THE SPATIAL IMPACT OF INDUSTRIAL ESTABLISHMENTS ON THE ENVIRONMENT IN ESAN WEST LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA

BY

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CERTIFICATION

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DEDICATION

This thesis is dedicated to Almighty God, the source and giver of life, strength, knowledge, wisdom and my entire family and well-wishers.

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ABSTRACT

This study examined the types of industries, their attributes and their distribution in Esan West Local Government Area of Edo State; assessed the perception of the residents on the impact of the location of industries on the immediate environment; and evaluated the waste management practices of the selected industries of the study area. These were with the view to determine the spatial impact of industrial establishments on the environment in the area.

The study employed Primary and secondary sources of data. Primary data were collected through questionnaire administration, conduct of oral interview and the determination of (x, y) ground coordinates of features of interest using the Global Positioning System (GPS). A total of two hundred copies of the questionnaire were administered. Stratified sampling technique was employed in administering the questionnaire in which percentages were used to sample the number of employees and members of the neighbourhood from the 10 administrative wards. The questionnaire and oral interview were used to assess the spatial impact of the industries and the perception of the environmental pollution on the immediate environment. Primary data were analysed using frequency tables and simple percentages. The nearest neighbour analysis was used to determine the spatial pattern of distribution of the industrial types in the study area. The secondary data which comprises of the existing information about the industries from the ministry of industry, Benin City in Edo State and land use map of the local Government Area which was obtained from the planning office. The secondary data were analysed using spearman correlation coefficient analysis to rank between the environmental pollution and industrial types and frequency tables and percentages were used to evaluate the waste management

practices of the selected industries of the study area. Maps were also used to show the pattern of distribution of the industry.

The results showed that the industries in the study area were classified into three types; building and construction, semi-processing of raw materials, and foods and drinks industries. The industries were generally clustered and more in three wards (4, 5, and 6) but were dispersed and fewer in the remaining wards in the LGA. Perceptions of the residents on the impacts of industrial location showed that although the industries promoted employment opportunities (87.1%) and ensured better access to infrastructure (82%), industrial location also encourage pollution such as noise pollution, problem of waste disposal, air pollution, erosion and land degradation. Pollution ranked in the first-five important concerns for about 80% respondents. The result of evaluation of the waste management practices indicated that industrial wastes are often either burnt (48.1), dumped in the bush (24.1%) or dumped in an open space (19.3%), and majority of the residents (63.7%) described these waste management practices as ineffective.

The study concluded that industrial establishments promoted employment opportunity and improved infrastructure but caused environmental pollution in the study area.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Industrial establishment is a key to regional development which considers the factors such as transportation, market and source of raw materials for sustainable development (Alfred, 1909; Segynola, 2003). According to Jain and Khanna (2013) defined industry as an organisation that produces goods and services to earn profits.

Industries can be categorised base on the mode of their services and the nature of processing of the raw materials these include; primary, secondary, Tertiary and Quaternary (Onokerhoraye, 1986; Akinbode, 2002). Ajala (1998) grouped industries: small, medium or large scale industries. Different types of industry exist in an area. Industries can be classified either by using raw material, the numbers of workers employed, the amount of capital invested, and functions rendered by the industries approach. Using capital and labour approaches, there are large, medium and small scale industries. The Central Bank of Nigeria (2001) defined small-scale industrial establishment having capital investment of not more than N50,000.00 and employing 11-100 workers, and medium scale industry having capital investment of between N50,000.00 and N200,000.00 and employing 101-300 workers and while large-scale industry is an industrial establishment having capital investment greater than N200,000.00 and employing more than 300 workers.

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Using raw material approach, two types of industries emerge, these are agro – based and non- agro-based, Agro-based industries are those groups of industries that use agricultural raw materials for production. The industries in these groups includes: feeds and flour mills, soap industries, saw milling, furniture making, rice mill, cassava industries (Oyebanji, 1983 and Mainsamari, 2003). Non agro – based industries, on the other hand, are those industrial establishments that do not use agricultural products in their production process. The industries in this group include banking services, energy generation industries, vulcanizing, motor works, transportation services, communication, and construction industries (oyebanji, 1983). Based on the functional approach of classifying industries, two types of industries emerge. These are tangible goods industries and non–tangible goods industries. The tangible goods industries are those industries that are involved in the production of goods that can be handled such as sawmills, block moulding industries, pure water factories and bakery. The non-tangible goods industries are the industries that are involved in the rendering of services. These include banking, educational institution transformation and communication industries.

Locations of industries are influenced by the government for proper monitoring and safety of the citizen. However, Industries in Nigeria and other developing countries are often haphazardly established due to unavailability of master plan, unimplemented industrial policy and lack of industry location awareness (Afolabi, 2007). Haphazard location of industries do pose significant effects on the people living in the environment such as health hazard, which can be as a result of poor industrial waste disposal system

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(Owolabi, 2000; UNIDO, 2000). Despite the problems associated with haphazard location and poor waste management by many industries, establishment of industries in any area is still regarded as propeller of both rural and underdevelopment (Olayiwola and Adeleye, 2005).

Perceptions also vary among people on the impact of industrial establishment in their region. Information on the varying perceptions on environmental impact of industrial establishments is not well known, probably because they exhibit spatial and temporal variation based on differences in people's culture and value system(Akinbode, 1996).

One of the strategies of regional development is industrialization. In Nigeria, forces of modern economic production have been concentrated in a few cities especially the state capitals, ports and other administrative centres. For manufacturing activities, these concentrations have usually been explained in terms of the specific principles of industrial location in the country. For instance, Mabogunje (1973) and Aboyade (1978) argued that industrialisation in Nigeria arose either as a result of the need for the valorisation of raw agricultural product or the beneficiation of minerals for export.

Industrialisation is very important in all modern economies as a "growth-generating" sector having a profound influence on jobs creation and income not only in the actual manufacturing of goods but also in other branches of economic activities which provide manufacturers with materials and other supplies and with services (Akinbode, 2002). In Nigeria, industrialisation as a development strategy has been pursued vigorously since independence through import-substitution, by focusing on the

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production of consumer goods. Recently, great emphasis has been put on intermediate and capital goods industries (Ayeni, 1981).

Ekpo (2003) explained the link between wastes generation and industrialization as a function of prosperous development of high technology and the higher the expected level of industrial establishments in an area the higher the

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