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**A SPATIAL ANALYSIS OF INDUSTRIES
IN
COCHIN AND ENVIRONS**

BALAGOPALAN, T. S.

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A dissertation submitted in partial fulfilment
of the requirements for the Degree of Master of
Engineering (Civil), Town Planning, of the
University of Poona.

By

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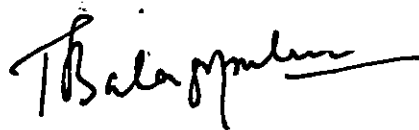
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April, 1969.

Poona-5.



(Balagopalan T.S.).

Submitted to :


The University of Poona
Poona-7.

To My Mother

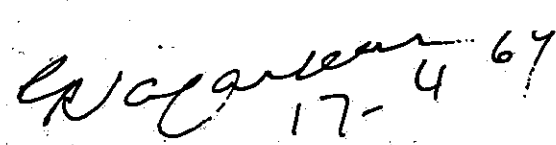
C E R T I F I C A T E

This dissertation entitled "A SPATIAL ANALYSIS OF INDUSTRIES IN COCHIN & ENVIRONS" is the bonafide work done by Shri Balagopalan, T.S. in the Town Planning Department of the College of Engineering, Poona. It has been completed under my guidance. This work forms a part of the requirements for the Master of Engineering Degree in Civil, Town Planning.

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(Balagopalan T.S.).

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I N T R O D U C T I O N

There is almost universal agreement at the present time that industrialization has a major role to play in the economic development of the developing countries and is one of the most effective ways to eliminate their economic handicaps, to achieve a substantial growth of output and to raise the level of living of their population.¹ Industrialization can, however, cause varied social and spatial problems in any community. In urban communities particularly, proper analyses of these problems are necessary preconditions for perspective planning.

1. United Nations, New York (1965) : Report of the Inter-regional Seminar on Social Aspects of Industrialization p.1.

Kerala is a typical case of a backward or stagnant economy, with all the characteristic features of excessive dependence on land and agriculture, low income, poor capital formation and hardly any economic growth with vast unemployment and under-employment.² During the plan periods attempts have been made for the development of traditional industries and setting up new industries in both private and public sector. The spatial distribution of these establishments have certain characteristic features with regard to location, structure and growth pattern.

Fast Growing Industrial Areas :

The industrial establishments are apparently spread throughout the length of Kerala in a haphazard manner. However there are certain regions which have registered comparatively more rapid industrial development. In the southern part of Kerala, Kundara and Quilon, located in Quilon district, form the most important industrial centre. This has been so for two decades as far as Kundara is concerned and a still longer period in the case of Quilon. While processing of cashew, saw mills, manufacture of cotton textiles, silk, electrical goods etc. constitute the chief items of the industry in Quilon, Kundara has equally large

2. Government of Kerala (1967) : Industrial Policy Statement.

variety of industries comprising of ceramics, aluminium cables, rods and conductors, enamel goods, starch, electrical goods etc.

In the northern parts, Calicut-Kallai area is the growing industrial centre. Kallai is the second biggest timber yard in the world³ and has prospects for many timber-based industries. Calicut has varied industrial establishments like hydrogenation factory, oil and soap factory, rayon pulp factory, a re-rolling mill etc.

The most important industrial region, however, is the city of Cochin and its environs, lying in the middle part of Kerala. This is the area uniquely blessed with the location of industries like fertilizers and chemicals aluminium, glass, D.D.T., tiles and ceramics, cotton textiles, machine tools, rayons, oil mills, refineries, mineral oil installations, coir factories, fisheries, boat building yards etc. The location of the second ship building yard at Cochin will give impetus to a series of ancillary industries in and around the city of Cochin, making it the industrial capital of Kerala.

Problems Defined :

Cochin city and its environs form the study-area of this dissertation. The fact that this region has

3. Census of India 1961 Vol.VII Kerala Part IV A, p.83.

shown spectacular development pattern which will influence the entire industrial economy of Kerala state is the prime reason for the selection of this area. Proximity to the major port of Cochin distinguishes this area from Calicut-Kallai area and Quilon-Kundara area, although, in many other respects the three areas are identical in character. However, the methodology adopted for the analysis of industries in the city of Cochin and environs may be suitable for the other areas as well. The study proposed here is to cover the following main points :

1. What is the role of Cochin and environs in the economy of Kerala and India?
2. How this area came to be developed as an industrial centre?
3. What are the characteristic features of the spatial distribution of industries in this area?
4. What are the factors which have influenced this pattern?
5. What are the impacts of industrialization on the socio-economic aspect of the people?
6. Is it possible to deduce some guide lines for the future planning of industries in this area?

Limitations of the Work :

The writer spent considerable time in the study area collecting data from various sources and having on the spot inspection of some industrial locations.

Apart from a few published reports by the various departments of the State Government, and a compilation of papers read in a seminar on Greater Cochin development organised by All India Manufacturers Organization and Cochin Chamber of Commerce and Industry in 1967, the writer has drawn information and data from the Cochin Regional Office of the Town Planning Department of the State. However much of the useful data collected by a survey of industrial establishment was in the process of tabulation and could not be obtained in full. Lack of time ruled out a detailed survey of industrial establishments by the writer. Hence reliance had to be placed mostly on published reports of the Bureau of Economics and Statistics and the Industries Department of Kerala State. Within these limitations, an attempt has been made to develop a technique for the spatial analysis of industries in Cochin and environs and to reach certain conclusions in the following chapters.

Organization of the Work:

The work is divided for convenience into three parts. Part I is a summary of the back-ground study regarding the economy of the Kerala State and the industrial structure that has developed therein. This summary is meant to fix the role of the region wherein the study area falls. Part II is the attempt to analyse the growth of Cochin City, the structure and distribution

of industries in the city and the environs. The analysis and the technique developed is meant to emphasise the various factors of the problem, much useful for planning. Part III is devoted for discussing the social aspects of industrialization and the impact of industries on urban growth pattern, and to derive certain conclusions based on the analysis attempted in Part II. Each part is also divided into various chapters.

Some Words Explained :

The boundaries of legal city and natural city often are different. While much of the information may relate to the legal city, peripheral expansion of physical entites like industry, commerce and residence, will necessitate a larger area to be considered for spatial analyses. The word 'environs' means adjacent districts, peripheral fringes, neighbourhoods or suburbs. For a city to what extent the environs continue is a problem of research by itself. For a city of population more than one lakh, the urban influence is assumed to extend upto a circle of 24 k.m. radius.⁴ This assumption however is only arbitrary. For the present study an area much larger than this limit is taken so that the analysis will evolve a specific area as environs.

4. Census of India (1961) - Volume VII Kerala. Part IX, Census Atlas, Map 38, Degree of Urbanization - See explanation of the map.

The words 'industries', 'industrial establishments', and 'factories' are used synonymously in the present study. These are institutions registered under section 2 m(1) and (ii) and section 85 of Indian Factories Act 1948. For this work only the former category is considered. The relevent Section reads thus :

2(m) "factory" means any premises including the precincts there of -

(i) where on ten or more workers are working , or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or

(ii) where on twenty or more workers are working , or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is carried on without the aid of power, or is ordinarily so carried on, -

but does not include a mine subject to the operation of the Mines Act, 1952 (XXXV of 1952), or a railway running shed.

Again the classification of industries into small, medium and large sized units is arbitrary. No classification is attempted based on performance standards due to lack of data.