

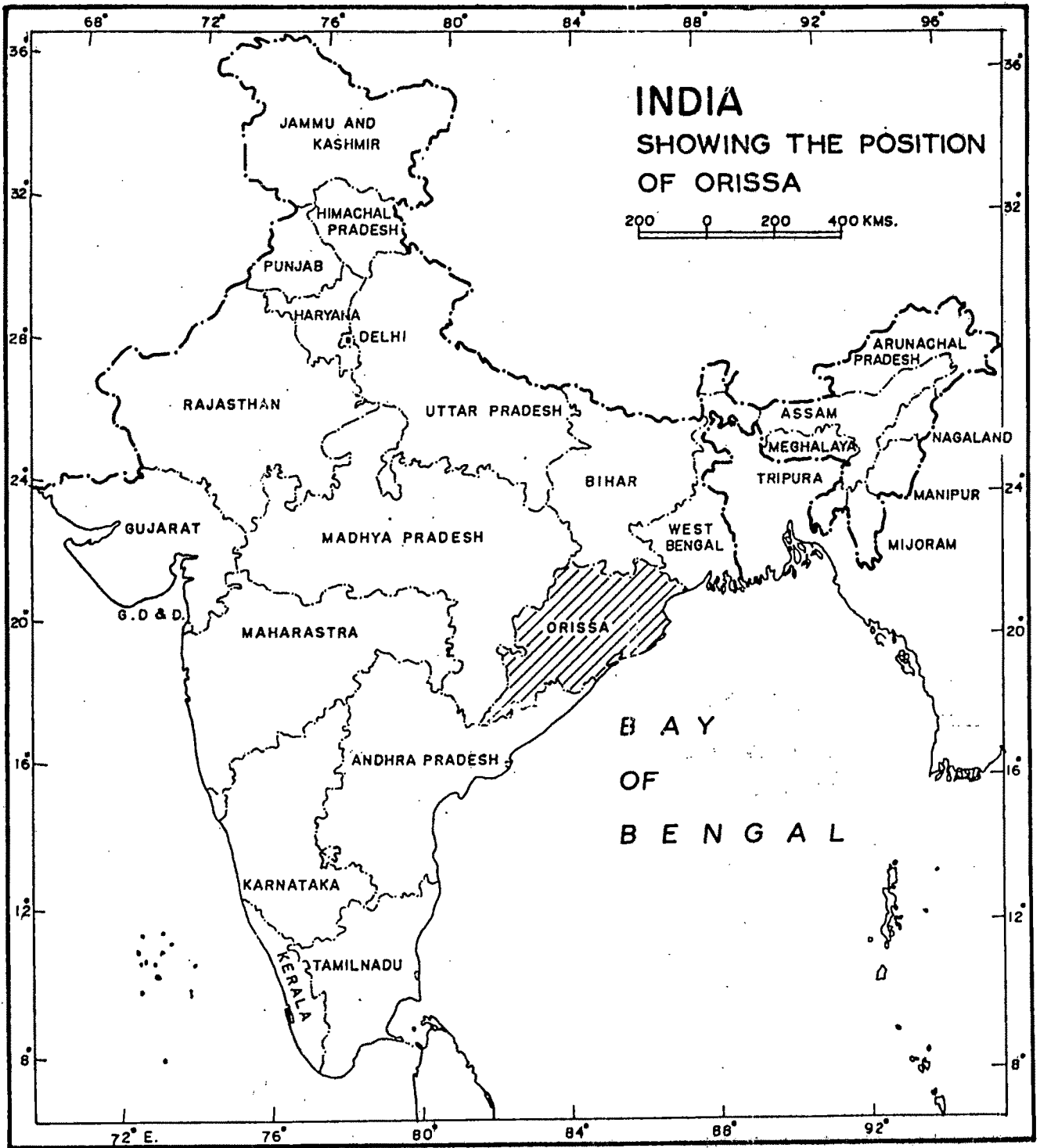
CHAPTER - I

Design of the Study

DESIGN OF THE STUDY

The pressure of the current events need closer study of human ecology which was neglected in the past. Present day economics involves the question of human labour, linked to human health. Maximum utilisation of natural resources takes it imperative that we acquire a knowledge of potential epidemics, for the relationship between man and the land on which he must live determines the limits to which the land can be developed. All these pressing problems of our time compel us to give closer attention to the geographical distribution of pathology¹. The study of the distribution of the pathology gave rise to a new branch of applied geography, named 'Medical Geography'.

??
The marginal field of medical geography is the study of the relationship between various pathogens and the various geogens which surround the occurrence of diseases. The first aim of the medical geographer is to map the distribution of diseases throughout the region. Once person, disease and place are known, the researcher may be able to understand why some one is affected and some one else is not. Geographical factors may emerge as paramount in the creation of the pattern of distribution. The measurement of the importance of these factors is the second aim of the medical geography. It is thus ultimately a study of correlations.



Map - 1

Tribal health is a study primarily carried on by sociologists and anthropologists. But during their studies the underneath geographical or environmental causes are neglected. Orissa is a tribal dominated state in which the northern part is considered as highly tribal concentrated region. This area is also regarded as one of the backward region of the state. The health problem of this region is alarming, but so far no intensive research work has been attempted to study the health problems of this region. This study attempts to analyse the distribution of diseases in this tribal dominated region along with to find out the various geographical (both physical and socio-cultural) factors responsible for the high concentration of various health disorders in the region.

TOPIC :-

The title of the thesis is :Environment and Health Disorders in Tribal Region of Northern Orissa.

NEED OF THE STUDY :-

Although the tribal dominated northern Orissa is considered as one of the disease prone regions in the state, the geographical distribution of the diseases and its underneath environmental causes have not been studied so far. It is a totally neglected area inviting the attention of researchers, and in particular, geographers. The extra-ordinary importance of 'Health for All by 2000 A.D.' in

the developmental process and the inexcusable neglect meted out to it has inspired the researcher to investigate this area. Hence this study.

OBJECTIVES OF THE STUDY :-

The objectives of the study were :-

- i) To review the related studies pertaining to medical geography and tribal health conducted so far, as far as possible ;
- ii) To provide a back-drop of Northern Orissa, so that the overall context of the developmental process and the inbuilt hindrances can be appreciated ;
- iii) To critically examine the concept of health and health disorders;
- iv) To examine the nutritional status of the study region ;
- v) To analyse the distribution pattern of various diseases at the block level by using different quantitative and mapping techniques ;
- vi) To find out the causative agents of the environment which are responsible for various health disorders;

- vii) To examine the health condition in perspective of the quantity and quality of actual food intake ;
- viii) To examine the health care facilities available in the study region; and
- ix) To suggest remedial steps for the better health facilities in the study region.

SCOPE AND DELIMITATION OF THE STUDY :-

The study provides the broad theoretical analysis relating to distribution of various health disorders, the causative agents of the environment responsible for health disorders and the health care facilities available in the study region.

However, the study suffers from certain limitations. These are ;

- i) As the governmental data relating to diseases are not classified as tribals and non-tribals categories and also the whole region is a tribal dominated region having tribal population more than half of the total population, separate analysis of tribals and non-tribals health disorders had not been attempted.

- ii) As the entire study region is primarily dominated by the rural areas, while studying the various health disorders at the block-level, separate studies for the rural and urban areas had not been attempted.

- iii) Although the Anandpur block of the Keonjhar district is not a TSP block, it had been taken into consideration to maintain continuity of the region.

- iv) As the quantitative analysis of the causative geographical factors responsible for various health disorders is not possible, only qualitative analysis had been made to find out the causative factors depending upon the local doctor's views collected during the disease-survey.

- v) The disease incidence data collected from the Health Department is based upon International Classification of Diseases in which the deficiency diseases are not classified according to nutrient wise but are grouped in one class only. So it was not possible to find out the frequency of various diseases nutrient wise.

vi) As the private doctors do not maintain any record of the patients, the cases treated by them were out of the purview of the study.

vii) While studying the health care facilities, the private health-care facilities were not taken into consideration. The planning of health care facilities at the micro-level was out of the purview of the study.

DELIMITATION OF THE STUDY REGION :-

The northern Orissa is considered as one of the tribal dominated backward areas in the state. The total number of community development blocks in the northern Orissa is 56. Out of the total 56 blocks, government has declared 55 blocks as Tribal sub-plan (T.S.P.) blocks excluding Anandpur block of the Keonjhar district. To examine the backwardness of these three districts as per the scheduled tribe and scheduled caste concentration in the region, the researcher had calculated the Index of backward population of each district of Orissa following the formula proposed by Pathak., Aziz and Chattopadhyay² (1970).

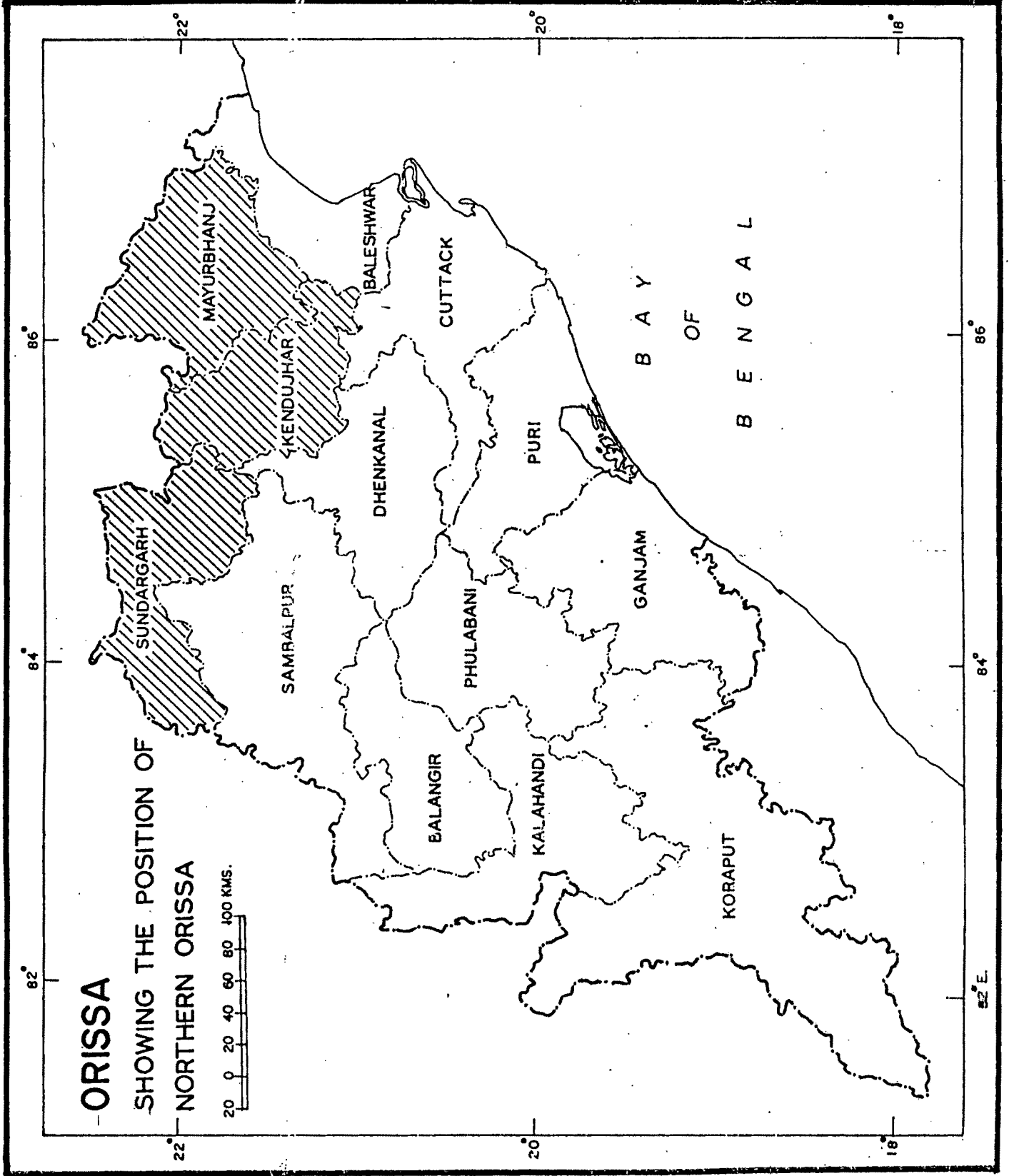
The Index of backward population is Sc St I_i.

Mathematically,

$$Sc\ St\ I_i = \frac{S^{P_i}}{\sum_{i=1}^m S^{P_i} / m}$$

Where,

$$S^{P_i} = \frac{Sc\ P_i + St\ P_i}{P_i} \times 100$$



Map - 2

and,

Sc_i^P =No. of Schedule caste population in the district i

St_i^P =No. of Schedule tribe population in the district i

P_i =Total population of in the district i

m =Total number of districts

Higher the value of this index lower is the level of development. Thus this will exert a negative effect on the aggregate synthetic.

All the thirteen districts of Orissa had been categorised according to their respective index of backward population.

TABLE - 1.1
CLASSIFICATION OF DISTRICTS AS PER THE
INDEX OF BACKWARD POPULATION 1991

Rank	District
Upto 0.50 (Low)	Puri
0.51-1.00 (Medium)	Balasore, Bolangir, Cuttack, Dhenkanal Ganjam.
Above 1.01 (High)	Kalahandi, Koraput, Keonjhar, Mayurbhanj, Phulbani, Sundargarh, Sambalpur.

Table 1.1 reveals that the districts of Northern Orissa i.e. Sundergarh, Mayurbhanj and Keonjhar have high indices of backward population, thus the level of development is low in these three districts. These three districts of northern Orissa form the study region of the present study.

Northern Orissa has an area of 28433 Sq. Kms. It extends from $83^{\circ} 32' 18''$ to $87^{\circ} 11' 32''$ Eastern longitude and $21^{\circ} 4' 17''$ to $22^{\circ} 32' 8''$ Northern latitude. It is bounded by the states of Bihar on the North, West Bengal on the North East, Madhy Pradesh on West, Balasore district on East and South East and Sambalpur, Dhenkanal and part of Cuttack district on South.

ORGANISATION OF THE STUDY :-

- (i) **Demographic Data :** As the demographic data of 1991 Census, at the Block level are not available, the Census data of 1971 and 1981 had been collected and projected population of 1991 had been calculated. Other data relating to area, educational level etc., were collected from Census of India, Directorate of Public Instruction, Orissa, Tribal and Harijan Research and Training Institute (THRTI), Bhubaneswar, District Statistical Hand Books, and other governmental sources. The block-wise tribal population data had been collected from the Welfare Department (Tribal & Harijan) of Govt. of Orissa.

(ii) **Disease Incidence Data** : The disease incidence data health centrewise had been collected from Directorate of Health, Orissa, for the years 1985 to 1990. These were summed up block-wise to get disease incidence data at the block level.

Beside above, the researcher had collected data relating to diseases from the CDMOs of Sundargarh, Mayurbhanj and Keonjhar districts and informations regarding various health disorders during the diet survey conducted in the study region.

(iii) **Nutritional Data** : The Nutritional standard as recommended by NIN, Hyderabad had been followed in the study. In order to know the nutritional status of the people in the study region, a diet survey had been conducted family wise (Ten families in each Village) in 112 villages selected (two villages from each block) through systematic random sampling method.

(iv) **Health Care Data** : The health-care data such as number of health centres, number of beds, number of doctors etc. had been collected from Directorate of Health, Orissa.

Besides above, a number of libraries had been consulted for the review of related literatures. Other

relevant data had been collected from various journals, governmental agencies and reports published by the state and central government time to time.

RATIONALE OF CHAPTERISATION :-

Chapter - I is a brief description of the design of the study.

In Chapter-II related literatures have been reviewed.

A comprehensive physical background of Northern Orissa is provided in Chapter - III.

Socio-cultural background with the demographic Characteristics of the study region have been discussed in Chapter - IV.

Chapter - V deals with a brief discussion on concept of health and health disorders.

Chapter - VI deals with the general nutritional structure of the study region.

In Chapter - VII the ranking of various health-disorders at block level and their distributional pattern along with the study of causative factors have been made. Necessary mapping techniques have been followed to provide a

clear-cut picture of the health problems in the study region.

In Chapter - VIII the study of various nutritional disorders and their distributional pattern in the study region have been attempted.

Chapter - IX deals with the health-care facilities available in the study region.

Chapter - X contains the brief summary and conclusion along with the specific suggestions made by the researcher.

An exhaustive bibliography have been incorporated and necessary appendices conclude the thesis.

REFERENCES

1. J. May & S. Walsh : " Medical Geography : A Programme of Studies of the American Geographical Society," *Silver Jubilee Journal, Indian Geographical Society, Madras, 1953 pp, 161-164.*

2. C.R. Pathak et.al. : " Identification of Planning Areas in the Three State Region - Bihar, Orissa and West Bengal, With Respect to their Levels of Development and Planning Problems ", *Indian Journal Of Regional Science, Regional Science Association, India, IIT, Kharagpur, Vol II, 1, 1970. P.76.*
