 %
BOLANGIR 23·57 %
BAUDH-KHONDMALS 35·71 %
KALAHANDI 18·72 %
PURI 33·01 %
GANJAM 30·11 %
KORAPUT 19·86 %
CHILDREN OF PRIMARY SCHOOLS
Below 26 %
26—29 %
29—32 %
32—35 %
Above 35 %
State Average 31·03 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 135

PRIMARY SCHOOL ENROLMENT, 1961

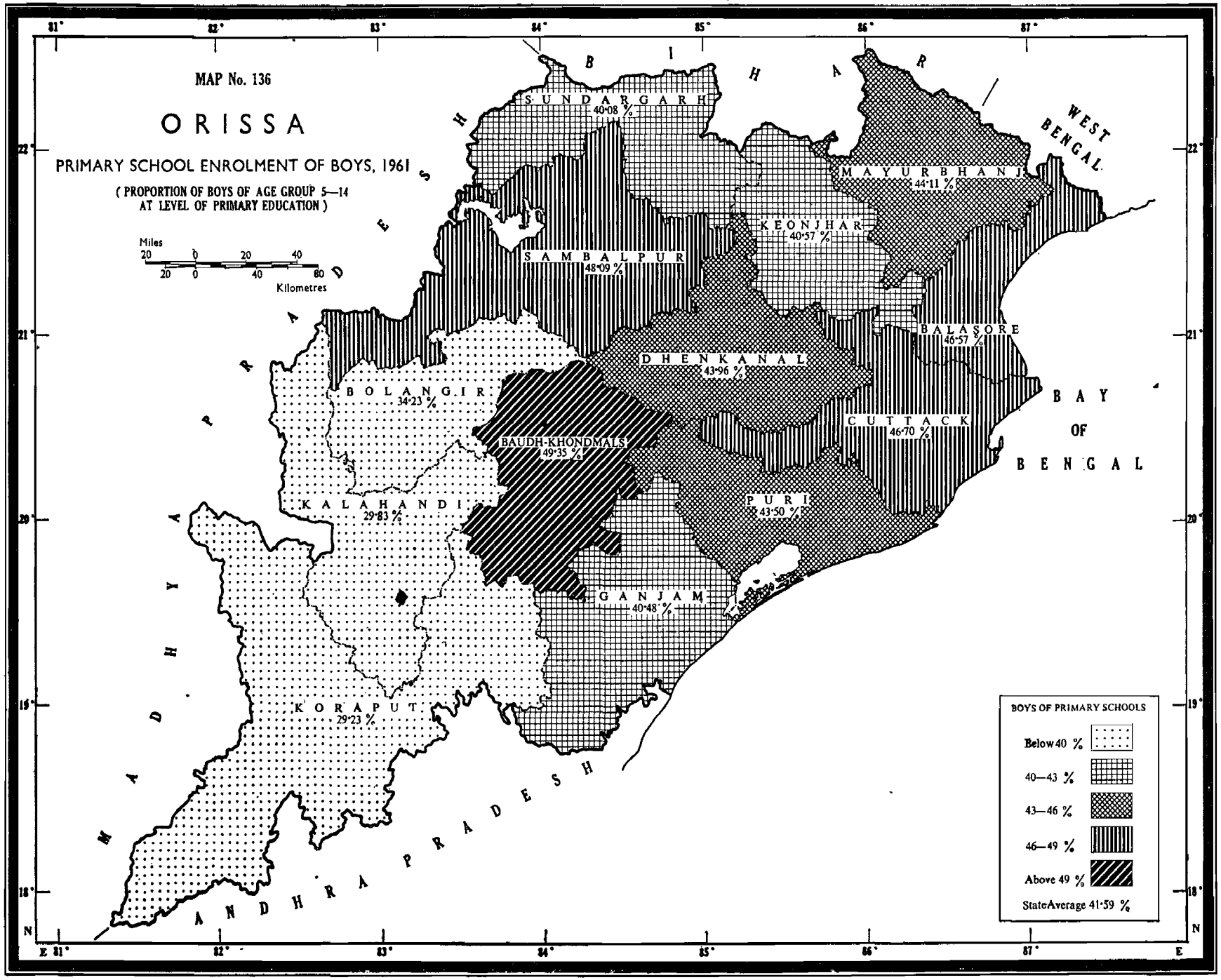
The map brings out the proportion of children of age-group 5—14 at the level of primary education in the districts during 1961. The proportion is worked out in percentage and divided into five ranges, viz., below 26, 26 to 29, 29 to 32, 32 to 35 and above 35 per cent. The districts are shaded suitably corresponding to their ranges.

There are 4,369,236 children in the age-group 5—14 of whom 1,355,757 or 31·03 per cent are enrolled in primary schools. Cuttack has the largest number (709,761) as well as the highest percentage (37·73) of enrolment. The percentage in Balasore and Sambalpur is also high. Kalahandi on the other hand, has the lowest percentage (18·72), while Baudh-Khondmals the least number (45,591) of enrolment in primary schools. Koraput is also quite poor in percentage.

The following statement gives the percentage figures of primary school enrolment in the districts of Orissa :

District	Percentage
Cuttack	37·73
Balasore	37·26
Sambalpur	36·90
Baudh-Khondmals	35·71
Puri	33·01
Mayurbhanj	32·54
Dhenkanal	31·52
State Average	31·03
Ganjam	30·11
Sundargarh	28·81
Keonjhar	28·28
Bolangir	23·57
Koraput	19·86
Kalahandi	18·72

Source—Director of Public Instruction, Orissa


MAP No. 136
ORISSA
PRIMARY SCHOOL ENROLMENT OF BOYS, 1961
(PROPORTION OF BOYS OF AGE GROUP 5—14
AT LEVEL OF PRIMARY EDUCATION)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 40·08 %
SAMBALPUR 48·09 %
KEONJHAR 40·57 %
MAYURBHANJ 44·11 %
BALASORE 46·57 %
DHENKANAL 43·96 %
BOLANGIR 34·23 %
BAUDH-KHONDMALS 49·35 %
CUTTACK 46·70 %
KALAHANDI 29·83 %
PURI 43·50 %
GANJAM 40·48 %
KORAPUT 29·23 %
BOYS OF PRIMARY SCHOOLS
Below 40 %
40—43 %
43—46 %
46—49 %
Above 49 %
StateAverage 41·59 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 136

PRIMARY SCHOOL ENROLMENT OF BOYS, 1961

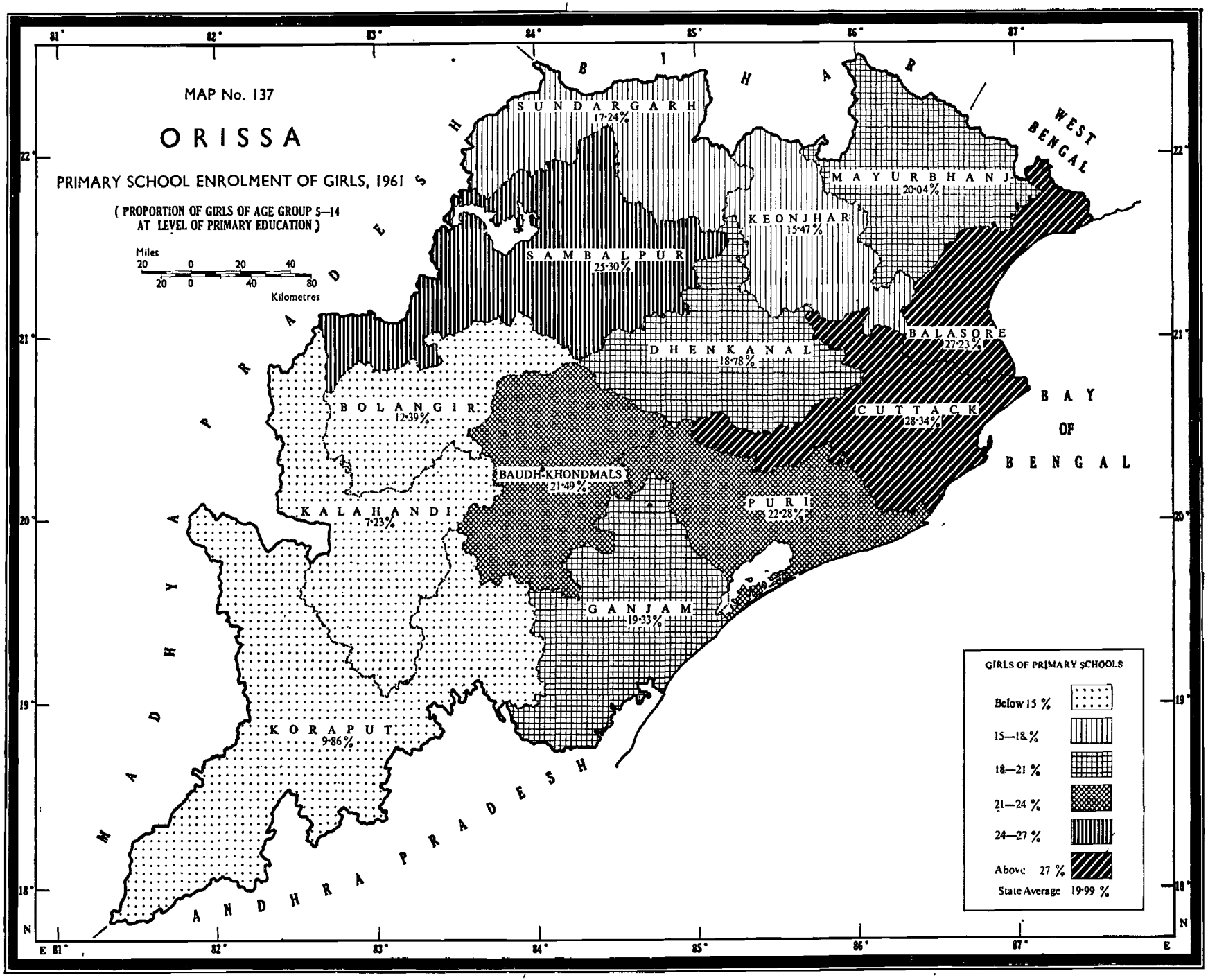
Primary school enrolment of boys in the age-group 5—14 is shown in this map. Proportion of such boys in primary schools to the total population in the age-group concerned is worked out in percentage and grouped into five ranges, viz., below 40, 40 to 43, 43 to 46, 46 to 49 and above 49 per cent. Districts are hatched by different black shades according to the groups in which they fall.

The number of boys in the concerned age-group in Orissa is 2,233,482. Out of this, 928,809 boys or 41·59 per cent are enrolled in primary schools. Largest number of boys are enrolled in Cuttack district (169,496) but the highest percentage is seen in Baudh-Khondmals (49·35), although it has the lowest number of boys, namely, 32,166. The high percentage is due to small aggregate population. Koraput (29·23) and Kalahandi (29·83) have a very low percentage compared to other districts.

The following statement gives the percentage figures of primary school enrolment of boys of age-group 5—14 in the districts during 1961 :

District	Percentage
Baudh-Khondmals	49·35
Sambalpur	48·09
Cuttack	46·70
Balasore	46·57
Mayurbhanj	44·11
Dhenkanal	43·96
Puri	43·50
State Average	41·59
Keonjhar	40·57
Ganjam	40·48
Sundargarh	40·08
Bolangir	34·23
Kalahandi	29·83
Koraput	29·23

Source—Director of Public Instruction, Orissa


MAP No. 137
ORISSA
PRIMARY SCHOOL ENROLMENT OF GIRLS, 1961
(PROPORTION OF GIRLS OF AGE GROUP 5—14
AT LEVEL OF PRIMARY EDUCATION)
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH
17·24%
SAMBALPUR
25·30%
KEONJHAR
15·47%
MAYURBHANJ
20·04%
BALASORE
27·23%
DHENKANAL
18·78%
CUTTACK
28·34%
BOLANGIR
12·39%
BAUDH-KHONDMALS
21·49%
PURI
22·28%
KALAHANDI
7·23%
GANJAM
19·33%
KORAPUT
9·86%
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
GIRLS OF PRIMARY SCHOOLS
Below 15 %
15—18 %
18—21 %
21—24 %
24—27 %
Above 27 %
State Average 19·99 %
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 137

PRIMARY SCHOOL ENROLMENT OF GIRLS, 1961

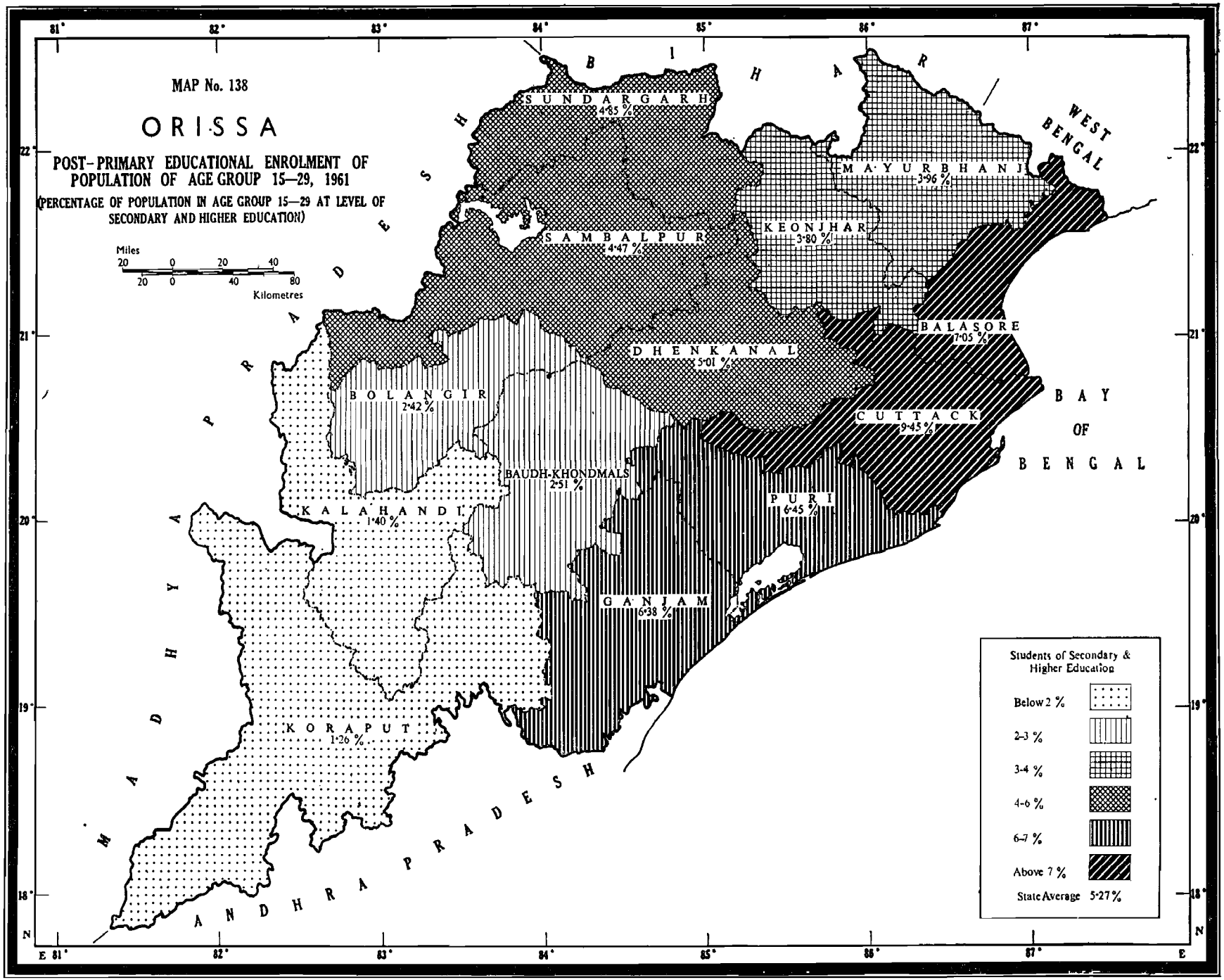
Akin to the previous map, this one brings out the primary school enrolment of girls instead of boys. The accepted age-group is 5 to 14. Proportion is worked out in the same principle for every district and grouped into six ranges, viz., below 15, 15 to 18, 18 to 21, 21 to 24, 24 to 27 and above 27 per cent. Districts are hatched suitably.

Number of girls enrolled is not quite high, being only 426,948 or 19·99 per cent of the total girls (2,135,754) in the mentioned age-group in the State. Cuttack with 28·34 per cent or 98,290 has both the highest percentage and the largest number of girls enrolled. Balasore with 27·23 per cent comes next to Cuttack. In this aspect Baudh-Khondmals lags behind and has only 21·49 per cent of enrolment. Kalahandi, with only 9,931 girls and 7·23 per cent has both the smallest number as well as the lowest percentage of girls enrolled in primary schools.

The statement below gives the percentage figures of primary school enrolment of girls in the given age-group in the districts of Orissa during 1961.

District	Percentage
Cuttack	28·34
Balasore	27·23
Sambalpur	25·30
Puri	22·28
Baudh-Khondmals	21·49
Mayurbhanj	20·04
State Average	19·99
Ganjam	19·33
Dhenkanal	18·78
Sundargarh	17·24
Keonjhar	15·47
Bolangir	12·39
Koraput	9·86
Kalahandi	7·23

Source—Director of Public Instruction, Orissa


MAP No. 138
ORISSA
POST-PRIMARY EDUCATIONAL ENROLMENT OF POPULATION OF AGE GROUP 15—29, 1961
(PERCENTAGE OF POPULATION IN AGE GROUP 15—29 AT LEVEL OF SECONDARY AND HIGHER EDUCATION)
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH 4·85 %
SAMBALPUR 4·47 %
KEONJHAR 3·80 %
MAYURBHANJ 3·96 %
BALASORE 7·05 %
DHENKANAL 5·01 %
BOLANGIR 2·42 %
CUTTACK 9·45 %
BAUDH-KHONDMALS 2·51 %
PURI 6·45 %
KALAHANDI 1·40 %
GANJAM 6·38 %
KORAPUT 1·26 %
BIHAR
WEST BENGAL
BAY OF BENGAL
MADHYA PRADESH
ANDHRA PRADESH
Students of Secondary & Higher Education
Below 2 %
2-3 %
3-4 %
4-6 %
6-7 %
Above 7 %
State Average 5·27 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 138

POST-PRIMARY EDUCATIONAL ENROLMENT OF POPULATION OF AGE-GROUP 15—29, 1961

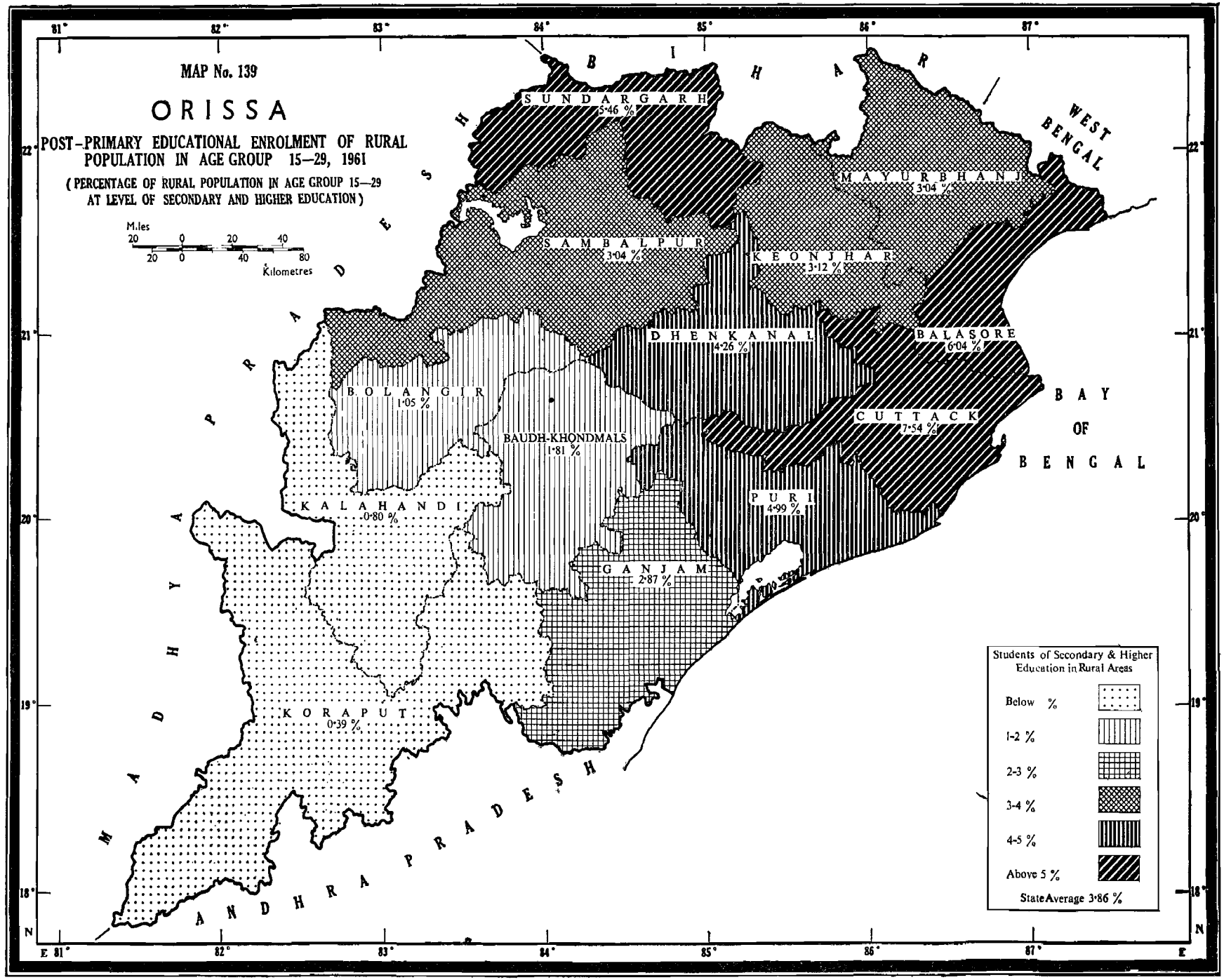
In serial with literacy maps this one brings out the proportion of population in age-group 15—29 at the level of post-primary education or secondary and higher education during 1961. Proportion of population enrolled to the total population under the age-group is worked out in percentage for every district and grouped into six ranges, viz., below 2, 2 to 3, 3 to 4, 4 to 6, 6 to 7 and above 7 per cent. Districts are shaded by choropleth method.

Out of a total of 4,425,106 persons in the mentioned age-group, only 233,145 persons (5·27%) are enrolled in post-primary education in 1961. Cuttack has the largest number (71,762) as well as the highest percentage (9·45) of enrolment. Baudh-Khondmals, as usual, has the smallest number (3,170) of enrolment while Koraput has the lowest percentage, viz., 1·26 only. The coastal districts of Cuttack, Balasore, Puri and Ganjam have a higher percentage than others. On the whole, the enrolment figures are poor throughout the State.

The percentage figures of post-primary education in all the districts is given below:

District	Percentage
Cuttack	9·45
Balasore	7·05
Puri	6·45
Ganjam	6·38
State Average	5·27
Dhenkanal	5·01
Sundargarh	4·85
Sambalpur	4·47
Mayurbhanj	3·96
Keonjhar	3·80
Baudh-Khondmals	2·51
Bolangir	2·42
Kalahandi	1·40
Koraput	1·26

Source—Director of Public Instruction, Orissa


MAP No. 139
ORISSA
POST-PRIMARY EDUCATIONAL ENROLMENT OF RURAL POPULATION IN AGE GROUP 15—29, 1961
(PERCENTAGE OF RURAL POPULATION IN AGE GROUP 15—29 AT LEVEL OF SECONDARY AND HIGHER EDUCATION)
Miles 20 0 20 40
Kilometres 20 0 40 80
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 5·46 %
SAMBALPUR 3·04 %
MAYURBHANJ 3·04 %
KEONJHAR 3·12 %
DHENKANAL 4·26 %
BALASORE 6·04 %
BOLANGIR 1·05 %
BAUDH-KHONDMALS 1·81 %
CUTTACK 7·54 %
KALAHANDI 0·80 %
PURI 4·99 %
GANJAM 2·87 %
KORAPUT 0·39 %
Students of Secondary & Higher Education in Rural Areas
Below %
1-2 %
2-3 %
3-4 %
4-5 %
Above 5 %
State Average 3·86 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N E

MAP No. 139

POST-PRIMARY EDUCATIONAL ENROLMENT OF RURAL POPULATION IN AGE-GROUP 15—29, 1961

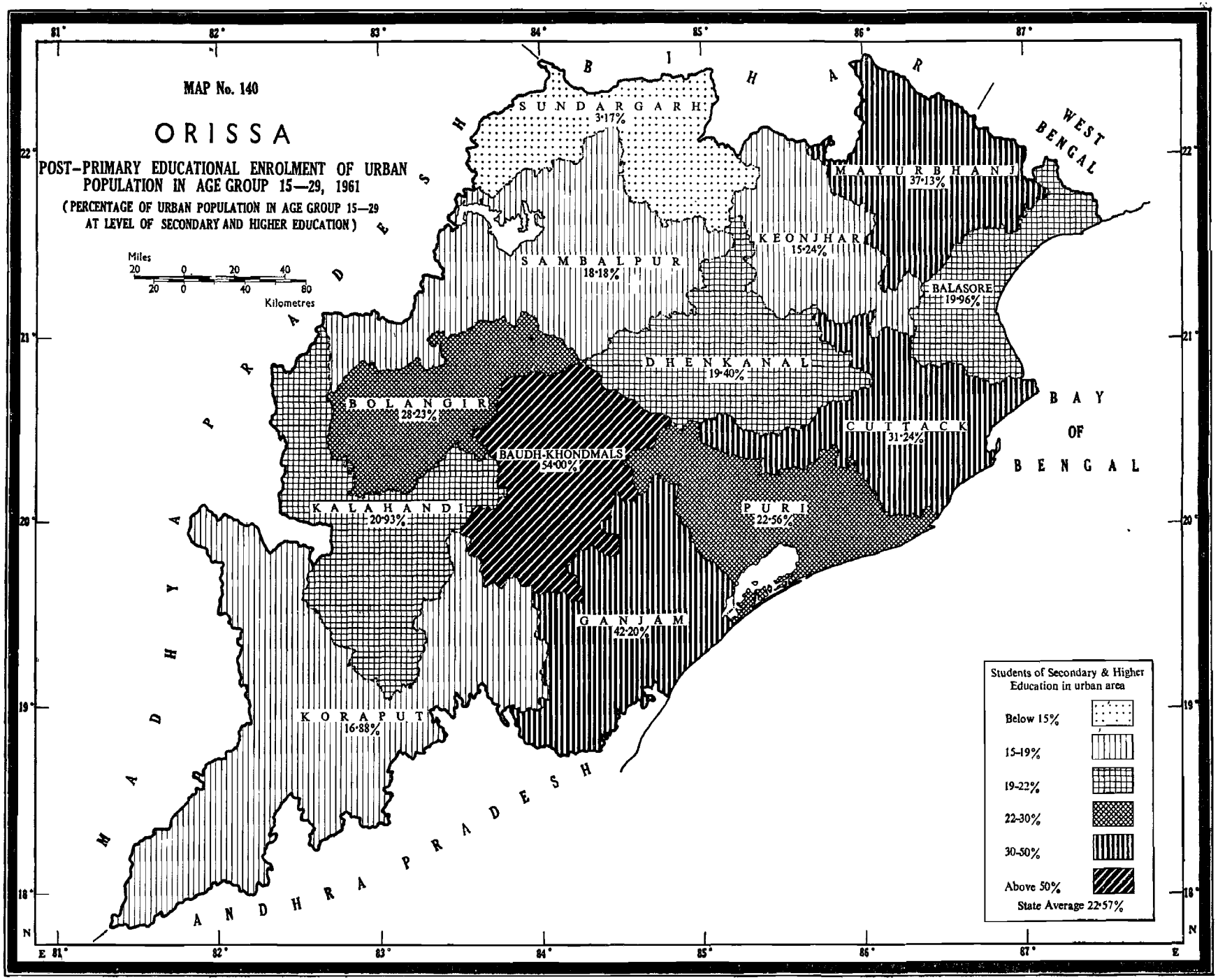
The map displays the percentage of rural population in age-group 15—29 at the level of secondary and higher education in the districts of Orissa in 1961. Percentage of the above population is worked out for every district and put into six ranges, viz., below 1, 1 to 2, 2 to 3, 3 to 4, 4 to 5 and above 5 per cent. The districts coming under the respective ranges are shaded suitably.

Rural population in the required age-group in Orissa is 4,091,932. Of this, 157,937 or 3·86 per cent are enrolled in secondary and higher education. Cuttack (7·54), Balasore (6·04) and Sundargarh (5·46) districts have higher percentages than the rest. Koraput (0·39) has the lowest percentage followed by Kalahandi (0·80). The districts in the eastern half on the whole, have a greater percentage than those of the western half.

The statement below gives the percentage figures of post-primary educational enrolment of rural population in age-group 15—29 in the districts of Orissa :

District	Percentage
Cuttack	7·54
Balasore	6·04
Sundargarh	5·46
Puri	4·99
Dhenkanal	4·26
State Average	3·86
Keonjhar	3·12
Sambalpur	3·04
Mayurbhanj	3·04
Ganjam	2·87
Baudh-Khondmals	1·81
Bolangir	1·05
Kalahandi	0·80
Koraput	0·39

Source—Director of Public Instruction, Orissa


MAP No. 140
ORISSA
POST-PRIMARY EDUCATIONAL ENROLMENT OF URBAN POPULATION IN AGE GROUP 15—29, 1961
(PERCENTAGE OF URBAN POPULATION IN AGE GROUP 15—29 AT LEVEL OF SECONDARY AND HIGHER EDUCATION)
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH 3·17%
SAMBALPUR 18·18%
KEONJHAR 15·24%
MAYURBHANJ 37·13%
BALASORE 19·96%
DHENKANAL 19·40%
BOLANGIR 28·23%
BAUDH-KHONDMALS 54·00%
CUTTACK 31·24%
KALAHANDI 20·93%
PURI 22·56%
GANJAM 42·20%
KORAPUT 16·88%
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Students of Secondary & Higher Education in urban area
Below 15%
15-19%
19-22%
22-30%
30-50%
Above 50%
State Average 22·57%
81° 82° 83° 84° 85° 86° 87° E
22° 21° 20° 19° 18° N

MAP No. 140

POST-PRIMARY EDUCATIONAL ENROLMENT OF URBAN POPULATION IN AGE-GROUP 15—29, 1961

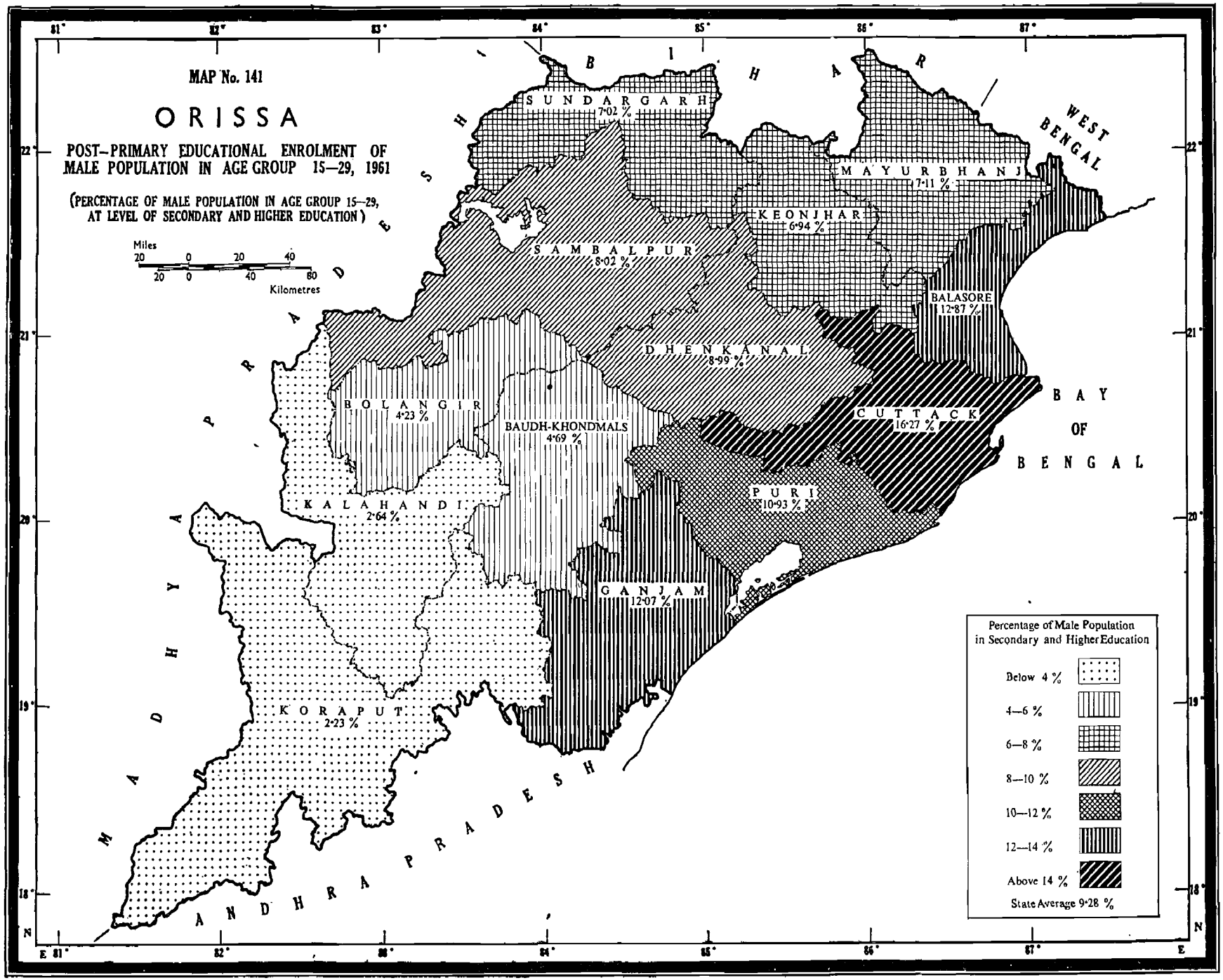
The map brings out the post-primary educational enrolment of urban population in age-group 15—29 in 1961. The proportion is worked out in percentage for every district and grouped into six ranges, viz., below 15, 15 to 17, 17 to 20, 20 to 30, 30 to 50 and above 50 per cent. The districts coming under the above ranges are hatched by suitable shades.

There are 333,174 persons in the mentioned age-group in urban areas of Orissa, of whom 75,208 are students in the secondary and higher education bringing the percentage to 22·57. It is striking to note that Baudh-Khondmals, the otherwise backward district in the State, has 54·00 per cent of its urban population in the concerned age-group enrolled in secondary and higher education. Ganjam and Mayurbhanj have 42·20 per cent and 37·13 per cent respectively. But Cuttack has the largest number of students (19,160) enrolled though the percentage (31·24) is not high. Sundargarh on the other hand, lags far behind with 3·17 per cent only.

The following statement gives the percentage figures of post-primary educational enrolment in the districts in 1961 :

District	Percentage
Baudh-Khondmals	54·00
Ganjam	42·20
Mayurbhanj	37·13
Cuttack	31·24
Bolangir	28·23
State Average	22·57
Puri	22·56
Kalahandi	20·93
Balasore	19·96
Dhenkanal	19·40
Sambalpur	18·18
Koraput	16·88
Keonjhar	15·24
Sundargarh	3·17

Source—Director of Public Instruction, Orissa


MAP No. 141
ORISSA
POST–PRIMARY EDUCATIONAL ENROLMENT OF MALE POPULATION IN AGE GROUP 15—29, 1961
(PERCENTAGE OF MALE POPULATION IN AGE GROUP 15—29, AT LEVEL OF SECONDARY AND HIGHER EDUCATION)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 7·02 %
MAYURBHANJ 7·11 %
KEONJHAR 6·94 %
SAMBALPUR 8·02 %
BALASORE 12·87 %
DHENKANAL 8·99 %
BOLANGIR 4·23 %
BAUDH-KHONDMALS 4·69 %
CUTTACK 16·27 %
PURI 10·93 %
KALAHANDI 2·64 %
GANJAM 12·07 %
KORAPUT 2·23 %
Percentage of Male Population in Secondary and Higher Education
Below 4 %
4—6 %
6—8 %
8—10 %
10—12 %
12—14 %
Above 14 %
State Average 9·28 %
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N

MAP No. 141

POST-PRIMARY EDUCATIONAL ENROLMENT OF MALE POPULATION IN AGE-GROUP 15—29, 1961

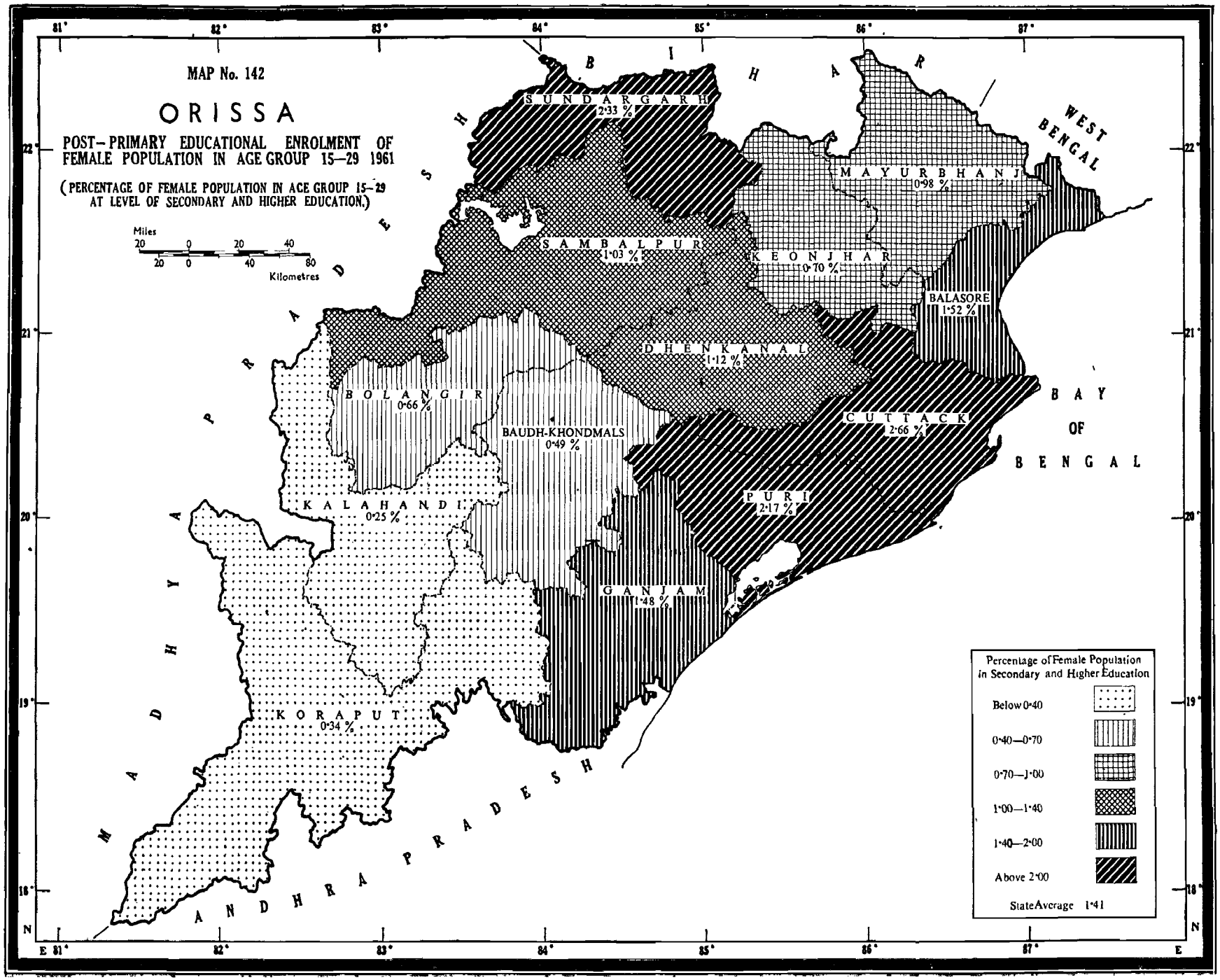
The map brings out the percentage of male population in age-group 15—29 enrolled in secondary and higher education. The percentage of male population in the concerned age-group is worked out for all the districts and divided into seven ranges, viz., below 4, 4 to 6, 6 to 8, 8 to 10, 10 to 12, 12 to 14 and above 14 per cent. The districts are hatched by different black shades according to the range.

In Orissa there were 2,169,717 males in 1961 in the age-group 15—29 of whom 201,364 persons or 9·28 per cent were enrolled in secondary and higher education. Cuttack has the largest number as well as highest percentage of males enrolled in higher and secondary education, viz., 61,659 persons or 16·27 per cent. Koraput among the districts, has the lowest percentage of 2·23 only. But the poorest number of enrolment is found in Baudh-Khondmals, where it is 2,847 persons. The coastal districts seem to have a greater percentage of enrolment.

The following statement gives the number and percentage of males enrolled in secondary and higher education in 1961 :

District	Students in secondary and higher education	Percentage
Cuttack	61,659	16·27
Balasore	22,654	12·87
Ganjam	25,039	12·07
Puri	25,003	10·93
State	201,364	9·28
Dhenkanal	11,078	8·99
Sambalpur	14,603	8·02
Mayurbhanj	10,769	7·11
Sundargarh	7,958	7·02
Keonjhar	6,607	6·94
Baudh-Khondmals	2,847	4·69
Bolangir	5,420	4·23
Kalahandi	3,165	2·64
Koraput	4,562	2·23

Source—Director of Public Instruction, Orissa


MAP No. 142
ORISSA
POST-PRIMARY EDUCATIONAL ENROLMENT OF FEMALE POPULATION IN AGE GROUP 15–29 1961
(PERCENTAGE OF FEMALE POPULATION IN ACE GROUP 15–29 AT LEVEL OF SECONDARY AND HIGHER EDUCATION.)
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 2·33 %
SAMBALPUR 1·03 %
MAYURBHANJ 0·98 %
KEONJHAR 0·70 %
BALASORE 1·52 %
DHENKANAL 1·12 %
BOLANGIR 0·66 %
BAUDH-KHONDMALS 0·49 %
CUTTACK 2·66 %
PURI 2·17 %
KALAHANDI 0·25 %
GANJAM 1·48 %
KORAPUT 0·34 %
Percentage of Female Population in Secondary and Higher Education
Below 0·40
0·40—0·70
0·70—1·00
1·00—1·40
1·40—2·00
Above 2·00
State Average 1·41
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 142

POST-PRIMARY EDUCATIONAL ENROLMENT OF FEMALE POPULATION IN AGE-GROUP 15—29, 1961

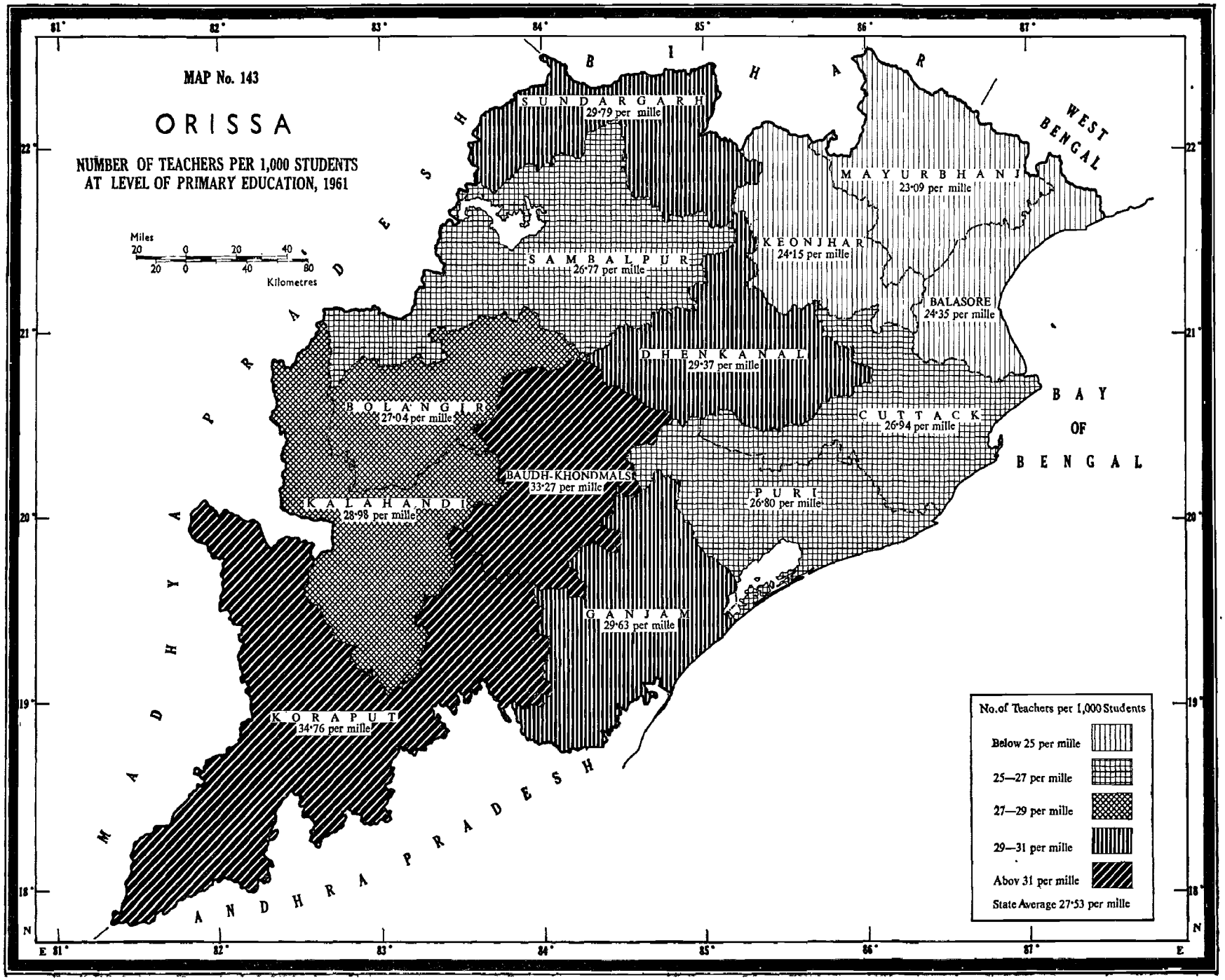
The map shows the percentage of post-primary educational enrolment of female population in age-group 15—29 in all the districts during 1961. The percentage of females enrolled in the mentioned age-group is worked out and classed into six groups, viz., below 0·40, 0·40 to 0·70, 0·70 to 1·00, 1·00 to 1·40, 1·40 to 2·00 and above 2·00 per cent. The districts falling under the above ranges are hatched by suitable shades.

Out of a total number of 2,255,389 females in Orissa in the concerned age-group, only 31,781 women (1·41%) were admitted into secondary schools and colleges during 1961. Female education at the secondary or higher level has not made adequate progress. Cuttack district alone has 10,103 females which is almost a third of the State figure and tops over other districts with 2·66 per cent. On the other hand, Kalahandi has only 0·25 per cent of female enrolment in the age-group 15—29. Kalahandi and Baudh-Khondmals have only 320 and 323 female students respectively studying in secondary and higher educational institutions.

The statement below gives the number and percentage of post-primary educational enrolment of females in the above age-group in all the districts of Orissa :

District	No. of girls enrolled	Percentage
Cuttack	10,103	2·66
Sundargarh	2,271	2·33
Puri	5,188	2·17
Balasore	2,805	1·52
Ganjam	3,569	1·48
State	31,781	1·41
Dhenkanal	1,408	1·12
Sambalpur	1,942	1·03
Mayurbhanj	1,570	0·98
Keonjhar	677	0·70
Bolangir	865	0·66
Baudh-Khondmals	323	0·49
Koraput	740	0·34
Kalahandi	320	0·25

Source—Director of Public Instruction, Orissa


MAP No. 143
ORISSA
NUMBER OF TEACHERS PER 1,000 STUDENTS AT LEVEL OF PRIMARY EDUCATION, 1961
Miles 20 0 20 40
20 0 40 80 Kilometres
SUNDARGARH 29·79 per mille
SAMBALPUR 26·77 per mille
KEONJHAR 24·15 per mille
MAYURBHANJ 23·09 per mille
BALASORE 24·35 per mille
DHENKANAL 29·37 per mille
BOLANGIR 27·04 per mille
CUTTACK 26·94 per mille
BAUDH-KHONDMALS 33·27 per mille
KALAHANDI 28·98 per mille
PURI 26·80 per mille
GANJAM 29·63 per mille
KORAPUT 34·76 per mille
BIHAR
WEST BENGAL
ORISSA
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
No.of Teachers per 1,000 Students
Below 25 per mille
25—27 per mille
27—29 per mille
29—31 per mille
Abov 31 per mille
State Average 27·53 per mille

MAP No. 143

NUMBER OF TEACHERS PER 1,000 STUDENTS AT LEVEL OF PRIMARY EDUCATION, 1961

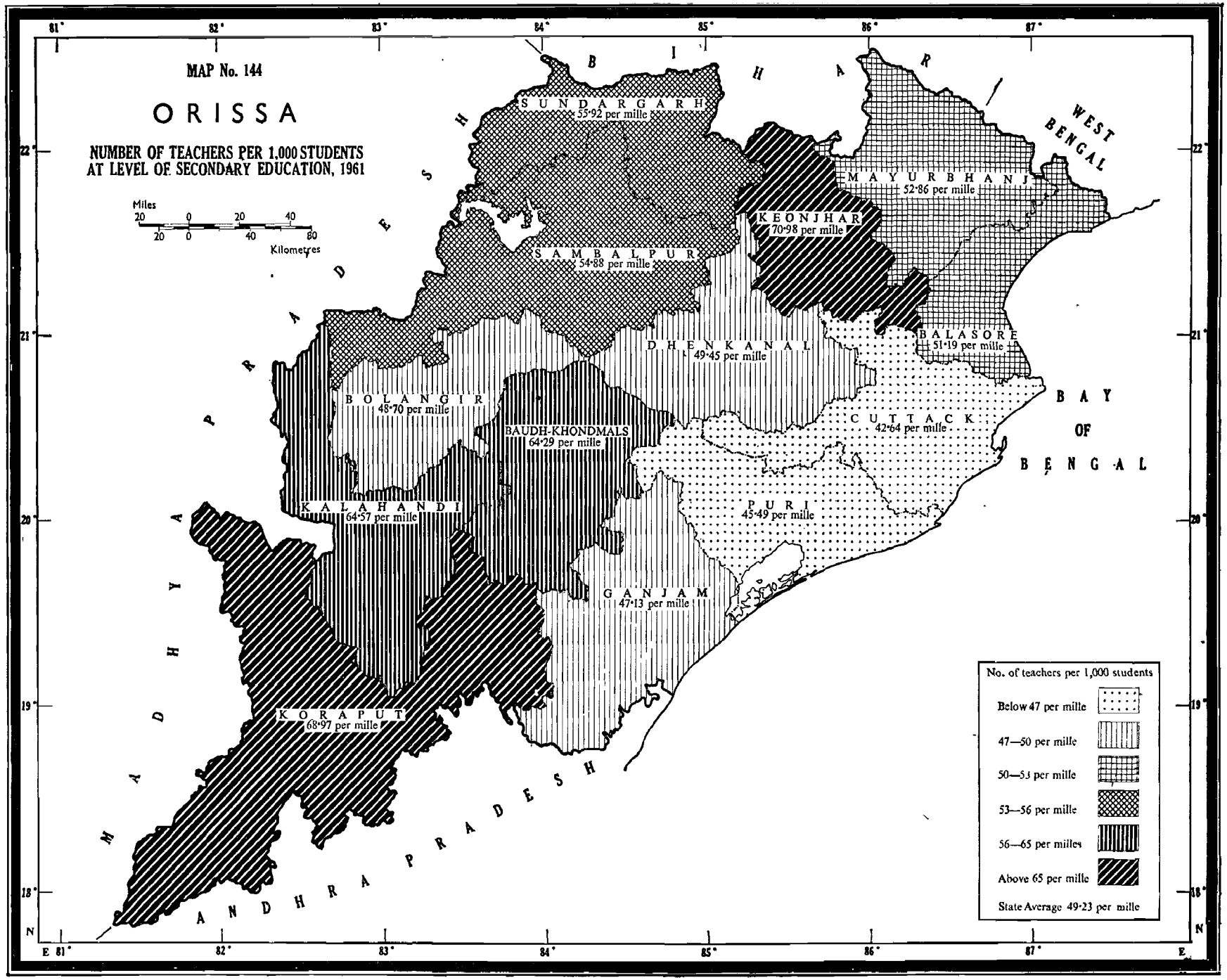
The map displays the number of teachers for every 1,000 students at the primary level of education in the districts of Orissa in 1961. The number of teachers has been grouped into 5 ranges, viz., below 25 per thousand, 25 to 27, 27 to 29, 29 to 31, and above 31. The districts are hatched by suitable shades.

The number of teachers at the primary level of education in the whole of Orissa is 37,322 whereas the number of students in the primary schools is 1,355,777. Thus the average is 27·53 teachers for every 1,000 students. Cuttack among the districts has the largest number of teachers (7,213), but the average is only 26·94 as the number of students is very large (267,786). It is remarkable to note that Koraput and Baudh-Khondmals have quite a high average, namely, 34·76 and 33·27 respectively. Keonjhar has the least number of teachers (1,359) among the districts, while Mayurbhanj has the least average (23·09) of teachers allotted for every 1,000 students.

The following statement gives the number as well as the average number of teachers engaged for every 1,000 students at the level of Primary education in the districts of Orissa during 1961 :

District	No. of teachers	Proportion to 1,000 students
Koraput	2,517	34·76
Baudh-Khondmals	1,517	33·27
Sundargarh	1,591	29·79
Ganjam	4,295	29·63
Dhenkanal	2,517	29·37
Kalahandi	1,515	28·98
State	37,322	27·53
Bolangir	1,794	27·04
Cuttack	7,213	26·94
Puri	4,151	26·80
Sambalpur	3,431	26·77
Balasore	3,023	24·35
Keonjhar	1,359	24·15
Mayurbhanj	2,399	23·09

Source—Director of Public Instruction, Orissa


MAP No. 144
ORISSA
NUMBER OF TEACHERS PER 1,000 STUDENTS AT LEVEL OF SECONDARY EDUCATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
55·92 per mille
SAMBALPUR
54·88 per mille
MAYURBHANJ
52·86 per mille
KEONJHAR
70·98 per mille
DHENKANAL
49·45 per mille
BALASORE
51·19 per mille
BOLANGIR
48·70 per mille
BAUDH-KHONDMALS
64·29 per mille
CUTTACK
42·64 per mille
KALAHANDI
64·57 per mille
PURI
45·49 per mille
GANJAM
47·13 per mille
KORAPUT
68·97 per mille
No. of teachers per 1,000 students
Below 47 per mille
47—50 per mille
50—53 per mille
53—56 per mille
56—65 per milles
Above 65 per mille
State Average 49·23 per mille
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 144

NUMBER OF TEACHERS PER 1,000 STUDENTS AT LEVEL OF SECONDARY EDUCATION, 1961

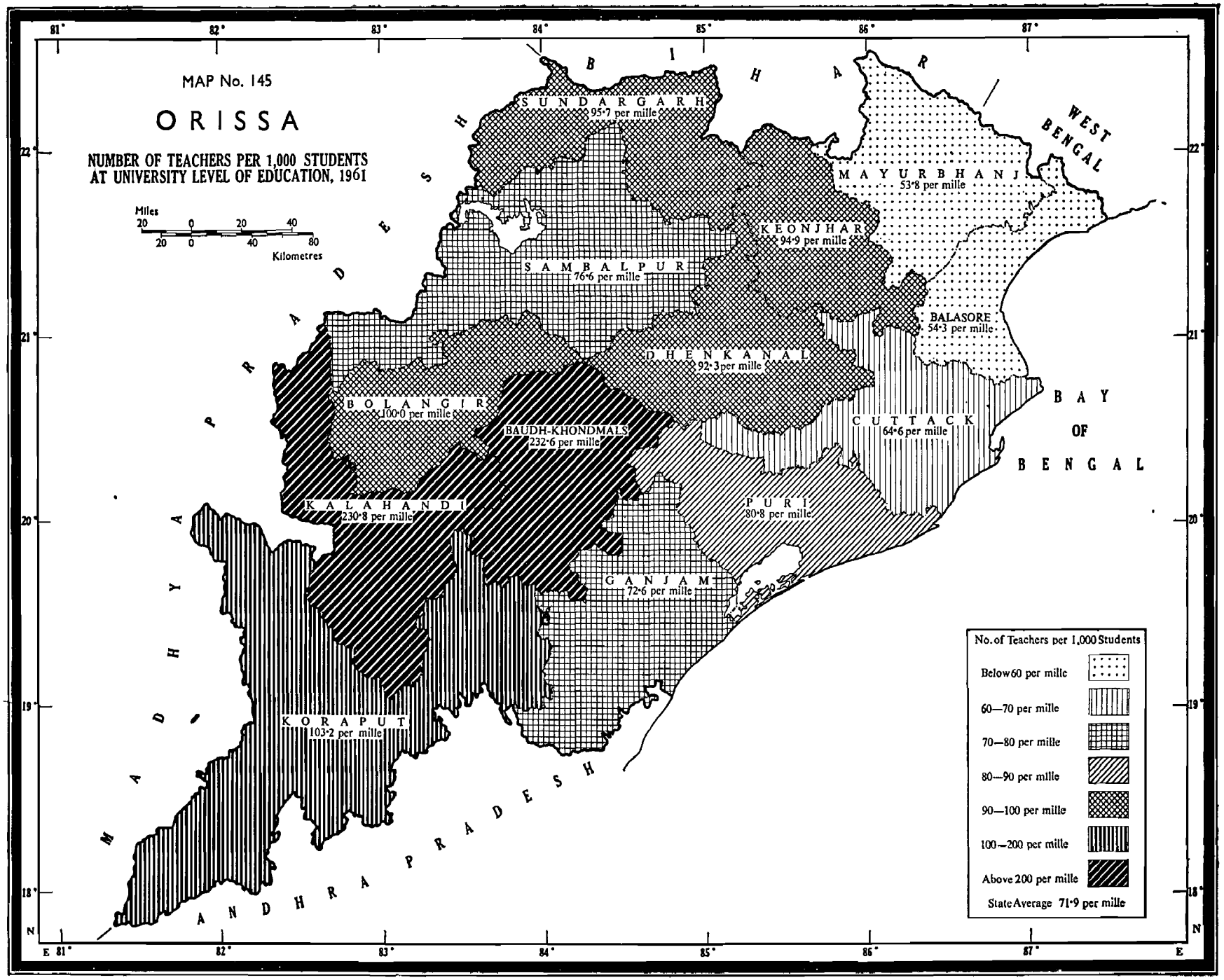
The map is intended to show the number of teachers available for every 1,000 students at the level of secondary education. The proportion has been worked out and classified into six groups, viz., below 47, 47 to 50, 50 to 53, 53 to 56, 56 to 65 and above 65 per thousand students. All the districts are hatched by choropleth method.

For 213,341 students at the level of secondary education, there are only 10,502 teachers employed. In other words, for every 1,000 students there are about 49·23 teachers in the State. This number is slightly better than that of the teachers available for primary school students. Cuttack, as expected, has the largest number of teachers (2,775) but the proportion is very poor, being only 42·64 per 1,000 students, the lowest in the State. Baudh-Khondmals has only 198 teachers, which forms the smallest district contingent. But Keonjhar with only 492 teachers happens to maintain the highest proportion, that is about 70·98 for 1,000 students. Koraput follows next with 68·97 per thousand. The position of Cuttack falls far behind other districts due to high numerical strength of students (65,077), even though the number of teachers is high.

The following statement gives the proportion and number of teachers in districts of Orissa :

District	No. of teachers	Proportion to 1,000 students
Keonjhar	492	70·98
Koraput	355	68·97
Kalahandi	216	64·57
Baudh-Khondmals	198	64·29
Sundargarh	545	55·92
Sambalpur	786	54·88
Mayurbhanj	611	52·86
Balasore	1,196	51·19
Dhenkanal	594	49·45
State	10,502	49·23
Bolangir	288	48·70
Ganjam	1,208	47·13
Puri	1,238	45·49
Cuttack	2,775	42·64

Source—Director of Public Instruction, Orissa


MAP No. 145
ORISSA
NUMBER OF TEACHERS PER 1,000 STUDENTS AT UNIVERSITY LEVEL OF EDUCATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
95·7 per mille
MAYURBHANJ
53·8 per mille
KEONJHAR
94·9 per mille
SAMBALPUR
76·6 per mille
BALASORE
54·3 per mille
DHENKANAL
92·3 per mille
BOLANGIR
100·0 per mille
BAUDH-KHONDMALS
232·6 per mille
CUTTACK
64·6 per mille
KALAHANDI
230·8 per mille
PURI
80·8 per mille
GANJAM
72·6 per mille
KORAPUT
103·2 per mille
No. of Teachers per 1,000 Students
Below 60 per mille
60—70 per mille
70—80 per mille
80—90 per mille
90—100 per mille
100—200 per mille
Above 200 per mille
State Average 71·9 per mille
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 145

NUMBER OF TEACHERS PER 1,000 STUDENTS AT THE UNIVERSITY LEVEL OF EDUCATION, 1961

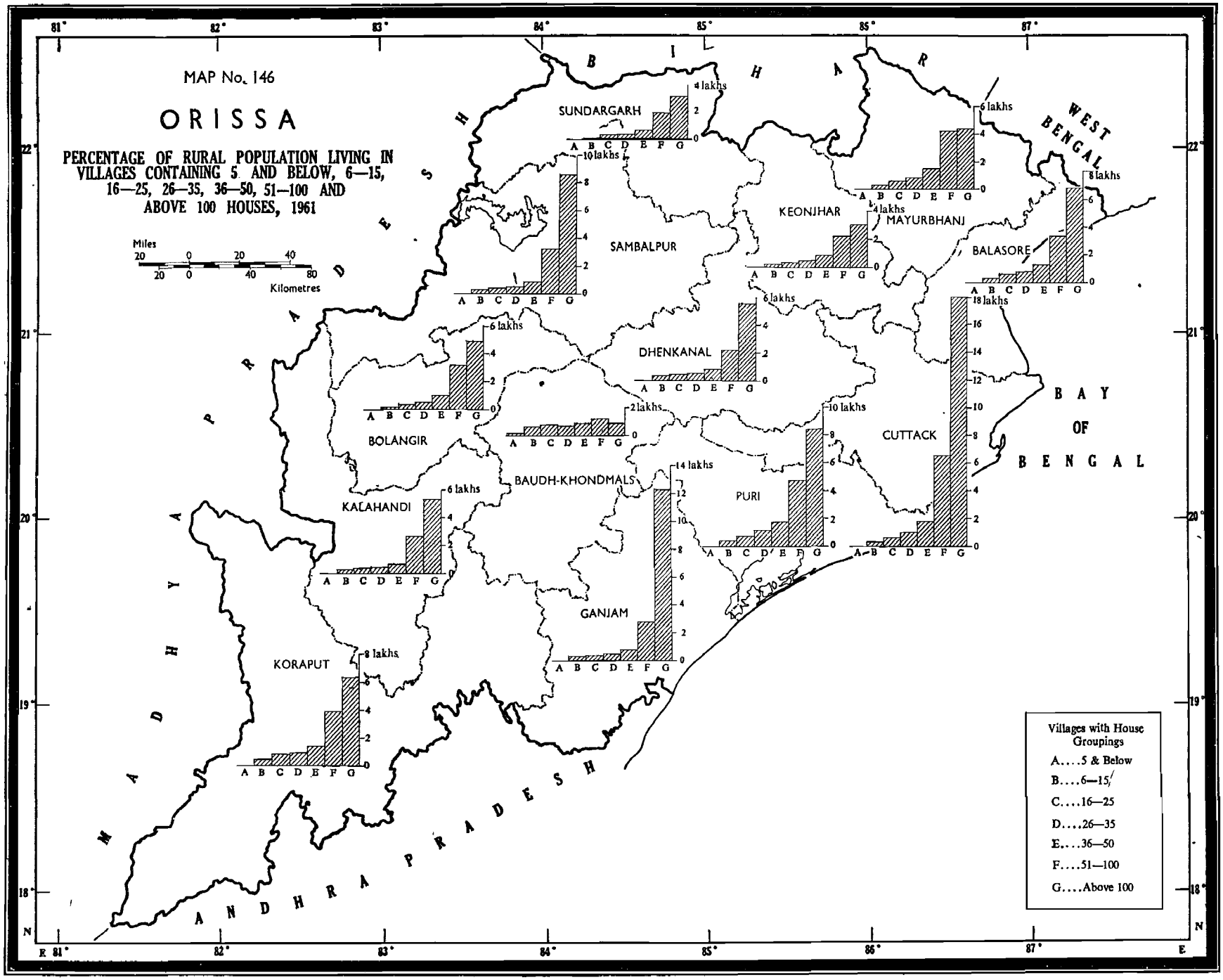
This map is akin to the previous two maps. The number of teachers employed for every 1,000 students at the university level in different districts of the State is shown here. The proportion of teachers worked out is grouped into seven ranges, viz., below 60, 60 to 70, 70 to 80, 80 to 90, 90 to 100, 100 to 200 and above 200 per 1,000 students. The districts coming under the respective groups are shaded suitably.

There are 1,029 members of teaching staff for 14,306 students at the level of university education in Orissa, the proportion being 71·9 for 1,000 students. Cuttack has the maximum number of teachers (346) but due to a large body of students (5,352), the proportion falls to 64·6 only. Mayurbhanj has the lowest proportion, namely, 53·8 teachers for 1,000 students. As the number of students is comparatively small in the districts of Baudh-Khondmals and Kalahandi, the proportion of teachers is correspondingly high, namely, 232·6 and 230·8 per 1,000 students respectively.

The number and proportion of teachers is given districtwise in the statement below:

District	No. of teachers	Proportion to 1,000 students
Baudh-Khondmals	10	232·6
Kalahandi	9	230·8
Koraput	16	103·2
Bolangir	29	100·0
Sundargarh	22	95·7
Keonjhar	13	94·9
Dhenkanal	37	92·3
Puri	199	80·8
Sambalpur	126	76·6
Ganjam	117	72·6
State	1,029	71·9
Cuttack	346	64·6
Balasore	80	54·3
Mayurbhanj	25	53·8

Source—Director of Public Instruction, Orissa


MAP No. 146
ORISSA
PERCENTAGE OF RURAL POPULATION LIVING IN VILLAGES CONTAINING 5 AND BELOW, 6—15, 16—25, 26—35, 36—50, 51—100 AND ABOVE 100 HOUSES, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
SAMBALPUR
KEONJHAR
MAYURBHANJ
BALASORE
DHENKANAL
BOLANGIR
BAUDH-KHONDMALS
CUTTACK
KALAHANDI
PURI
GANJAM
KORAPUT
A B C D E F G
Villages with House Groupings
A....5 & Below
B....6—15
C....16—25
D....26—35
E....36—50
F....51—100
G....Above 100

MAP No. 146

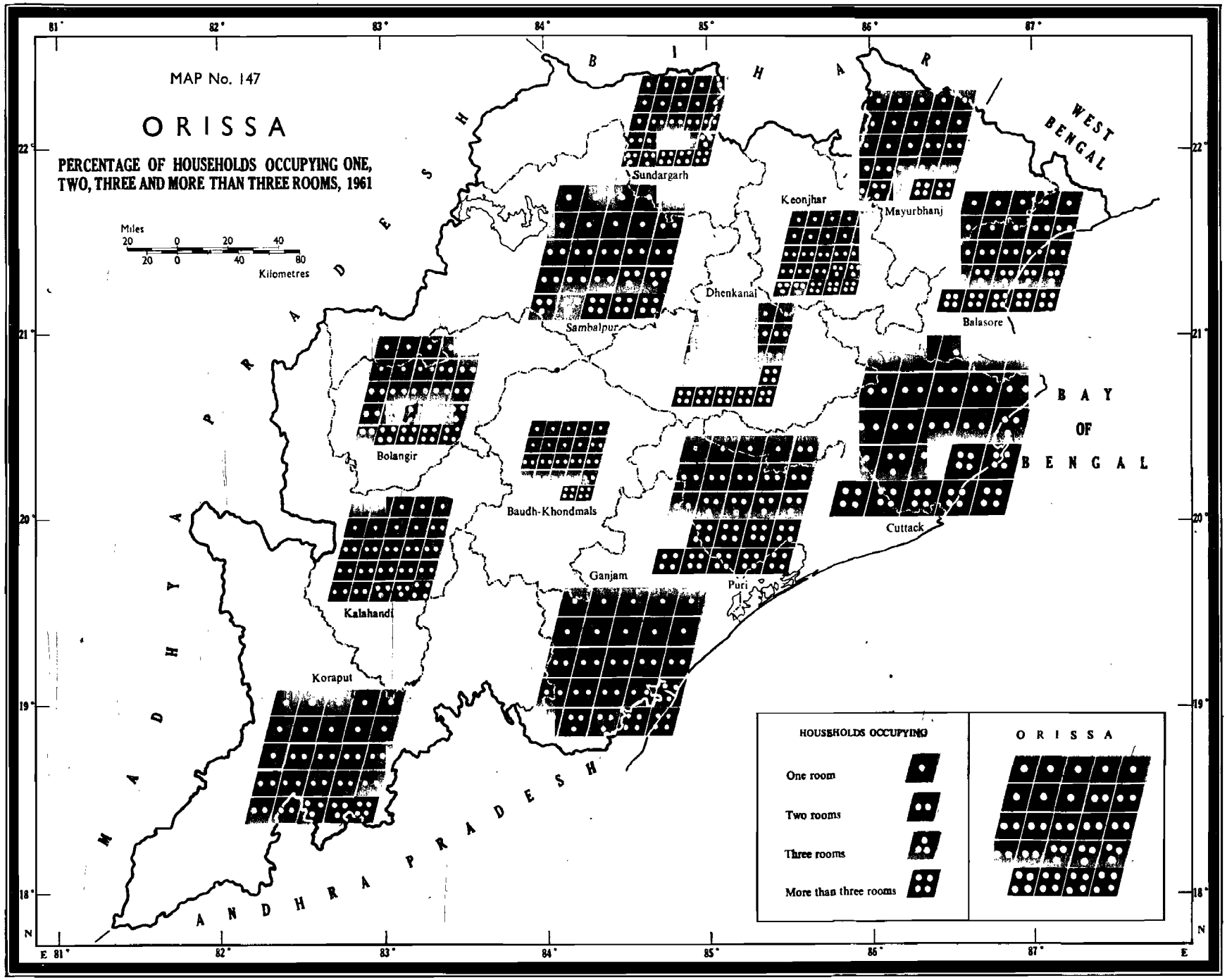
PERCENTAGE OF RURAL POPULATION LIVING IN VILLAGES CONTAINING 5 AND BELOW, 6—15, 16—25, 26—35, 36—50, 51—100 AND ABOVE 100 HOUSES, 1961

The map intends to show the proportion of rural population living in villages containing 5 and below, 6 to 15, 16 to 25, 26 to 35, 36 to 50, 51 to 100 and above 100 houses during 1961. Bar graphs are drawn proportionate to the population living in villages of each of the above groups in all the districts.

From the map it is clear that a heavy majority of rural population lives in villages having more than 100 houses. The population goes on decreasing as the number of houses per village decreases and ultimately a very insignificant proportion of population is seen living in villages with houses numbering 5 and below. In this case the State average is 0·27 per cent only. But about 53·95 per cent of the State's rural folks live in villages having above 100 houses. This is the general pattern of housing in all the districts except Baudh-Khondmals.

The rural population living in villages with house groupings is given below:

State/District	Total Rural population	Rural population living in villages with house groupings						
		5 and below Persons	6—15 Persons	16—25 Persons	26—35 Persons	36—50 Persons	51—100 Persons	Above 100 Persons
ORISSA ...	16,439,196	44,163	349,957	653,584	842,407	1,425,311	4,254,235	8,869,539
Kalahandi ...	981,081	3,186	24,170	35,168	46,320	64,985	267,620	539,632
Koraput ...	1,421,300	4,236	44,000	82,588	92,872	144,024	398,500	655,080
Sambalpur ...	1,393,311	3,298	22,375	37,666	46,078	90,887	322,363	870,644
Bolangir ...	1,019,027	1,019	11,295	32,339	54,903	102,620	322,225	494,626
Baudh-Khondmals ...	508,339	13,060	63,876	75,745	68,427	84,968	120,065	82,198
Ganjam ...	1,716,686	2,845	26,227	44,563	41,758	77,091	281,242	1,242,960
Sundargarh ...	622,857	481	8,579	21,917	28,058	59,453	189,490	314,879
Dhenkanal ...	981,847	3,186	24,768	41,372	50,196	77,152	219,805	565,368
Puri ...	1,732,033	3,821	37,483	72,231	109,653	180,302	480,990	847,553
Keonjhar ...	711,351	620	10,802	28,896	46,269	87,770	227,160	309,834
Cuttack ...	2,851,723	2,699	23,030	65,441	99,517	182,689	660,262	1,818,085
Mayurbhanj ...	1,175,623	3,155	23,661	56,078	82,543	146,435	425,975	437,776
Balasore ...	1,324,018	2,557	29,691	59,580	75,813	126,935	338,538	690,904


MAP No. 147
ORISSA
PERCENTAGE OF HOUSEHOLDS OCCUPYING ONE, TWO, THREE AND MORE THAN THREE ROOMS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Sundargarh
Keonjhar
Mayurbhanj
Dhenkanal
Sambalpur
Balasore
Bolangir
Baudh-Khondmals
Cuttack
Ganjam
Puri
Kalahandi
Koraput
HOUSEHOLDS OCCUPYING
One room
Two rooms
Three rooms
More than three rooms
ORISSA
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 147

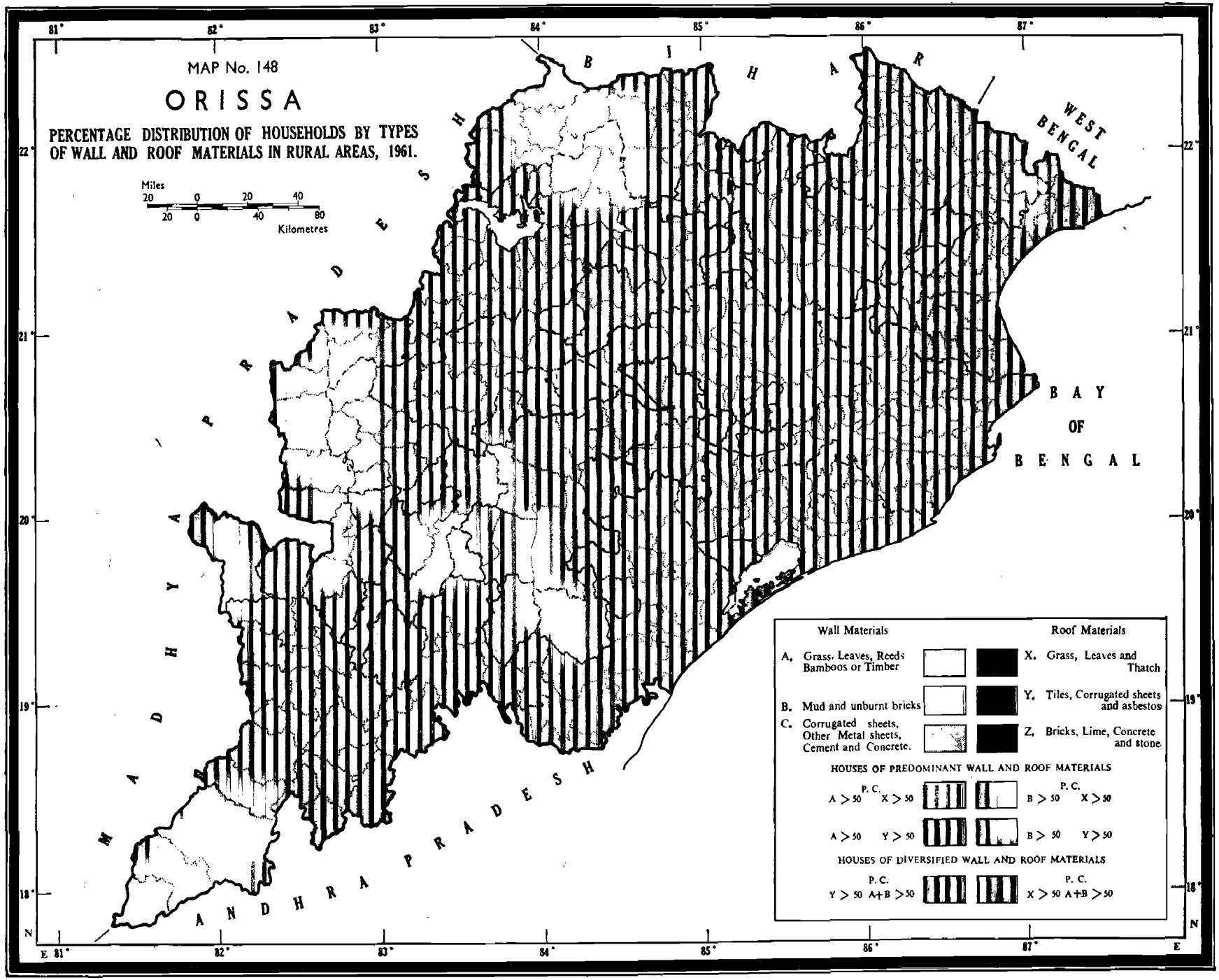
PERCENTAGE OF HOUSEHOLDS OCCUPYING ONE, TWO, THREE, AND MORE THAN THREE ROOMS, 1961

The proportion of households having one, two, three and more than three rooms is shown in this map. The proportion is measured in percentage for every district. Square root of the number of households in each district is worked out and a rhombus is drawn within the district with sides equal to its respective square root. Each rhombus is divided into 25 pockets (small rhombus in shape) each indicating 4 per cent of the households. Pockets are filled up with dots and various colours to indicate the number of rooms occupied by households.

Total number of occupied households in the State is 3,579,634 out of which 2-roomed houses are the largest constituting 37 per cent. Next in order are 1-roomed (32%), more than 3-roomed (16%) and lastly 3-roomed (15%) households. All the districts individually do not fall into this pattern. In Ganjam, Sundargarh, Keonjhar and Mayurbhanj districts 1-roomed households are larger in number than any other category of household.

The statement below gives the districtwise percentage of households occupying one, two, three and more than three rooms in 1961 :

State/District	Total No. of occupied households	Percentage			
		One room	Two rooms	Three rooms	More than three rooms
ORISSA	3,579,634	32	37	15	16
Kalahandi	206,042	36	51	9	4
Koraput	330,294	43	46	8	3
Sambalpur	346,118	34	37	15	14
Bolangir	223,004	28	42	16	14
Baudh-Khondmals	119,559	37	44	11	8
Ganjam	406,513	40	36	16	8
Sundargarh	153,374	46	30	11	13
Dhenkanal	196,052	20	39	17	24
Puri	364,284	15	29	21	35
Keonjhar	139,558	39	32	15	14
Cuttack	591,792	19	38	17	26
Mayurbhanj	230,092	54	30	10	6
Balasore	272,952	31	32	18	19


MAP No. 148
ORISSA
PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY TYPES OF WALL AND ROOF MATERIALS IN RURAL AREAS, 1961.
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
Wall Materials
A. Grass, Leaves, Reeds Bamboos or Timber
B. Mud and unburnt bricks
C. Corrugated sheets, Other Metal sheets, Cement and Concrete.
Roof Materials
X. Grass, Leaves and Thatch
Y. Tiles, Corrugated sheets and asbestos
Z. Bricks, Lime, Concrete and stone
HOUSES OF PREDOMINANT WALL AND ROOF MATERIALS
P.C. A > 50 X > 50
P.C. B > 50 X > 50
A > 50 Y > 50
B > 50 Y > 50
HOUSES OF DIVERSIFIED WALL AND ROOF MATERIALS
P.C. Y > 50 A+B > 50
P.C. X > 50 A+B > 50
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 148

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY TYPES OF WALL AND ROOF MATERIALS IN RURAL AREAS, 1961

The map displays the distribution of households by types of wall and roof materials. The materials used in walls and roofs are said to be 'predominant' if the structure contains more than 50 per cent of such materials out of the total quantity used in the walls or roofs as the case may be. Predominant wall materials are represented by A, B & C as symbols, while X, Y & Z represent roof materials. Screens are used for wall materials and solid vertical bars for the roof materials in different colours as indicated below. Inter-change between solid bars and screens of different colours, namely, green, red and black will give many groups out of which six are utilized to indicate the following predominant ones:

Predominant wall materials
(coloured screens)

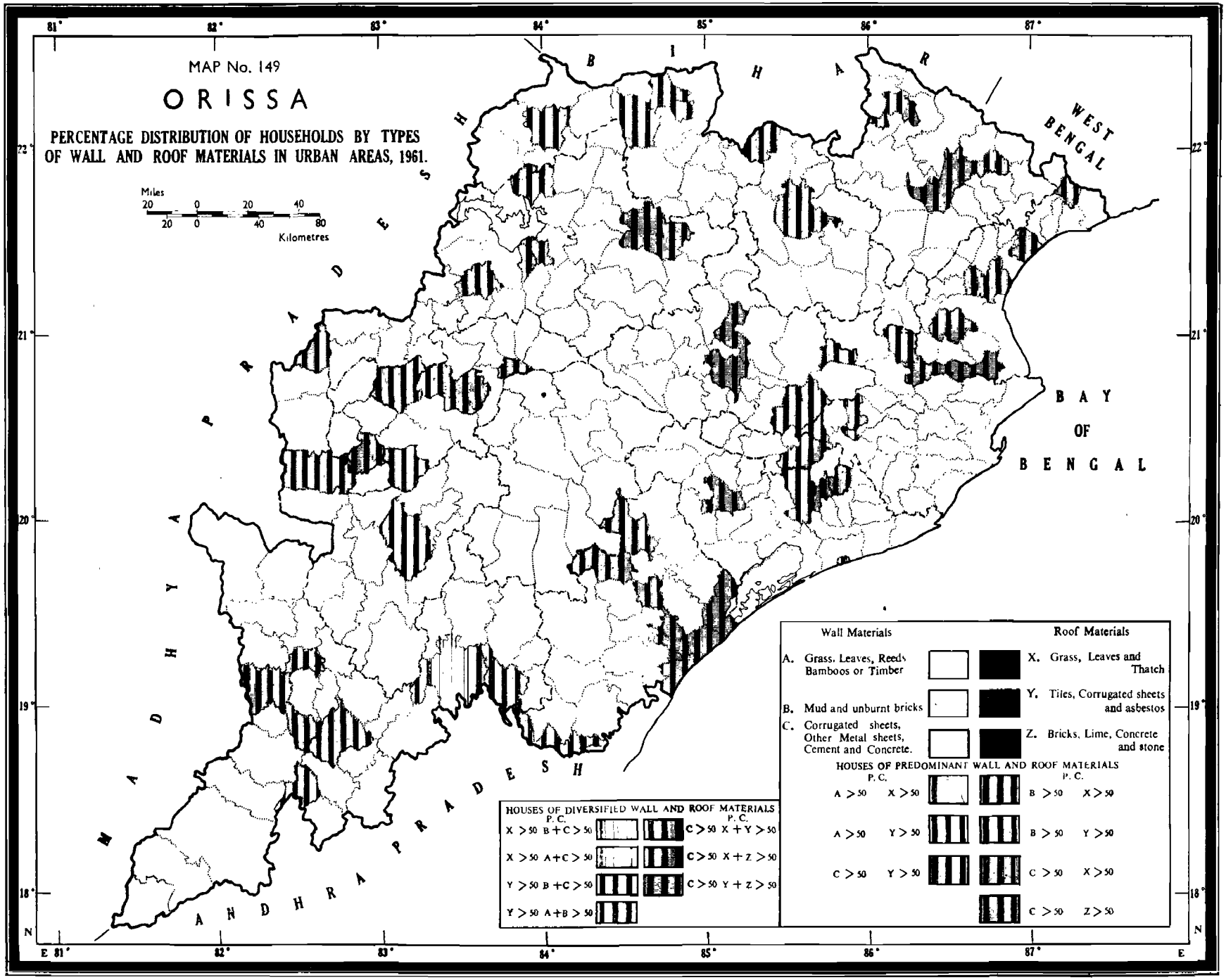
	Colour utilization
A — Grass, leaves, reeds or bamboos	... Green screen
B — Mud, unburnt bricks	... Red screen
C — Burnt bricks, metal sheets, stone, cement and other metals	... Black screen

Predominant roof materials
(solid vertical bars)

X — Grass, leaves, reeds or bamboos	... Green solid bar
Y — Tiles, slates, shingles, iron sheets, asbestos and cement	... Red solid bar
Z — Brick, lime, concrete, stone and other metals	... Black solid bar

The police stations are tinted accordingly to indicate the predominant wall and roof materials together.

A look at the map will indicate that in about 90 per cent of the rural areas of the east, south and central parts, the predominant roof materials is 'X' which includes grass, leaves, reeds and bamboos. In the rest of the State lying to the west and north-west, 'Y', namely, tiles, slates, iron sheets, asbestos, etc., dominates. Regarding wall materials it appears that 'B' (muds and unburnt bricks) predominates in approximately 70 per cent of the rural areas. The rest of the regions have 'A' (grass, leaves, reeds and bamboos) as the wall materials. Groups C and Z are however not found anywhere in the State.

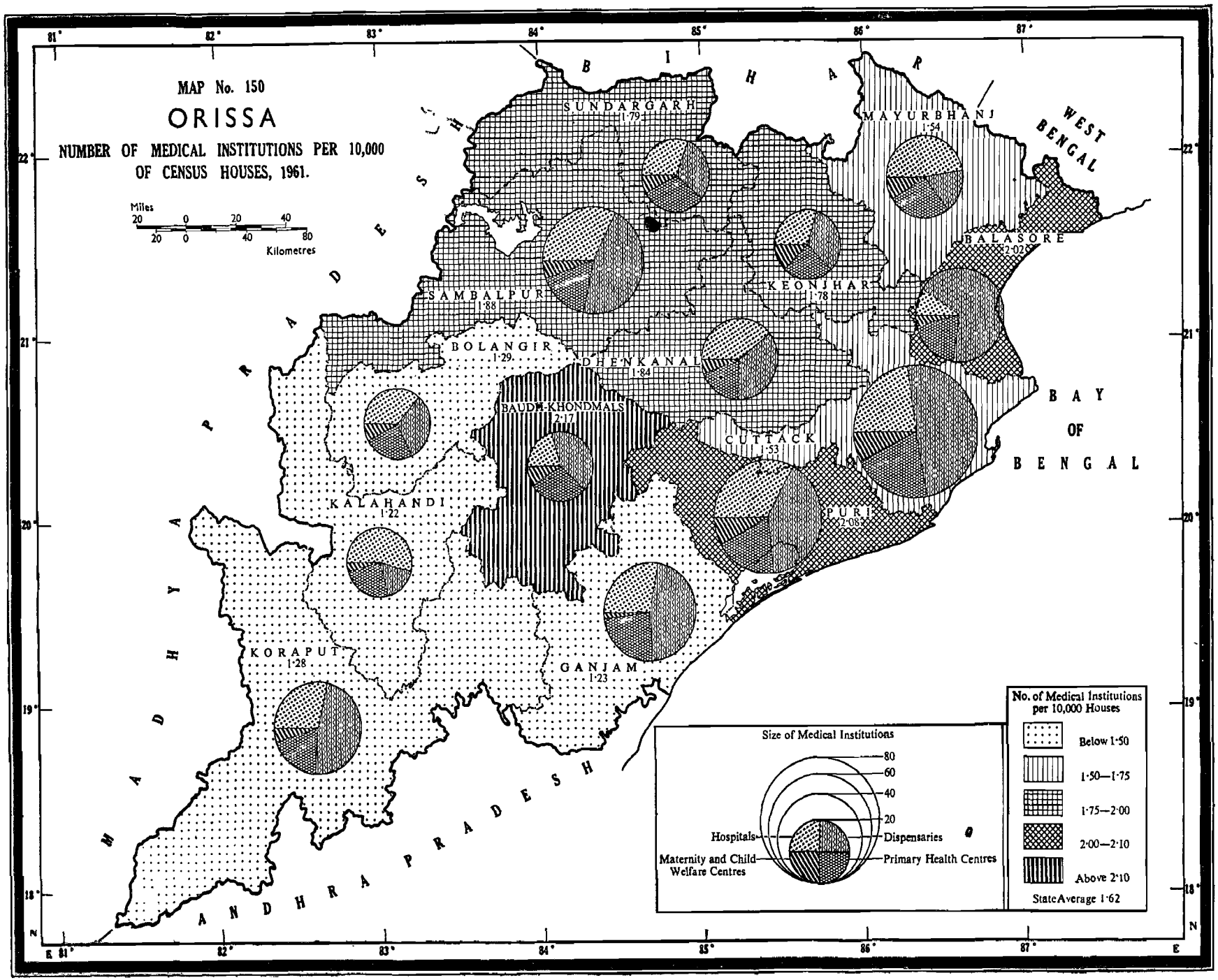

MAP No. 149
ORISSA
PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY TYPES OF WALL AND ROOF MATERIALS IN URBAN AREAS, 1961.
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18° N
E
Wall Materials
A. Grass, Leaves, Reeds Bamboos or Timber
B. Mud and unburnt bricks
C. Corrugated sheets, Other Metal sheets, Cement and Concrete.
Roof Materials
X. Grass, Leaves and Thatch
Y. Tiles, Corrugated sheets and asbestos
Z. Bricks, Lime, Concrete and stone
HOUSES OF PREDOMINANT WALL AND ROOF MATERIALS
P.C.
A > 50 X > 50
B > 50 X > 50
A > 50 Y > 50
B > 50 Y > 50
C > 50 Y > 50
C > 50 X > 50
C > 50 Z > 50
HOUSES OF DIVERSIFIED WALL AND ROOF MATERIALS
P.C.
X > 50 B + C > 50
C > 50 X + Y > 50
X > 50 A + C > 50
C > 50 X + Z > 50
Y > 50 B + C > 50
C > 50 Y + Z > 50
Y > 50 A + B > 50

MAP No. 149

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY TYPES OF WALL AND ROOF MATERIALS IN URBAN AREAS, 1961

This map brings out the percentage distribution of households by types of wall and roof materials in urban areas whereas the previous one related to the rural areas of the State. The method of drawing the map as well as the utilization of colours is similar to the previous map (No. 148), except with regard to groups C and Z, where yellow replaces black.

There are 61 police stations having urban population in the State. In this map too, 'X' showing roof materials like grass, leaves, reeds and bamboos dominate in majority of the police stations. But it is mostly seen in the urban police stations of coastal, southern and north-eastern districts, while tiles, slates, iron sheets, etc., under 'Y' dominate in the west and north-western districts. Only in Bhubaneswar PS 'Z' (Brick, lime, concrete, stone, etc.) as a roof material dominates. In most of the police stations 'B' (mud and unburnt bricks) form the wall material. It is scattered throughout the State. But in police stations like Bhubaneswar, Cuttack Town, Chowdwar, Berhampur, Machkund, Koraput, Bolangir, Burla, Brajarajnagar and Birmitrapur, 'C' (burnt brick, cement, stone, metal sheet) as wall material dominates. In Surada, Gunupur, Rajgangpur and Barbil police stations there is no single wall material which exceeds over 50 per cent. Similar to the previous map, B & Y dominate in the west and north-west parts of the State.


MAP No. 150
ORISSA
NUMBER OF MEDICAL INSTITUTIONS PER 10,000 OF CENSUS HOUSES, 1961.
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 1·79
MAYURBHANJ 1·54
BALASORE 2·02
KEONJHAR 1·78
SAMBALPUR 1·88
BOLANGIR 1·29
DHENKANAL 1·84
BAUDH-KHONDMALS 2·17
CUTTACK 1·53
KALAHANDI 1·22
PURI 2·08
KORAPUT 1·28
GANJAM 1·23
Size of Medical Institutions
80
60
40
20
Hospitals
Dispensaries
Maternity and Child Welfare Centres
Primary Health Centres
No. of Medical Institutions per 10,000 Houses
Below 1·50
1·50—1·75
1·75—2·00
2·00—2·10
Above 2·10
State Average 1·62
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 150

NUMBER OF MEDICAL INSTITUTIONS PER 10,000 OF CENSUS HOUSES, 1961

There are 3,316,824 Census Houses in the State of Orissa. Medical amenities are provided in the State by 538 institutions, which are spread over all districts and belong to different categories, such as Hospitals, Dispensaries, Primary Health Centres, Maternity and Child Welfare Centres.

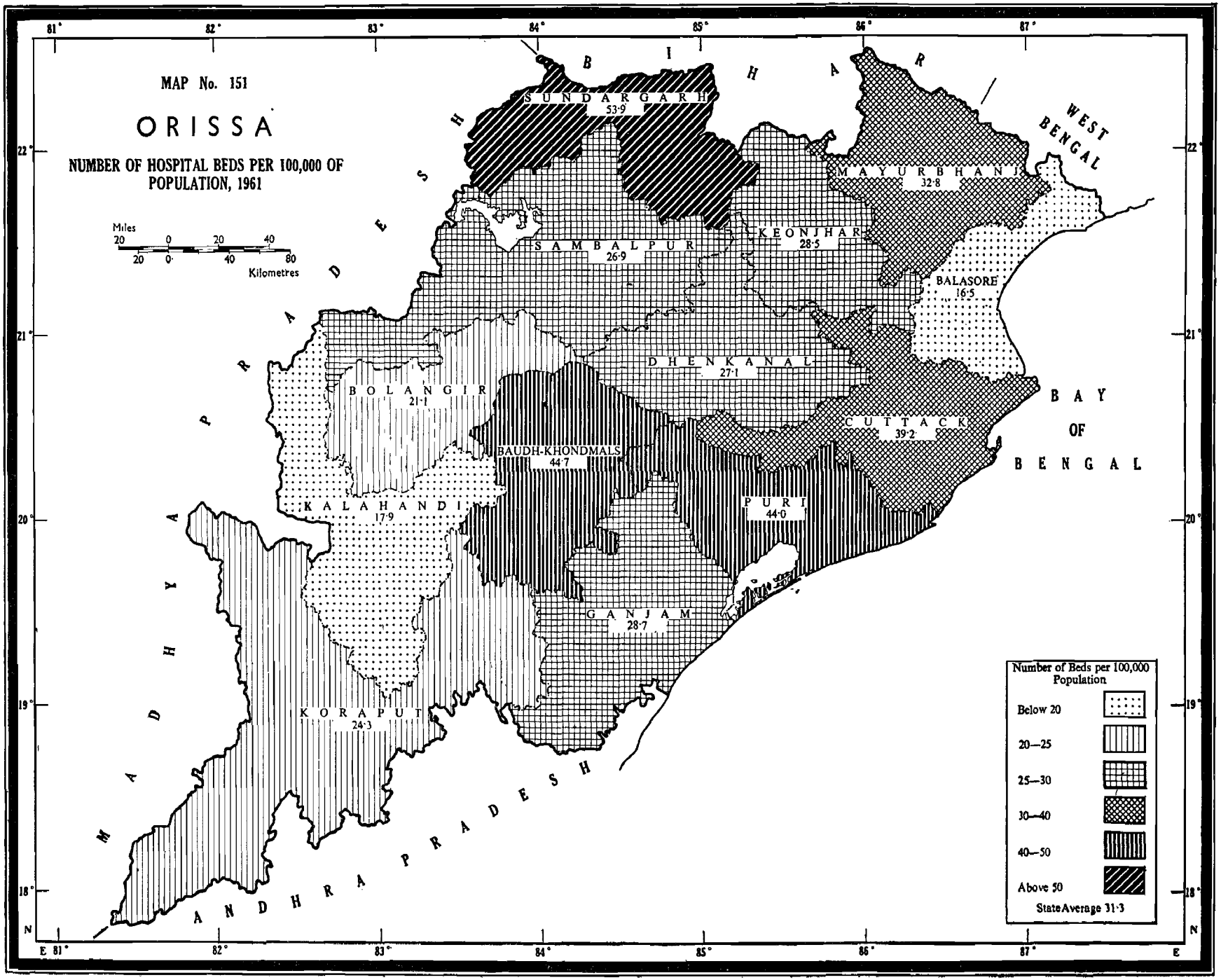
The statement given below shows the number of each category of medical institutions in the districts of Orissa. Cuttack district has the largest number of such institutions, namely, 86. The lowest number occurs in Kalahandi, Baudh-Khondmals and Keonjhar, the institutions numbering 24 in each of the districts. Bolangir and Sundargarh are also poor in this respect, the number being 25 and 26 respectively.

The statement also gives the number of Census Houses in each district of the State, and further shows the proportion of medical institutions for 10,000 Census Houses. The average proportion for the State is 1·62. The proportion differs from district to district, the highest occurring in Baudh-Khondmals (2·18). This is a paradox because this district has the least number of medical institutions. But the number of Census Houses being comparatively small, the proportion has worked out high. Other districts which have high proportions of above 2 institutions per 10,000 Census Houses are Puri (2·08) and Balasore (2·00). Cuttack district has a low proportion of 1·53, particularly because of comparatively large number of Census Houses in the district.

The statement below gives the data :

State/ District	Hospitals	Dispensaries	Primary Health Centres	Maternity & Child Welfare Centres	Total No. of Medical Institutions	No. of Census Houses	No. of Medical Institutions per 10,000 Census Houses
ORISSA	160	228	116	34	538	3,316,824	1·62
Kalahandi	13	4	6	1	24	195,623	1·23
Koraput	12	20	8	2	42	326,477	1·29
Sambalpur	18	26	9	3	56	299,347	1·87
Bolangir	9	8	6	2	25	192,950	1·30
Baudh-Khondmals	5	10	7	2	24	110,255	2·18
Ganjam	13	22	11	1	47	380,178	1·24
Sundargarh	8	8	8	2	26	145,089	1·79
Dhenkanal	13	12	6	2	33	178,782	1·85
Puri	21	26	12	5	64	307,273	2·08
Keonjhar	7	8	6	3	24	134,382	1·79
Cuttack	20	42	18	6	86	562,175	1·53
Mayurbhanj	16	6	9	3	34	219,655	1·55
Balasore	5	36	10	2	53	264,638	2·00

Source—Director of Health Services, Orissa


MAP No. 151
ORISSA
NUMBER OF HOSPITAL BEDS PER 100,000 OF POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 53·9
MAYURBHANJ 32·8
KEONJHAR 28·5
SAMBALPUR 26·9
BALASORE 16·5
DHENKANAL 27·1
BOLANGIR 21·1
CUTTACK 39·2
BAUDH-KHONDMALS 44·7
KALAHANDI 17·9
PURI 44·0
GANJAM 28·7
KORAPUT 24·3
Number of Beds per 100,000 Population
Below 20
20—25
25—30
30—40
40—50
Above 50
State Average 31·3
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 151

NUMBER OF HOSPITAL BEDS PER 100,000 OF POPULATION, 1961

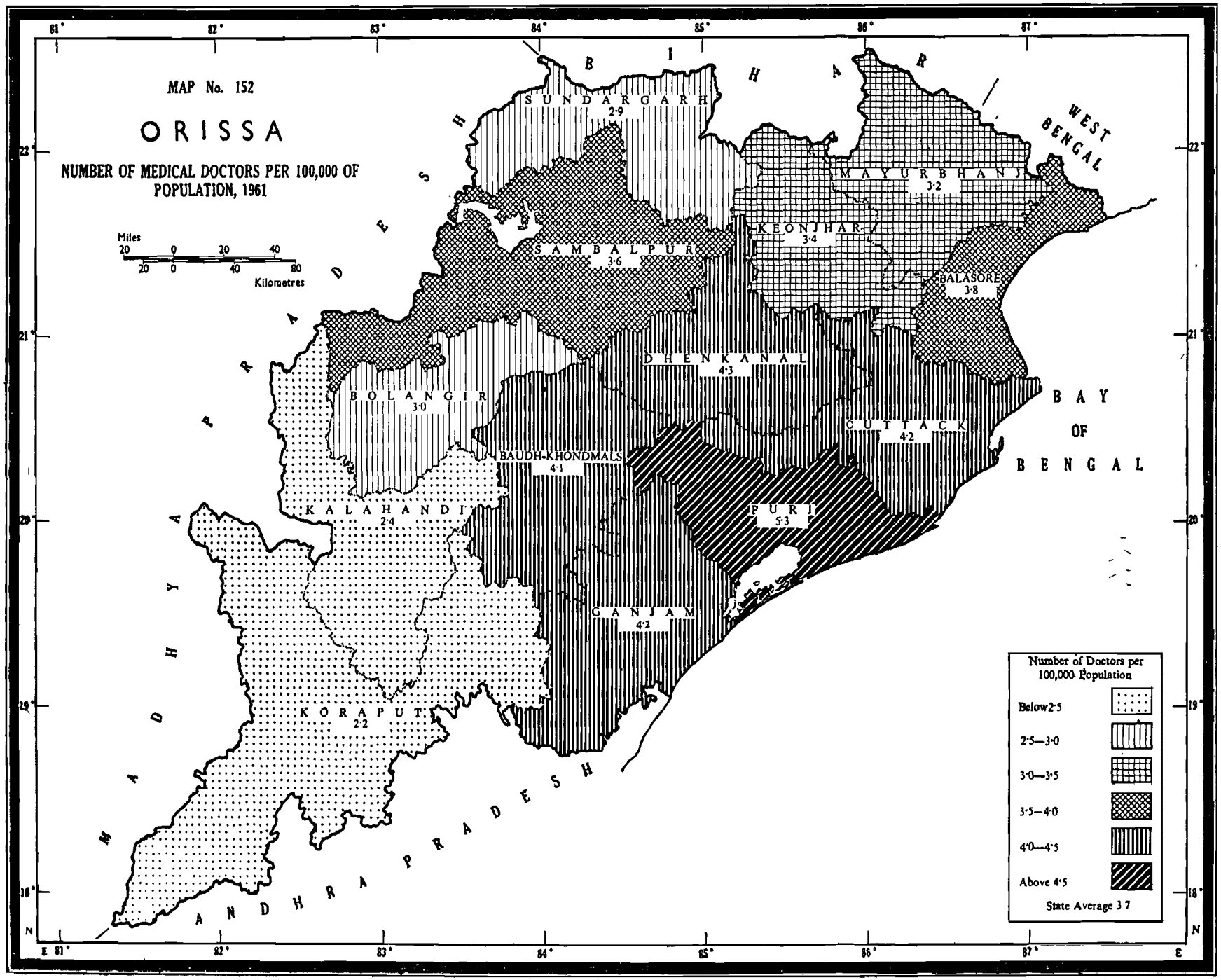
The map is intended to show the number of hospital beds per 100,000 of population in every district during 1961. The number of beds was obtained from departmental sources, its proportion was worked out and grouped into six ranges, viz., below 20, 20 to 25, 25 to 30, 30 to 40, 40 to 50 and above 50 beds per lakh of population. The districts were then hatched with suitable shades.

For a population of 17,548,846 in the State, there are 5,497 hospital beds. In other words, for every 100,000 of population there are 31·3 beds. Cuttack district has the largest number of beds, namely, 1,202. But due to a heavy population in the district, the proportion is low, the number of beds for 100,000 persons coming to 39·2 only. Sundargarh on the other hand, has the largest proportion, viz., 53·9 beds. Balasore has the lowest proportion of only 16·5 beds per lakh of population. But the smallest number of hospital beds (181) is in Kalahandi district.

The number of hospital beds per 100,000 of population in every district during 1961 is given below:

District	No. of beds per 100,000 of population
Sundargarh ...	53·9
Baudh-Khondmals ...	44·7
Puri ...	44·0
Cuttack ...	39·2
Mayurbhanj ...	32·8
State Average ...	31·3
Ganjam ...	28·7
Keonjhar ...	28·5
Dhenkanal ...	27·1
Sambalpur ...	26·9
Koraput ...	24·3
Bolangir ...	21·1
Kalahandi ...	17·9
Balasore ...	16·5

Source—Director of Health Services, Orissa


MAP No. 152
ORISSA
NUMBER OF MEDICAL DOCTORS PER 100,000 OF POPULATION, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH 2·9
MAYURBHANJ 3·2
KEONJHAR 3·4
SAMBALPUR 3·6
BALASORE 3·8
DHENKANAL 4·3
BOLANGIR 3·0
CUTTACK 4·2
BAUDH-KHONDMALS 4·1
KALAHANDI 2·4
PURI 5·3
GANJAM 4·2
KORAPUT 2·2
Number of Doctors per 100,000 Population
Below 2·5
2·5—3·0
3·0—3·5
3·5—4·0
4·0—4·5
Above 4·5
State Average 3·7
81° 82° 83° 84° 85° 86° 87°
22° 21° 20° 19° 18°
N
E

MAP No. 152

NUMBER OF MEDICAL DOCTORS PER 100,000 OF POPULATION, 1961

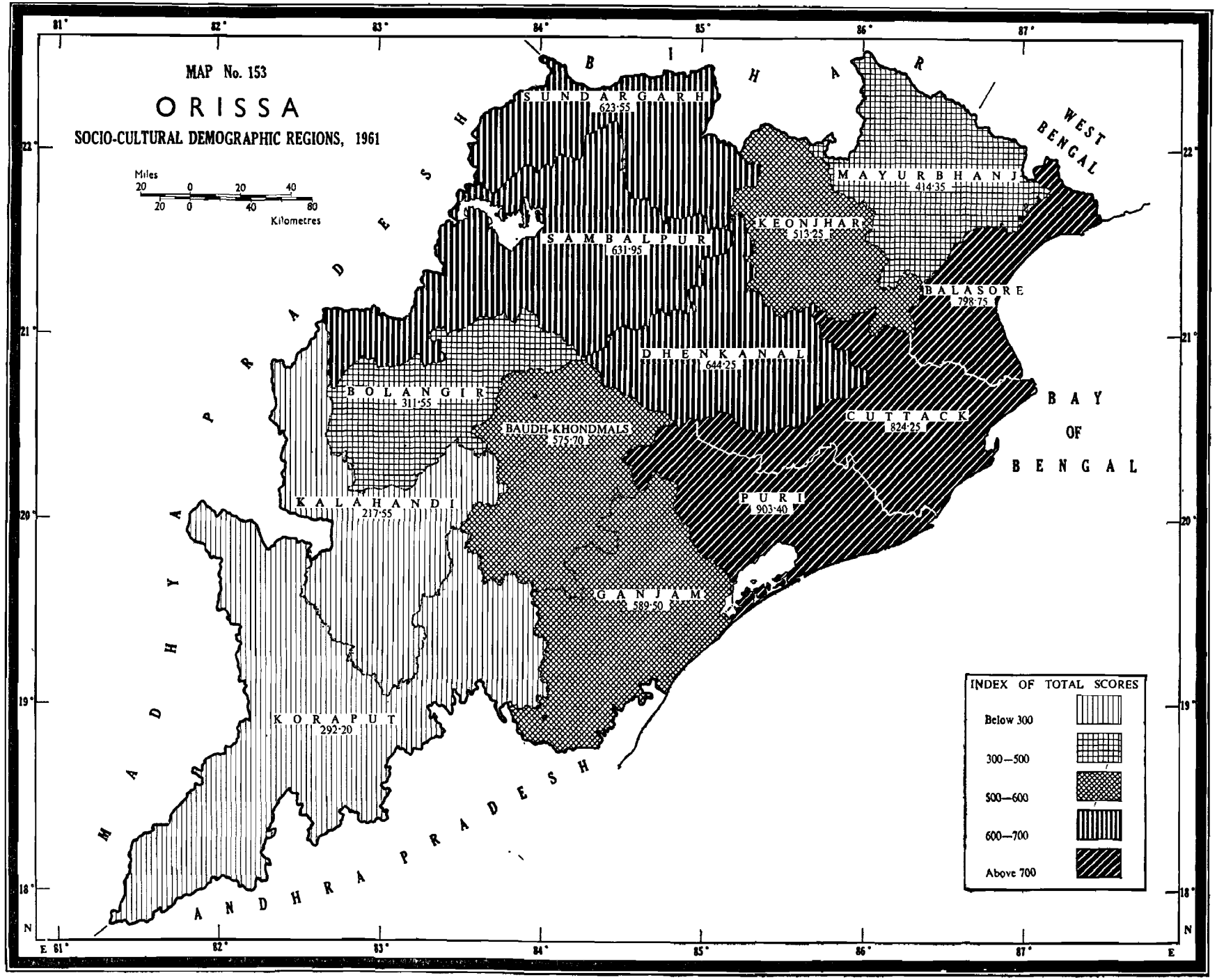
The map displays the strength of medical doctors per 100,000 of population in 1961. The number of doctors for all the districts is ascertained from official records and their proportion is worked out and grouped into six ranges, viz., below 2·5, 2·5 to 3·0, 3·0 to 3·5, 3·5 to 4·0, 4·0 to 4·5 and above 4·5 doctors per lakh of population. The districts are hatched by choropleth method.

There are 656 medical doctors for a population of 17,548,846 which is equivalent to 3·7 doctors for every 100,000 people. In Cuttack and Puri there are 129 and 99 doctors respectively. In Baudh-Khondmals there are only 21 doctors. The proportion is highest in Puri with 5·3 doctors per lakh of population. Koraput has the lowest proportion, namely, 2·2.

The statement below gives the number of doctors for every 100,000 of population in the districts during 1961 :

District	Percentage
Puri	5·3
Dhenkanal	4·3
Ganjam	4·2
Cuttack	4·2
Baudh-Khondmals	4·1
Balasore	3·8
State Average	3·7
Sambalpur	3·6
Keonjhar	3·4
Mayurbhanj	3·2
Bolangir	3·0
Sundargarh	2·9
Kalahandi	2·4
Koraput	2·2

Source—Director of Health Services, Orissa


MAP No. 153
ORISSA
SOCIO-CULTURAL DEMOGRAPHIC REGIONS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
SUNDARGARH
623·55
MAYURBHANJ
414·35
KEONJHAR
513·25
SAMBALPUR
631·95
BALASORE
798·75
DHENKANAL
644·25
BOLANGIR
311·55
BAUDH-KHONDMALS
575·70
CUTTACK
824·25
PURI
903·40
KALAHANDI
217·55
GANJAM
589·50
KORAPUT
292·20
INDEX OF TOTAL SCORES
Below 300
300—500
500—600
600—700
Above 700
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 153

SOCIO-CULTURAL DEMOGRAPHIC REGIONS, 1961

It is a synthetic map showing regions delineated by index of socio-cultural levels. Twelve indicators were selected for deducing the synthetic index of development relating to urbanism, caste and tribes, literacy, education and medical facilities. The different aspects of these subjects which were selected as indicators are given below:

Urbanism—Percentage of Urban Population to total Population

Castes and Tribes*—Percentage of Scheduled Castes and Tribes to the total Population, 1961

Literacy—Percentage of Literates to total Population excluding age-group 0—4, 1961

Education—(i) Percentage of Female Literates to total Female Population excluding age-group 0—4, 1961

(ii) Primary School Enrolment of Girls, 1961

(No. of school going female children of age-group 5—14 per 10,000 of female children of age-group 5—14)

(iii) Post-primary Educational Enrolment of Population of age-group 15—29, 1961. (Percentage of population in age-group 15—29 at the level of Secondary and Higher Education)

(iv) No. of Teachers per 10,000 students at the Primary level of Education, 1961

(v) No. of Teachers per 10,000 students at the Secondary level of Education

(vi) Percentage of Workers engaged in Educational and Scientific Services to total workers in Services, 1961

Medical Facilities—(i) No. of Medical Institutes per 1,000 Census Houses

(ii) No. of Hospital beds per 100,000 of Population, 1961

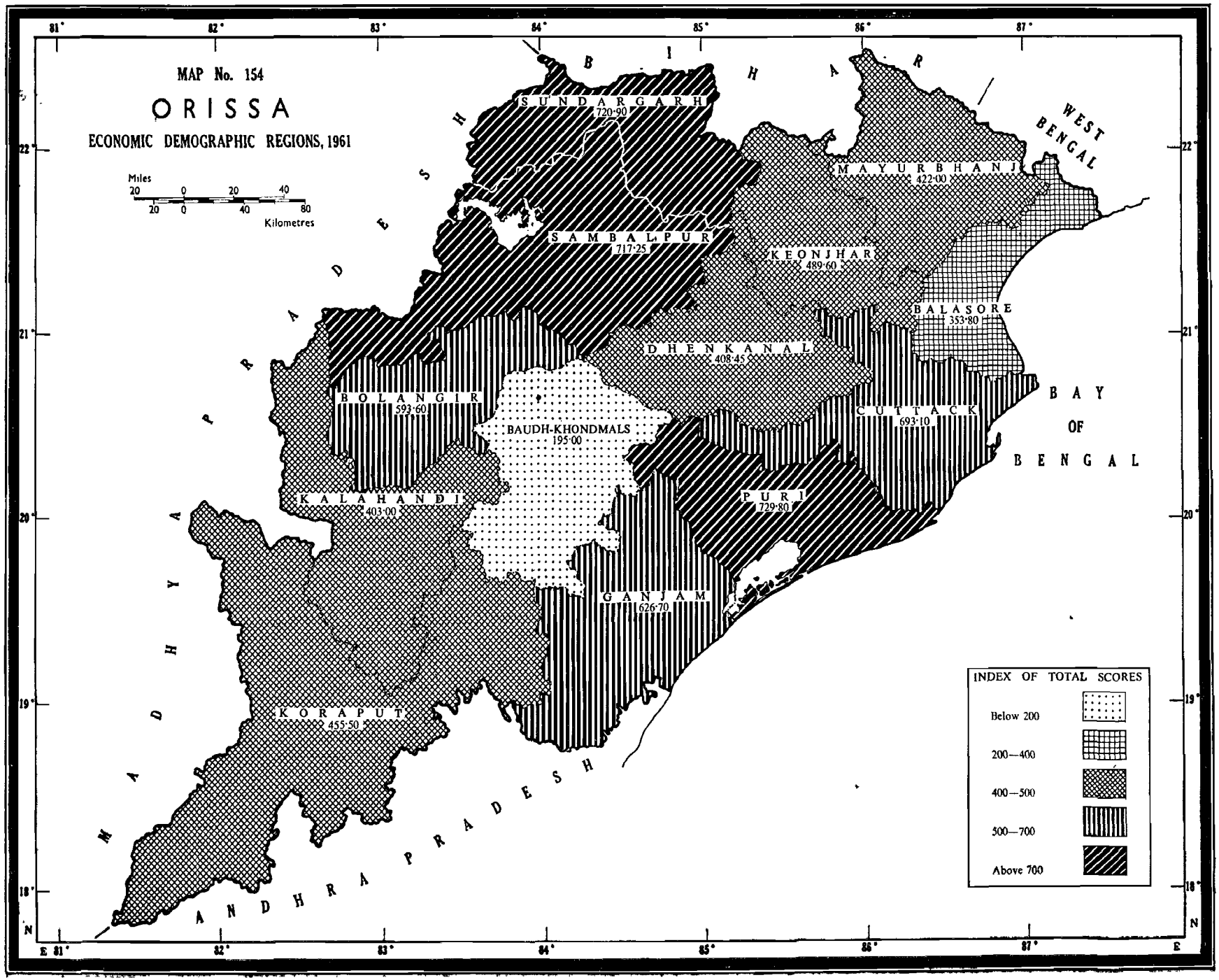
(iii) No. of Medical Doctors per 100,000 of Population

* For this indicator the maximum and minimum scores will be reversed. The higher the proportion of Scheduled Castes and Tribes the lesser will be the scoring.

Method—Each subject earned a score on the basis of a graph according to the following procedure. Along the Y-axis, the percentage secured by a district was plotted and along the X-axis the score obtained by the district was arranged according to a suitable scale. The State average score was assumed to be 50 and the district which was the lowest in percentage was treated as 0, while the district which had the highest percentage was awarded 100. The required graph was obtained with regard to the subject by joining 0, 50 and 100 with a free-hand curve. The cross section between the graph and the value on Y-axis determined the point from which a straight line was drawn parallel to the Y-axis. This straight line met the X-axis at a point which marked the score for the district. In this manner scores were noted in respect of all the districts. The procedure was repeated in respect of other subjects, so that finally 12 scores were obtained in respect of each district. The total of all the scores secured determined the level of advance made by the district in the socio-cultural field. The scores of all the districts were divided into five suitable ranges of the following values, viz., below 300, 300 to 500, 500 to 600, 600 to 700 and above 700. The districts were then hatched in the map according to these ranges from high to low.

The total scores obtained by different districts out of 1,200 is indicated below:

District	Total score out of 1200
Kalahandi	217·55
Koraput	292·20
Bolangir	311·55
Mayurbhanj	414·35
Keonjhar	513·25
Baudh-Khondmals	575·70
Ganjam	589·50
Sundargarh	623·55
Sambalpur	631·95
Dhenkanal	644·25
Balasore	798·75
Cuttack	824·25
Puri	903·40


MAP No. 154
ORISSA
ECONOMIC DEMOGRAPHIC REGIONS, 1961
Miles
20 0 20 40
20 0 40 80
Kilometres
SUNDARGARH
720·90
SAMBALPUR
717·25
MAYURBHANJ
422·00
KEONJHAR
489·60
BALASORE
353·80
DHENKANAL
408·45
BOLANGIR
593·60
BAUDH-KHONDMALS
195·00
CUTTACK
693·10
KALAHANDI
403·00
PURI
729·80
GANJAM
626·70
KORAPUT
455·50
BIHAR
WEST BENGAL
MADHYA PRADESH
ANDHRA PRADESH
BAY OF BENGAL
INDEX OF TOTAL SCORES
Below 200
200—400
400—500
500—700
Above 700
81°
82°
83°
84°
85°
86°
87°
22°
21°
20°
19°
18°
N
E

MAP No. 154

ECONOMIC DEMOGRAPHIC REGIONS, 1961

This is a synthetic map of economic development of the State and has been drawn on the same method as adopted in the previous map. Twelve indicators of economic development were selected for being depicted in the map as follows :

Urbanism — (i) Percentage of Urban Population to the Total Population, 1961

(ii) Percentage of Population living in cities with Population above 50,000

Agricultural Development — (i) Gross Value of Agricultural output per cultivating household, 1961

(ii) Per capita supply of staple food crops, 1961

Industrial Development — (i) Proportion of Industrial Workers in Mining and Quarrying, Household Industry and Manufacturing to Total Working Population, 1961

(ii) Proportion of Workers engaged in factory industries to Total Industrial Workers, 1961

Power Development — (i) Per capita Consumption of Electricity, 1961

(ii) Proportion of Rural Population living in Electrified Villages, 1961

Employment Position — Proportion of Workers to the Total Employable Population of age-group 15—59

Housing Position — Percentage of Households occupying three rooms and more to Total Households, 1961

Transport Development — (i) Density of Railways, 1961 (Kilometres of Railways per 10,000 sq. kms of areas)

(ii) Density of Roads, 1961 (Kilometres of Road per 10,000 sq. kms of areas)

The scores obtained according to the procedure mentioned with regard to the last map were divided into five ranges of values, viz., below 200, 200 to 400, 400 to 500, 500 to 700 and above 700.

The total scores obtained by different districts out of 1,200 are given below :

District	Total score out of 1200
Baudh-Khondmals	195·00
Balasore	353·80
Kalahandi	403·00
Dhenkanal	408·45
Mayurbhanj	422·00
Koraput	455·50
Keonjhar	489·60
Bolangir	593·60
Ganjam	626·70
Cuttack	693·10
Sambalpur	717·25
Sundargarh	720·90
Puri	729·80

LIST OF AGENTS FOR THE SALE OF GOVERNMENT OF INDIA PUBLICATIONS

AGARTALA—Laxmi Bhandar Books & Scientific Sales (Rest.)

AGRA—
1. National Book House, Jeoni Mandi ... (Reg.)
2. Wadhawa & Co., 45, Civil Lines ... (Reg.)
3. Banwari Lal Jain, Publishers, Moti Katra ... (Rest.)
4. English Book Depot, Sadar Bazar, Agra Cantt. ... (Rest.)

AHMEDNAGAR—V. T. Jorakar, Prop. Rama General Stores, Navi Path ... (Rest.)

AHMEDABAD—
1. Balgovind Kuber Dass & Co., Gandhi Road ... (Reg.)
2. Chandra Kant Chiman Lal Vora, Gandhi Road ... (Reg.)
3. New Order Book Co., Ellis Bridge ... (Reg.)
4. Mahajan Bros., Opp. Khadia Police Gate ... (Rest.)
5. Sastu Kitab Ghar, Near Relief Talkies, Patthar Kuva, Relief Road ... (Reg.)

AJMER—
1. Book-Land, 663, Madar Gate ... (Reg.)
2. Rajputana Book House, Station Road .. (Reg.)
3. Law Book House, 271, Hathi Bhata ... (Reg.)
4. Vijay Bros., Kutchery Road ... (Rest.)
5. Krishna Bros., Kutchery Road ... (Rest.)

ALIGARH—Friends' Book House, Muslim University Market . (Reg.)

ALLAHABAD—
1. Superintendent, Printing & Stationery, U.P.
2. Kitabistan, 17-A, Kamla Nehru Road .. (Reg.)
3. Law Book Co., Sardar Patel Marg, P. Box 4 ... (Reg.)
4. Ram Narain Lal Beni Modho, 2-A, Katra Road ... (Reg.)
5. Universal Book Co., 20, M. G. Road ... (Reg.)
6. The University Book Agency (of Lahore), Elgin Road .. (Reg.)
7. Wadhwa & Co., 23, M. G. Marg ... (Rest.)
8. Bharat Law House, 15, Mahatma Gandhi Marg ... (Rest.)
9. Ram Narain Lal Beni Prashad, 2-A, Katra Road ... (Rest.)

AMBALA—
1. English Book Depot, Ambala Cantt. ... (Reg.)
2. Seth Law House, 8719, Railway Road, Ambala Cantt. ... (Rest.)

AMRITSAR—
1. The Law Book Agency. G. T. Road, Putligarh . (Reg.)
2. S. Gupta, Agent, Govt. Publications, Near P. O. Majith Mandi ... (Reg.)
3. Amar Nath & Sons, Near P. O. Majith Mandi ... (Reg.)

ANAND—
1. Vijaya Stores, Station Road ... (Rest.)
2. Charto Book Stall, Tulsi Sadan, Stn. Road ... (Rest.)

ASANSOL—D. N. Roy & R. K. Roy, Booksellers, Atwal Building ... (Rest.)

BANGALORE—
1. The Bangalore Legal Practitioner Co-op. Society Ltd., Bar Association Building ... (Reg.)
2. S. S. Book Emporium, 118, Mount Joy Road ... (Reg.)
3. The Bangalore Press, Lake View, Mysore Road, P. O. Box 507 ... (Reg.)
4. The Standard Book Depot, Avenue Road ... (Reg.)
5. Vichara Sahitya Private Ltd., Balepet ... (Reg.)
6. Makkala Pustaka Press, Balamandira, Gandhinagar (Reg.)
7. Maruthi Book Depot, Avenue Road ... (Rest.)
8. International Book House P. Ltd., 4-F, Mahatma Gandhi Road ... (Reg.)
9. Navakarnataka Pubns. Private Ltd., Majestic Circle (Rest.)

BAREILLY—Agarwal Brothers, Bara Bazar .. (Reg.)

BARODA—
1. Shri Chandrakant Mohan Lal Shah, Raopura ... (Rest.)
2. Good Companions Booksellers, Publishers & Sub-Agent ... (Rest.)
3. New Medical Book House, 540 Madan Zampa Road (Rest.)

BEAWAR—The Secretary, S. D. College, Co-operative Stores Ltd ... (Rest.)

BELGHARIA—Granthlok, Antiquarian Booksellers & Publishers (24-Parganas), 5/1 Amlica Mukherjee Road ... (Reg.)

BHAGALPUR—Paper Stationery Stores, D. N. Singh Road (Reg.)

BHOPAL—
1. Superintendent, State Government Press
2. Lyall Book Depot, Mohd. Din Bldg. Sultan Road ... (Reg.)
3. Delite Books, Opp. Bhopal Talkies ... (Rest.)

BHUBANESWAR—Ekamra Vidyabhaban, Eastern Tower, Room No. 3 ... (Rest.)

BIJAPUR—Shri D. V. Deshpande, Recognised Law Booksellers, Prop. Vinod Book Depot, Near Shiralsheti Chowk ... (Rest.)

BIKANER—Bhandani Bros. ... (Rest.)

BILASPUR—Sharma Book Stall, Sadar Bazar ... (Rest.)

BOMBAY—
1. Supdt. Printing and Stationery, Queens Road
2. Charles Lambert and Co., 101, Mahatma Gandhi Road ... (Reg.)
3. Co-operators Book Depot, 5/32, Ahmed Sailor Bldg., Dadar ... (Reg.)
4. Current Book House, Maruti Lane, Raghunath Dadaji St. ... (Reg.)
5. Current Technical Literature Co. P. Ltd., India House, 1st Floor ... (Reg.)
6. International Book House Ltd., 9, Ash Lane, M. G. Road ... (Reg.)
7. Lakkani Book Depot, Girgaum ... (Reg.)
8. Elpees Agencies, 24, Bhangwadi, Kalbadevi ... (Reg.)
9. P. P. H. Book Stall, 190-B, Khetwadi Main Road ... (Reg.)
10. New Book Co., 188-190, Dr. Dadabhai Naoroji Road (Reg.)
11. Popular Book Depot, Lamington Road ... (Reg.)
12. Sunder Das Gian Chand, 601, Girgaum Road, Near Princess Street ... (Reg.)
13. D. B. Taraporewala Sons and Co. (P) Ltd., 210, Dr. Dadabhai Naoroji Road ... (Reg.)
14. Thacker and Co., Rampart Row ... (Reg.)
15. N. M. Tripathi Private Ltd., Princess Street ... (Reg.)
16. The Kothari Book Depot, King Edward Road ... (Reg.)
17. P. H. Rama Krishna and Sons, 147, Rajaram Bhuvan, Shivaji Park Road No. 5 ... (Rest.)
18. C. Jamnadas and Co., Booksellers, 146-C, Princess Street ... (Reg.)
19. Indo Nath and Co., A-6, Daulat Nagar, Borivli ... (Reg.)
20. Minerva Book Shop, Shop No. 1/80, N. Subhas Road ... (Reg.)
21. Academic Book Co., Association Building, Girgaum Road ... (Rest.)
22. Dominion Publishers, 23, Bell Building, Sir P. M. Road ... (Rest.)
23. Bombay National History Society, 91 Walkeshwar Road ... (Rest.)
24. Dowamadeo and Co., 16, Naziria Building, Ballard Estate ... (Rest.)
25. Asian Trading Co., 310, The Miraball, P. B. 1505 ... (Rest.)

CALCUTTA—
1. Chatterjee and Co., 3/1, Bacharam Chatterjee Lane .. (Reg.)
2. Dass Gupta and Co. Ltd., 54/3, College Street .. (Reg.)
3. Hindu Library, 69A, Bolaram De Street ... (Reg.)
4. S. K. Lahiri and Co. Private Ltd., 14, Bankim
5. M. C. Sarkar and Sons Private Ltd., 14, Bankim Chatterjee Street ... (Reg.)
6. W. Newman and Co. Ltd., 3, Old Court House Street ... (Reg.)
7. Oxford Book and Stationery Co., 17, Park Street ... (Reg.)
8. R. Chambray and Co. Ltd., Kent House, P. 33, Mission Row Extension ... (Reg.)
9. S. C. Sarkar and Sons Private Ltd., 1C, College Square ... (Reg.)
10. Thacker Spink and Co. (1933) P. Ltd., 3, Esplanade East ... (Reg.)
11. Firma K. L. Mukhopadhyay, 6/1A, Banchha Ram Akrar Lane ... (Reg.)

12. K. K. Roy, P. Box No. 10210, Calcutta-19 ... (Rest.)
13. Sm. P. D. Upadhyay, 77, Muktaram Babu Street .. (Rest.)
14. Universal Book Dist., 8/2, Hastings Street ... (Rest.)
15. Modern Book Depot, 9, Chowringhee Centre .. (Rest.)
16. Soor and Co., 125, Canning Street ... (Reg.)
17. S. Bhattacharjee, 49, Dharamtala Street ... (Rest.)
18. Mukherjee Library, 10, Sarba Khan Road ... (Reg.)
19. Current Literature Co., 208, Mahatma Gandhi Road ... (Reg.)
20. The Book Depository, 4/1, Madan Street (1st Floor) (Rest.)
21. Scientific Book Agency, Netaji Subhas Road ... (Rest.)
22. Reliance Trading Co., 17/1, Banku Bihari Ghose Lane, District Howrah ... (Rest)
23. Indian Book Dist. Co., 6512, Mahatma Gandhi Road (Rest.)

CALICUT—Touring Book Stall ... (Rest.)

CHANDIGARH—

1. Supdt. Govt. Printing and Stationery, Punjab
2. Jain Law Agency, Flat No. 8, Sector No. 22 (Reg.)
3. Rama News Agency, Bookseller, Sector No. 22 ... (Reg.)
4. Universal Book Store, Booth 25, Sector 22 D ... (Reg.)
5. English Book Shop, 34, Sector 22D ... (Rest.)
6. Mehta Bros., 15-Z, Sector 22-B ... (Rest.)
7. Tandan Book Depot, Shopping Centre, Sector 16 ... (Rest.)
8. Kailash Law Publishers, Sector 22-B ... (Rest.)

CHHINDWARA—The Verma Book Depot ... (Rest.)

COCHIN—Saraswat Corporation Ltd., Palliarakav Road (Reg.)

CUTTACK—

1. Press Officer, Orissa Sectt.
2. Cuttack Law Times .. (Reg.)
3. Prabhat K. Mahapatra, Mangalabag, P. B. 35 ... (Reg.)
4. D. P. Sur & Sons, Mangalabag ... (Rest.)
5. Utkal Stores, Balu Bazar ... (Rest.)

DEHRA DUN—

1. Jugal Kishore & Co., Rajpur Road ... (Reg.)
2. National News Agency, Paltan Bazar ... (Reg.)
3. Bishan Singh and Mahendra Pal Singh, 318, Chukhuwala ... (Reg.)
4. Utam Pustak Bhandar, Paltan Bazar ... (Rest.)

DELHI—

1. J. M. Jaina & Brothers, Mori Gate ... (Reg.)
2. Atma Ram & Sons, Kashmere Gate ... (Reg.)
3. Federal Law Book Depot, Kashmere Gate ... (Reg.)
4. Bahri Bros., 188, Lajpat Rai Market ... (Reg.)
5. Bawa Harkishan Dass Bedi (Vijaya General Agencies) P. B. 2027, Ahata Kedara, Chamalian Road (Reg.)
6. Book-Well, 4, Sant Narankari Colony, P. B. 1565 ... (Reg.)
7. Imperial Publishing Co., 3, Faiz Bazar, Daryaganj (Reg.)
8. Metropolitan Book Co., 1, Faiz Bazar ... (Reg.)
9. Publication Centre, Subzimandi ... (Reg.)
10. Youngman & Co., Nai Sarak ... (Reg.)
11. Indian Army Book Depot, 3, Daryaganj ... (Reg.)
12. All India Educational Supply Co., Shri Ram Buildings, Jawahar Nagar ... (Rest.)
13. Dhanwant Medical & Law Book House, 1522, Lajpat Rai Market ... (Rest.)
14. University Book House, 15, U. B. Bangalore Road, Jawahar Nagar ... (Rest.)
15. Law Literature House, 2646, Balimaran ... (Rest.)
16. Summer Brothers, P. O. Birla Lines ... (Rest.)
17. Universal Book & Stationery Co., 16, Netaji Subhas Marg ... (Reg.)
18. B. Nath & Bros., 3808, Charkhawalan (Chowri Bazar) ... (Rest.)
19. Rajkamal Prakashan P. Ltd., 8, Faiz Bazar ... (Reg.)
20. Premier Book Co., Printers, Publishers & Booksellers, Nai Sarak ... (Rest.)
21. Universal Book Traders, 80, Gokhale Market ... (Reg.)
22. Tech. & Commercial Book Coy., 75, Gokhale Market ... (Rest.)
23. Saini Law Publishing Co., 1416, Chabiganj, Kashmere Gate ... (Rest.)
24. G. M. Ahuja, Booksellers & Stationers, 309, Nehru Bazar ... (Rest.)
25. Sat Narain & Sons, 3141, Mohd. Ali Bazar, Mori Gate ... (Reg.)
26. Kitab Mahal (Wholesale Div.) P. Ltd., 28, Faiz Bazar ... (Reg.)
27. Hindu Sahitya Sansar, Nai Sarak ... (Rest.)
28. Munshi Ram Manohar Lal, Oriental Booksellers & Publishers, P. B. 1165, Nai Sarak .. (Rest.)
29. K. L. Seth, Suppliers of Law, Commercial, Tech. Books, Shanti Nagar, Ganeshpura ... (Rest.)
30. Adarsh Publishing Service, 5 A/10, Ansari Road ... (Rest.)

DHANBAD—

1. Ismag Co-operative Stores Ltd., P. O. Indian School of Mines ... (Reg.)
2. New Sketch Press, Post Box 26 ... (Rest.)

DHARWAR—

1. The agricultural College Consumers Co.-operative Society ... (Rest.)
2. Rameshraya Book Depot, Subhas Road ... (Rest.)
3. Karnatakaya Sahitya Mandira of Publishers and Booksellers ...

ERNAKULAM—

1. Pai & Co., Cloth Bazar Road ... (Rest.)
2. South India Traders, C/o Constitutional Journal (Reg.)

FEROZEPUR—English Book Depot, 78, Jhoke Road ... (Reg.)

GAUHATI—Mokshada Pustakalaya ... (Reg.)

GAYA—Sahitya Sadan, Gautam Budha Marg ... (Reg.)

GHAZIABAD—Jayana Book Agency ... (Rest.)

GORAKHPUR—Vishwa Vidyalaya Prakshan, Nakhes Road ... (Reg.)

GUDUR—The General Manager, The N. D. C. Publishing & Printing Society Ltd. ... (Rest.)

GUNTUR—Book Lovers Private Ltd., Kadriguda, Chowrasta ... (Reg.)

GWALIOR—

1. Supdt., Printing & Stationery, M. B.
2. Loyal Book Depot, Patankar Bazar, Lashkar ... (Reg.)
3. M. C. Dattari, Prop. M. B. Jain & Bros., Booksellers, Sarafa, Lashkar ... (Rest.)

HUBLI—Pervaje's Book House, Koppikar Road ... (Reg.)

HYDERABAD—

1. Director, Govt. Press
2. The Swaraj Book Depot, Lakdikapul ... (Reg.)
3. Book Lovers Private Ltd. ... (Rest.)
4. Labour Law Publications, 873, Sultan Bazar ... (Rest.)

IMPHAL—Tikendra and Sons, Booksellers ... (Rest.)

INDORE—

1. Wadhawa and Co., 56, M. G. Road ... (Reg.)
2. Swarup Brothers, Khajuri Bazar ... (Rest.)
3. Madhya Pradesh Book Centre, 41, Ahilya Pura ... (Rest.)
4. Modern Book House, Shiv Vilas Palace ... (Rest.)
5. Navyug Sahitya Sadan, Publishers and Booksellers, 10, Khajuri Bazar ... (Rest.)

JABALPUR—

1. Modern Book House, 286, Jawaharganj ... (Reg.)
2. National Book House, 135, Jai Prakash Narain Marg (R)

JAIPUR—

1. Government Printing and Stationery Department, Rajasthan
2. Bharat Law House, Booksellers and Publishers, Opp. Prem Prakash Cinema ... (Reg.)
3. Garg Book Co., Tripolia Bazar ... (Reg.)
4. Vani Mandir, Sawai Mansingh Highway ... (Reg.)
5. Kalyan Mal and Sons, Tripolia Bazar ... (Rest.)
6. Popular Book Depot, Chaura Rasta ... (Reg.)
7. Krishna Book Depot, Chaura Rasta ... (Rest.)
8. Dominion Law Depot, Shah Building, P. B. No. 23 (Rest.)

JAMNAGAR—Swadeshi Vastu Bhandar ... (Reg.)

JAMSHEDPUR—

1. Amar Kitab Ghar, Diagonal Road, P. B. 78 ... (Reg.)
2. Gupta Stores, Dhatkidih ... (Reg.)
3. Sanyal Bros., Booksellers and News Agents, Bistupur Market ... (Rest.)

JAWALAPUR—Shayog Book Depot ... (Rest.)

JHUNJHUNU—

1. Shashi Kumar Sarat Chand ... (Rest.)
2. Kapram Prakashan Prasaran, 1/90, Namdha Niwas, Azad Marg ... (R.)

JODHPUR—

1. Dwaraka Das Rathi, Wholesale Books and News Agents ... (Reg.)
2. Kitab-Ghar, Sojati Gate ... (Reg.)

3. Choppra Brothers, Tripolia Bazar ... (Reg.)

JULLUNDUR—
1. Hazooria Bros., Mai Hiran Gate (Rest.)
2. Jain General House, Bazar Bansanwala ... (Reg.)
3. University Publishers, Railway Road (Rest.)

KANPUR—
1. Advani and Co., P. Box 100, The Mall ... (Reg.)
2. Sahitya Niketan, Shradhanand Park ... (Reg.)
3. The Universal Book Stall, The Mall .. (Reg.)
4. Raj Corporation, Raj House, P. B. 200, Chowk ... (Rest.)

KARUR—Shri V. Nagaraja Rao, 26, Srinivaspuram ... (Rest.)

KODARMA—The Bhagwati Press, P. O. Jhumri Tilaiya, District Hazaribagh ... (Reg.)

KOLHAPUR—Maharashtra Granth Bhandar, Mahadwar Road ... (Rest.)

KOTA—Kota Book Depot ... (Rest.)

KUMTA—S. V. Kamat, Booksellers and Stationers (N. Kanara) ... (Reg.)

LUCKNOW—
1. Soochna Sahitya Depot (State Book Depot)
2. Balkrishna Book Co. Ltd., Hazratganj .. (Reg.)
3. British Book Depot, 84, Hazratganj ... (Reg.)
4. Ram Advani, Hazratganj, P. B. 154 .. (Reg.)
5. Universal Publishers (P) Ltd., Hazratganj ... (Reg.)
6. Eastern Book Co., Lalbagh Road ... (Reg.)
7. Civil and Military Educatioinal Stores, 106/B, Sadar Bazar ... (Rest.)
8. Acquarium Supply Co., 213, Faizabad Road .. (Rest.)
9. Law Book Mart, Amin-Ud-Daula Park .. (Rest.)

LUDHIANA—
1. Layall Book Depot, Chaura Bazar ... (Reg.)
2. Mohindra Brothers, Katcheri Road ... (Rest.)
3. Nanda Stationery Bhandar, Pustak Bazar ... (Rest.)
4. The Pharmacy News, Pindi Street .. (Rest.)

MADRAS—
1. Superintendent, Government Press, Mount Road
2. Account Test Institute, P. O. 760, Emgore ... (Reg.)
3. C. Subbiah Chetty and Co., Triplicane ... (Reg.)
4. K. Krishnamurty, Post Box 384 ... (Reg.)
5. Presidency Book Supplies, 8, Pycrofts Road, Triplicane ... (Reg.)
6. P. Vardhachary and Co., 8, Linghi Chetty Street ... (Reg.)
7. Palani Parchuram, 3, Pycrofts Road, Triplicane .. (Reg.)
8. NCBH Private Ltd., 199, Mount Road ... (Rest.)
9. V. Sadanand, The Personal Bookshop, 10, Congress Building, 11, Mount Road .. (Rest.)

MADURAI—
1. Oriental Book House, 258, West Masi Street ... (Reg.)
2. Vivekananda Press, 48, West Masi Street ... (Reg.)

MANDYASUGAR TOWN—K. N. Narimhe Gowda and Sons ... (Rest.)

MANGALORE—U. R. Shenoye Sons, Car Street, Post Box 128 ... (Reg.)

MANJESHWAR—Mukenda Krishna Nayak .. (Rest.)

MATHURA—Rath & Co., Tilohi Building, Bengali Ghat (Rest.)

MEERUT—
1. Prakash Educational Stores, Subhas Bazar .. (Reg.)
2. Hind Chitra Press, West Kutchery Road ... (Reg.)
3. Loyal Book Depot, Chhipi Tank ... (Reg.)
4. Bharat Educational Stores, Chhippi Tank .. (Rest.)
5. Universal Book Depot, Booksellers and News Agents ... (Rest.)

MONGHYR—Anuasandhan, Minerva Press Building ... (Rest.)

MUSSOORIE—
1. Cambridge Book Depot, The Mall ... (Rest.)
2. Hind Traders ... (Rest.)

MUZAFFARNAGAR—
1. Mittal and Co., 85-C, New Mandi (Rest.)
2. B. S. Jain and Co., 71, Abupura ... (Rest.)

MUZAFFARPUR—
1. Scientific and Educational Supply Syndicate ... (Reg.)
2. Legal Corner, Tikmanio House, Amgola Road .. (Rest.)
3. Tirhut Book Depot ... (Rest.)

MYSORE—
1. H. Venkatramaiah and Sons, New Statue Circle .. (Reg.)
2. Peoples Book House, Opp. Jagan Mohan Palace .. (Reg.)
3. Geeta Book House, Booksellers and Publishers, Krishnamurthipuram ... (Rest.)
4. Newspaper House, Lansdowne Building ... (Rest.)
5. Indian Mercantile Corporation, Toy Palace, Ramvilas ... (Rest.)

NADIAD—R. S. Dessay, Station Road ... (Rest.)

NAGPUR—
1. Superintendent, Government Press & Book Depot
2. Western Book Depot, Residency Road .. (Reg.)
3. The Asst. Secretary Mineral Industry Association, Mineral House ... (Rest.)

NAINITAL—Coural Book Depot, Bara Bazar ... (Rest.)

NANDED—
1 Book Centre, College, Law, General Books, Station Road ... (Rest.)
2. Hindustan General Stores, Paper and Stationery Merchants, P. B. No 51 ... (Rest.)
3. Sanjoy Book Agency, Vazirabad .. (Rest.)

NEW DELHI—
1. Amrit Book Co., Connaught Circus .. (Reg.)
2. Bhawani and Sons, 8 F, Connaught Place ... (Reg.)
3. Central News Agency, 23/90, Connaught Circus .. (Reg.)
4. Empire Book Depot, 278, Aliganj ... (Reg.)
5. English Book Stores, 7-L, Connaught Circus, P. O. Box 328 ... (Reg.)
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17. New Book Depot, Latest Books, Periodicals, Stationery and Novelles, P. B. 96, Connaught Place ... (Reg.)
18. Mehra Brothers, 50-G, Kalkaji ... (Reg.)
19. Laxmi Book Stores, 42, Janpath .. (Rest.)
20. Hindi Book House, 82, Janpath .. (Rest.)
21. Peoples Publishing House (P) Ltd., Rani Jhansi Road ... (Reg.)
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23. Sharma Bros., 17, New Market, Moti Nagar ... (Reg.)
24. Aapki Dukan, 5/5777, Deb Nagar ... (Rest.)
25. Sarvodaya Service, 66A-1, Rohtak Road, P. B. 2521 (Rest.)
26. H. Chandson, P. B. No. 3034 ... (Rest.)
27 The Secretary, Federation of Association of Small Industry of India, 23-B/2, Rohtak Road ... (Rest.)
28. Standard Booksellers and Stationers, Palam Enclave ... (Rest.)
29. Lakshmi Book Depot, 57, Regarpura ... (Rest.)
30. Sant Ram Booksellers, 16, New Municipal Market, Lody Colony ... (Rest.)

PANJIM—
1. Singhals Book House, P. O Box 70, Near the Church ... (Rest.)
2. Sagoon Gaydev Dhoud, Booksellers, 5-7, Rua, 3, Idc Jameria ... (Rest.)

PATHANKOT—The Krishana Book Dept, Main Bazar ... (Rest.)

PATIALA—
1. Superintendent, Bhupendra State Press
2. Jain and Co., 17, Shah Nashin Bazar (Reg.)

PATNA—
1. Superintendent, Government Printing (Bihar)
2. J. N. P. Agarwal and Co., Padri-Ki-Haveli, Raghunath Bhaban ... (Reg.)
3. Luxmi Trading Co., Padri-Ki-Haveli ... (Reg.)
4. Moti Lal Banarasi Dass, Bankipore ... (Rest.)
5. Bengal Law House, Chowhatta ... (Rest.)

PITHORAGARH—Maniram Punetha and Sons ... (Rest.)

PONDICHERRY—M/s. Honesty Book House, 9, Due Duplix ... (R.)

POONA—
1. Deccan Book Stall, Deccan Gymkhana ... (Reg.)
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5. B. H. U. Book Depot (Rest.)

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1. S/s Education Enterprise Private Ltd., Kathmandu (Nepal)
2. S/s Aktie Bologat, C. E. Fritzes Kungl, Hovobokhandel, Fredsgation-2, Box 1656, Stockholm-16 (Sweden)
3. Reise-und Verkehrsverlag Stuttgart, Post 730, Gutenbergstra 21, Stuttgart No. 11245, Stuttgart den (Germany West)
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8. The Head Clerk, Photozincographic Press, 5, Finance Road, Poona
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