

THE CONSTRAINTS OF PESTICIDES MARKETING IN NIGERIA

BY

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JANUARY, 1997

CERTIFICATION

This project entitled "The Constraints of Pesticides Marketing in Nigeria," by Yakasai, Mukhtar Muhammad meets the regulations governing the award of the degree of Master of Business Administration (MBA) of Ahmadu Bello University, Zaria, Nigeria, and is approved for its contribution to knowledge and literary presentation.

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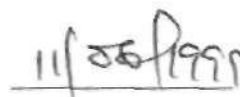
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DECLARATION

I hereby declare that this project entitled "The Constraints of Pesticides Marketing in Nigeria" is a product of my resesarch findings and has to the best of my knowledge never been previously presented for the award of a higher degree. All relevant works consulted have been duly acknowledged in the bibliography.



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DEDICATION

To the loving memories of my late
father, Mallam Muhammad Baba Yakasai,
mother, Hajiya Fatima Muhammad , and
daughter, Aisha Mukhtar Yakasai.

ACKNOWLEDGEMENT

I wish to express my gratitude to the Almighty Allah and praise His name for His blessings. It is His help that has seen me through the successful completion of the MBA programme, this very project and all my other endeavours in life. May His peace and blessings be upon our beloved Prophet Muhammad, his family and followers.

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Finally, I have to express my special regards to my wife, Hajiya Fatima M. Yakasai, and other members of the family who bore the strains which the course and project imposed on our lives.

To everyone, I say may Allah reward you abundantly.

Mukhtar Muhammad Yakasai

ABSTRACT

This project is an attempt to explore in detail the constraints of marketing agrochemicals or pesticides in Nigeria. Pesticides are the indispensable agricultural inputs for the control of those species or pests which include insects, weeds, diseases, fungi and other life forms which by their action become inimical to the interest of man. The agrochemicals sector plays a very crucial role by providing pesticides to the Nigerian farmer for the efficient and effective control of these pests so as to achieve the desired increased productivity on the farm which will translate into more food to feed the ever-increasing population of the country.

In this research effort has been made at reviewing the important role the agrochemicals sector plays in the overall agricultural growth and economic development of Nigeria. The sector which has a long history dating back to the 1940's presently has about 10 operating companies marketing over 60 different products with an annual turnover averaging about one billion Naira. These companies distribute these pesticides through various distribution channels to the ultimate consumer - the farmer.

In carrying out these activities the sector faces a myriad of constraints essentially caused by lack of a well-defined and committed government policy and legislation on its operation. Problems of various forms that are political, economic, social, technical, managerial and environmental in nature have hindered the sector from getting effectively and efficiently organised to deliver the desired level of consumer satisfaction.

Following the findings of the research, recommendations have been made on how to get the agrochemicals sector better organised to face the challenges of the future in contributing its quota towards making Nigeria self-sufficient in food production for internal consumption and export.

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CHAPTER ONE

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1.1 Introduction

In Nigeria today as in many other developing countries particularly in the African sub-continent, one does not have to look very deep to appreciate the despicable scenerio in the agricultural sector of the economy. Inspite of the fact that the sector is supposed to be the largest source of income and employment for the majority of the population, it also used to be the major foriegn exchange earner for the Nigerian economy. However, what you find now is the diminishing availability and high cost of farm inputs especially labour, increasing pressure on land from activities of man on the environment and of pests and diseases among others. These conditions and more are the uncomfortable pointer to the fact that a large percentage of Nigerians are hungry without food.

This apparent neglect of agricultural production by most Nigerian governments over the years could only be sustained by serious government policies and actions in the adoption of improved production techniques that would save time, labour, pests and diseases problems as well as increase yields to feed the over 100 million Nigerians. It is a known fact that economic growth and development is very much dependent on a real breakthrough in agriculture, which is expected to provide food, raw materials for industry and employment.

The use of agrochemicals or agricultural pesticides, fertilizers and improved agronomic practices are the major remedies towards achieving the agricultural development objeectives of any economy. Pesticides as a single factor ensures the elimination of the major production constraint of farm expansion with the use of minimal farm labour, pesticides serve to control major weed, insect and disease species that limit crop yields.

The need for effective marketing and distribution of these pesticides in could not be over-emphasised, as any sustainable growth in agricultural production would only be achieved through improved production and marketing techniques.

This has, however, not been possible in the agrochemicals subsector due to a multitude of factors and constraints which this research work is set to investigate by focusing a searchlight on the industry with the objective of making appropriate recommendations on how to remedy such constraints

1.2 Problem Definition

For the fact that agriculture and food are the bedrock of all societies, it becomes obvious then that to meet our growing demand for food to feed our ever increasing population, it is necessary to protect our crops more efficiently and economically from pests and diseases. This could only be achieved if the industry and products to be used for the protection are integrated into an overall plan to achieve the desired objective. This means that the marketing of such products must be right such that the products reach the desired target audience and provide the satisfaction required for improved food production to meet both domestic consumption and for exports.

However, when such an industry that provides this service is faced with constraints in performing its functions which are necessary in solving the food requirement crisis, the problem has then been made more complex.

The role expected to be played by this industry has been dwindling by the day. The industry had been the envy of outsiders as it was hitherto dominated by multinational companies of repute. However, in the past 6 to 8 years the number has dwindled by about 50 percent, sales volumes have been unstable and unpredictable while range of products have drastically scaled down.

1.3 Purpose Of The Study

The main objectives of the research include the following:

1. To ascertain the important role the agrochemicals sector plays in the overall agricultural policy and development of Nigeria.

2. To critically examine factors that led to the closure of some agrochemical companies in the country.
3. To review the potentials of agrochemicals and its marketing in Nigeria.
4. To find and develop strategies in harnessing future prospects and coping with future challenges.

1.4 Significance Of The Research

It is anticipated that this research would be of immense benefit to agricultural policy makers in government, agrochemical and agro-allied organisations, old and potential new entrants into the industry, marketers and other distributors of pesticides as well as the Nigerian farmer. This is because the research has attempted to providing indepth information on the importance of agrochemicals, its marketing and the future of the business in Nigeria.

This study would also be of benefit to professionals both within and outside the industry, within and outside the country as well as being a reference material in our constantly changing dynamic environment. It is also hoped to be a foundation of new researchable areas in the sector in the future.

1.5 Scope Of The Research

The study cannot possibly cover all aspects of pesticides marketing in Nigeria because apart from the official channels of importation, production and marketing of these products, other alternative avenues for these functions also exist. These included crossborder smuggling through neighbouring countries, foreign agricultural input aids and other similar channels.

Eventhough the study is looking at the totality of the industry, generalisations made may not necessarily be applicable in some instances with regards to some individual organisations and situations in the industry.

It should be recognised also that this kind of detailed research is relatively new in the sector, as such questionnaires and interviews with some key personnel in the industry would have to be conducted. This research could not escape from problems associated with data collection, especially as some information is guided secret of the organisations in which the respondents worked.

It should also be recognised that some of the data presented are not quite verifiable. This arises because there are no reliable figures on pesticide importation from the ports, the central bank, the federal office of statistics or the federal ministry of agriculture. Complicating the issue is the fact that non-pesticides are usually declared as pesticides to evade paying higher customs duty.

1.6 Hypothetical Assumptions

In the light of the research problem and the purpose of study, some hypothetical assumptions were made to guide the research towards proving or otherwise of the points raised. The assumptions are stated thus:

1. Changing and unreliable government policies in agriculture coupled with high tariffs, unstable exchange rate and currency devaluation negatively affected the growth of the agrochemicals sector in the past few years.
 2. High consumption of agrochemicals in an economy results in higher agricultural productivity, saving of time and labour, provision of more food and agricultural raw materials as well as low pests and diseases incidences.
 3. Whether the agrochemical companies in Nigeria will remain in business and expand their operations or not depends much on the support and encouragement they get from government.
-

1.7 Definition Of Important Terms

1. *Agrochemicals*: is used synonymously with the term *pesticides*. Refers to the group of chemicals of various range employed in agriculture to reduce the harmful effects of pests and diseases.
2. *Pests*: are those species which by their action become inimical to the interest of man. Those include insects, weeds, fungi, mites, nematodes, diseases, viruses, and others.
3. *Insecticides*: this is a group of chemicals used for insect pests control.
4. *Herbicides*: this is a group of chemicals used for weeds control.
5. *Fungicides*: this is a group of chemicals used for fungal disease control.
6. *Rodenticides*: this is a group of chemicals used for rats and other rodents control.

1.8 Research Methodology

The technique employed in collecting data for this research include the following:

1.8.1 Primary Sources

Questionnaires were administered to selected companies, pesticide distributors agricultural development projects and farmers. The questionnaires are structured and undisguised, that is the exact wordings of the questions are determined in advance and the purpose of the study is not disguised from the respondents. The questionnaires were distributed and collected by the researcher himself.

Some of the companies executives, marketing personnel, sales representatives, distributors, retailers and some farmers were interviewed with the help of the questionnaire.

Interviews were also conducted with key personnel of public sector organisations whose activities in one way or the other influence pesticides marketing in Nigeria. These

include Department of Pests Control of the Federal Ministry of Agriculture, Federal Environmental Protection Agency (FEPA) and some states Ministries of Agriculture.

1.8.2 Secondary Sources

Relevant existing data were collected from organisations that related to the study. Such data include imports, sales and usage statistics as well as relevant market information charts.

Published materials were also consulted which included relevant texts, journals, newsletters, research papers and brochures of marketing and others related to the research.

1.8.3 Sampling Procedure

Stratified sampling procedure was adopted for collecting data from distributors and farmers. This was to ensure that a reasonable number of the two groups were covered so as to obtain a sampled opinion that would be a fair representation of the opinion of generality of the given categories of respondents. 10 distributors from Kaduna and 15 from Kano were interviewed with the aid of the designed questionnaire whereas 10 other retailers who were randomly selected had unstructured interviews. 40 farmers from different locations were also interviewed.

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CHAPTER TWO

LITERATURE REVIEW

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2.1 An Overview Of Marketing

An observer of Nigeria's business environment would quickly be able to assess that it is becoming more difficult and intensive to operate as competition and economic downturn take their toll. The struggle has been by business organisations whether big or small to endeavour to keep their present customers and at the same time strive to get prospective ones with their offerings to the market. This becomes even more complex if one considers the operational environment that has been further compounded with social, political, cultural and socio-economic constraints.

Business organisations must, therefore, tailor their activities in such a way as to ensure that they attract more customers towards the product or service they offer to the market. This could be achieved successfully only when the marketer has been able to identify the desired needs and wants of the target markets and then adapt the organisation towards delivering to the desired satisfaction of these needs and wants more effectively and efficiently than its competitors. This function of attempting to satisfy the needs and wants of the consumer is what marketing is all about.

Many authors have defined marketing from different perspectives. Some based their understanding on their own position of responsibility, on the circumstance at hand, and still others on how they take part in the marketing activity. Some definitions are, however, viewed from a more broader perspective. Whereas some people view marketing only as a set of techniques employed by business organisations to elicit desired response from other organisations or individuals, others have argued for the broadening of the range of organisations in which it can apply.

William Stanton defined marketing as "a total system of business activities designed to plan, price, promote and distribute want-satisfying goods and services to present and

potential customers.”¹ Essentially, marketing involves finding out what the customer wants, then planning and developing a product or service that will satisfy that want, and then determine the best way to price, promote and distribute that product or service.

Phillip Kotler viewed marketing as that “human activity directed at satisfying needs and wants through exchange process.” It is simply the “human activity that takes place in relation to markets.” He went further to define marketing as “a social and managerial process by which individuals and groups obtain what they need and what through creating, offering and exchanging products of value with others.”²

Butch and Houston defined marketing as “the economic and social process by which society’s needs are serviced through exchange within the constraints of available and affordable resources.”³ That is marketing is an economic process in which its participants seek gains, often of monetary nature; it is a social process in which its participants occupy well defined roles that necessitate social interactions if the process is to work and finally the process is deficient by the availability and costs of resources.

Larry Rosenberg sees marketing “as a matching process, based on goals and capabilities, by which producers provide a marketing mix (product, service, advertising, distribution, pricing ,etc) that meets consumers needs within the limits of the society.”⁴ As a matching process any mismatch will therefore lead to failure. What this definition is saying is that a business organisation exists by selling its products and services. In carrying out this process it seeks to achieve profit and other objectives.

Belden Menkus defined marketing as “the process of planning and achieving change in the environment in which a product or service must be sold, rented or leased. That is marketing does not occur simply because sales people makes calls on prospects, adverts and commercials are designed to increase the number of impressions made upon prospects in some time period. Such things are important in themselves, but to focus on them confuses the means used with the ends sought. Marketing is a process, not an activity or a sum of various activities.”⁵

In the same book, Ed Flanagan indicated that “corporations want marketers who know about product life cycles and how to develop product strategies. That is those executives who understand the basic marketing means of moving goods and services from the producer to the consumer. Executives that know which industries are growing and which are failing, how do consumer lifestyles and work habits affect product choices. And above all executives who are wise enough to understand these changes and see new opportunities for their companies and thus get the job done.”⁶

Flanagan further asserts that “excellence in marketing will be the competitive edge in the 90’s and beyond. It will separate the winners from the losers. It is the era of the flexible and astute marketer.”⁷ He then lists the key challenges that will affect marketing now and in the future. These challenges are:

1. Economic challenges:

- i) Inflation
- ii) Materials shortage

2. Social Challenges:

- i) Consumerism
- ii) Consumer protection

3. Competitive challenges:

- i) Benefits of competition
- ii) Dangers of competition

4. Legal/Ethical challenges

- i) Laws and regulations
- ii) Court decisions
- iii) Trade practices

5. International challenges:

- i) Trade barriers
- ii) Cartels

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iii) Events

6. Environmental challenges:

- i) Supply of raw materials
- ii) Air and water quality.

According to Flaganan, therefore, "It is a must that marketers sharpen their skills and take advantage of these challenges. They must use their new technologies as marketing tools in meeting these challenges."⁸

Kotler and Armstrong gave a summarised definition which encompasses most of the earlier definitions. They defined marketing as "a human activity directed at satisfying needs and wants through exchange process."⁹ Needs in this definition is a state of deprivation and it is the most basic concept underlying marketing. Wants, on the other hand, are the forms that human needs take and they are the second most important function underlying marketing.

What becomes very clear from the foregoing is that marketing activities are directed towards satisfying human needs and wants. This involves the employment of skills that enable a business organisation to determine its response to the needs and wants of the market. It involves determining how resources, including human, are to be employed in terms of machinery, labour, design, materials; what is to be made; in what quantities, qualities, sizes; what price range and where, when and how they are to be presented to the market.

Marketing from a managerial point of view cuts across the whole organisation. It is seen "as a total system of interacting business activities designed to plan, price, promote, distribute want satisfying products and services to present and potential customers in a way as to enhance the profit of the firm." Marketing is directly responsible for such activities as selling, advertising, distribution and promotion; and indirectly responsible for production and accounting. Hence marketing ascertains, creates and satisfies consumer needs and wants.

2.2 The Marketing Mix

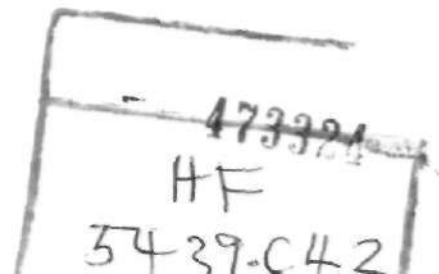
Marketing mix is the term used to describe the combination of the four inputs which constitute the core of a company's marketing system. It comprises of the product (service), the structure, the place (distribution system) and the promotional activities. These are called the 4 P's of marketing and are interrelated. These inputs are among other tools employed by management in taking vital and fundamental decisions as regards the operations of the enterprise. Philip Kotler defines the marketing mix as "...the set of marketing tools that the firm uses to pursue its marketing objectives in the target markets."¹⁰

Product: is the offer that the marketer makes to the buyer which is of central importance in the marketing effort. Nwokoye defines product as "a bundle of physical and psychological satisfaction that a buyer receives from a purchase. It includes not only tangible objects, but also such supportive elements and others that buyers value."¹¹

The product or service element includes planning and developing the right product and /or service to be marketed by the company. Guidelines are needed for changing existing products or adding new ones. Decisions are also taken as regards branding, packaging and other related product features.

Price: consumers' acceptance of a price is of crucial importance in the success of any product. Nwokoye defines price as "the amount of money needed to acquire a given quantity of goods or service."¹² Price is the one component of the marketing mix that generates revenue, all the other three components generate costs.

In pricing, management must determine the right base price of its products so that consumers will accept it as being a fair representative of value of product they purchase. Other decisions to be made include establishing policies for dealing with discounts,



middlemen margins, allowances, freight payments and geographical considerations and other price related situations.

Promotion: is simply stimulating consumers demand for a product. It is basically an exercise in information, persuasion and influence, and includes personal selling, sales promotion, advertising, publicity and other selling tools. Through the use of promotion, a company hopes to increase a product's sales volume at any given price. It also hopes that the demand elasticity of the product will be affected by being elastic when the price goes down and inelastic if it increases.

Decisions are taken relating to advertising, personal selling, sales promotion and publicity.

Place: referred as distribution and involves the movement of goods from the producer to the ultimate consumer. This movement may be direct to the consumer or through various types of intermediaries or middlemen depending on the factors being considered.

Management responsibility is to select and manage the trade channels through which the product will reach the right market at the right time, and to develop a distribution system for physical handling, storing and transporting the products through these channels.

2.3 Market and Market Segmentation

To understand the problems in marketing of agrochemicals in Nigeria, it is very pertinent to discuss the type of market the products belonged to, as any sound marketing programme starts with the identification and analysis of the market for the product or service.

What comes to most people's mind when they hear the term 'market' is that of "a place where sellers display and sell their goods." Others regard it as a region or outlet for successful trading of merchandise or as a place where stocks or goods are sold. Market is also viewed by some other people as the body of persons concerned with buying and selling

a particular class of goods. For example, we have yam market, beef market, cloth market, petroleum products market, automobile market, furniture market and so forth.

These definitions though have actually described what a market should be are inadequate as they do not explicitly describe the essential elements expected of a market. Stanton puts it more clearly when he defines market “as a people with needs to satisfy, the money to spend and the willingness to spend it.”¹³ The concept of a market also implies a demand for a product or service. Quite often the term ‘market’ and ‘demand’ are used interchangeably, and may also be used jointly as ‘market demand.’ In the market demand for any given product or service, there are three factors to consider: people with needs, their purchasing power, and their buying behaviour. Needs imply lack of anything that is required, desired or that is useful.

To be apt, market is thus the set of all actual and potential buyers of a product. In which case, it should not be perceived as only a physical location or market place.

2.3.1 Types of Markets

Generally, markets could be grouped under five different categories. These categories are identified on the basis of the buyers role and motives rather than the products characteristics. The basic question that is answered in the categorisation is : What does the buyer intend to do with the goods he buys? We will only briefly define these markets here while greater details come later when we discuss market segmentation.

The five types of markets are:

1. *The Consumer Market*: is a market that consists of individuals and households who buy or acquire goods and services for personal consumption. This comprises the entire population.
2. *The Industrial Market*: also referred to as the producer or business market. It is made up of individuals and organisations who acquire goods and services that are used for

production of other products or services that are sold, rented or supplied to others. It comprises of service organisations, institutions and middlemen.

3. *The Reseller Market*: is a market that consists essentially of individuals and organisations who buy or acquire title with the purpose of reselling the product or service to others. It comprises essentially of middlemen of various classes like wholesalers and retailers.
4. *The Government Market*: is a market where securities are transacted through the issuance of treasury bills and government bonds by the central bank or other regulatory authorities. They are usually redeemed after a fixed period at a certain rate of interest.
5. *The International Market*: is a market that is concerned with transactions of goods or services across national boundaries either directly or indirectly with the purpose of making profits for the participants.

2.4 Market Segmentation

The lack of homogeneity in products offered to the market arises from the fact that from the total market for the same product or group of products, there exists submarkets which significantly differ from one another. This could also be traced to the fact that people have different buying habits and motives and also that one product could be employed for use in many different ways. As a result of this business organisations follow the strategy of market segmentation which allows for a more precise definition of a market in terms of what consumer needs are. Emphasis is laid on what the consumers buy and why they are buying.

Market segmentation “is the process of taking the total, heterogeneous market for a product and dividing it into several submarkets or segments, each of which tends to be homogenous in all significant aspects.” Market segmentation has the following advantages:

1. It leads to a more precise definition of a market in terms of what the consumers needs are. That is it helps define what consumers buy and why they are buying.

2. It allows management to direct its marketing programmes more appropriately to satisfy the needs of the consumer.
3. It makes management to develop the capabilities that are necessary to meet changing market demands.
4. Assessment of competitive strength becomes easier as management can identify those segments with the greatest competition and save company resources by not going into such a market or competition.
5. It allows for a more efficient allocation of marketing resources. Resources such as product, promotional appeals and advertisement could be more easily coordinated and how to allocate better budget among the various media could be determined. This could lead to sharper brand image and consumer loyalty.
6. There is more precise setting of market objectives as targets in terms of production and sales are defined operationally which would lead to better evaluation of performance later.

2.4.1 Conditions for Effective Segmentation

1. The characteristics used for categorizing customers must be measurable and data must be accessible.
2. The market segment must be accessible through existing channels of distribution, advertising media, sales force and others, all with minimal cost and waste.

Each market segment should be large enough as to be profitable. In industrial markets for example each single customer could be treated as separate segment.

2.4.2 Ways of Segmenting a Market

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We have earlier on discussed different types of markets which in effect covers all categories required in segmenting a market. However, there are various ways by which an organisation can segment its market depending on the type of products or services it offers.

For the purpose of our discussion we would attempt to segment our market into two broad markets as our research topic is related to one of these broad categories. The criterion used for this segmentation is the buying motive. The segments are:

1. Ultimate consumers or the consumer market.
2. Industrial users or the industrial market.

2.5 The Consumer Market

As defined earlier, it consists of the ultimate consumers who buy or acquire goods or services for their own personal or household use. They are satisfying strictly non-business wants. For example, purchase of food and clothing by the family head and members who eat the food and wear the clothing are all ultimate consumers.

2.5.1 Characteristics of Consumer Markets

1. There are large numbers of purchasers each buying for personal or household consumption.
2. There is a high rate of mobility among consumer buyers as they move from one part of the country to another.
3. Purchasing is on small scale basis as consumers buy mostly for current needs.
4. There is high frequency of purchase since buying is on small scale basis.
5. Product performance is not a function of purchase as the consumer is not trained in the art of buying and could therefore be influenced by adverts and sales talks.

2.6 The Industrial Market

According to Stanton, the industrial users “are business, industrial or institutional organisations who buy products or services to use in their own businesses or for production of other products or services that are sold, rented or supplied to others.”¹⁴ Agrochemical pesticides are a good example as these products are bought by the manufacturing and marketing companies for either further production or for subsequent sales to other wholesalers or end user farmers.

Kotler and Armstrong defined industrial market as that which “consists of all the individuals and organisations that acquire goods and services that are sold, rented or supplied to others. The major types of industries that make up the industrial market are agriculture, transportation, communications, mining, manufacturing, construction, banking, etc.”¹⁵

It is worth noting here that the segmentation of all markets into two groups, that is consumer and industrial markets, is very significant from a marketing point of view as these markets buy differently. Moreso, a seller's marketing mix elements of product, price, distribution and promotion will differ depending on the type of market.

2.6.1 Scope and Importance of Industrial Market

The industrial market is a very large market when one considers its total sales volumes and the number of firms involved in it. We will consider this as it relates to the agrochemicals industry in the next section of this study. The market consists of all manufactured products and a very high percentage of farm products that are sold for further processing. Below is the industry's classifications as outlined by Stanton¹⁶ for industries that make up the industrial market:

1. Agriculture, Forestry and Fishing
2. Mining and Quarrying
3. Contract Construction
4. Manufacturing

5. Transportation, Communications and other public utilities
6. Wholesale trade
7. Retail trade
8. Finance, Insurance and Real Estate
9. Services
10. Government - Federal, State and Local.

It can be noted that every retail store or wholesaling organisation is an industrial user. All wholesalers and retailers of pesticides either in form of companies such as Chemical & Allied Products PLC, Swiss Nigeria Chemical Company Limited, or retail shops in the Sabon Gari markets are all industrial users.

2.6.2 Characteristics of Industrial Markets

1. Organisations and individuals do not buy for personal consumption but for the purpose of further production.
2. There are only few organisations involved in the market as compared to the consumer market.
3. Purchases in the market are usually in bulk which allows for cost saving and pursuance of the concept of 'economy of scale.'
4. Buying is on a performance basis with the purchaser ensuring that he buys the best quality at the best price.
5. There is a diffusion of buying responsibility with a group of people responsible for buying decision.

6. The market is dependent upon the general economic prosperity of the nation. In periods of boom there is high demand for consumer goods. And since the demand for industrial goods is ultimately derived from the demand for consumer goods, then there will be more demand for industrial goods. With a bad economy, the converse will be the case.
7. Purchasing power of the industrial user is higher than that of the ultimate user.
8. Most of the industrial buying is normally done directly especially when orders are large and when there is need for technical assistance.
9. Demand for industrial products is usually inelastic, that is it is not much affected by price changes. In other words, a change in price of industrial products may not change the demand for the products. The demand for industrial goods and services tends to be more stable than the demand for consumer goods and services.

2.6.3 Types of Industrial Products

Stanton¹⁷ has categorised industrial products into five, viz :

1. *Raw and processed materials:* are industrial goods which partly or wholly become a part of a physical product which undergoes not more than that required for convenience, protection, economy in handling storage or transportation. These include such goods as mineral deposits, agricultural products and so forth.
2. *Component parts and sub-assemblies:* are those that become part of the finished products which undergo some processing beyond that required for handling. These products perform a specific function and do not require further modification before being installed as part of the final product. These include yarn for woven cloth and flour to be converted to bread.
3. *Installations:* are manufactured industrial goods that are long-lived, expensive and constitute the major equipment of the industrial user. These installations set the scale of operation in a firm but are not part of the final or finished product. Examples are buildings, generators and other major equipment.

4. *Accessory equipment*: are tools that aid production operations but do not have significant influence on the scale of operation in the firm and do not become part of the actual finished product. These include things like forklift trucks, cash register in retail stores and other office equipment.
5. *Operating supplies*: are convenience goods of the industrial user. They are short-lived, low-priced items usually purchased with minimum efforts. They aid operations but never enter into final production. They include stationery, lubricating oils, cleaning solvents and others.

2.6.4 Buying Stages in Industrial Market

The purchase of industrial products involve certain activities which may in some instances span over a considerable period. There are a variety of stages that have to be followed to effect purchase of the goods, though the procedure will differ with different companies. Some of the stages as outlined by Robinson, Faris and Wind¹⁸ are as follows:

1. Anticipation of a problem and a general solution.
2. Determination and description of characteristics and quantity of the needed items.
3. Search for an acquisition and analysis of proposal.
4. Evaluation of proposal and selection for an order routine.
5. Performance feedback and evaluation.

2.6.5. Industrial Buying Process

Three typical buying situations called 'buyclasses' were identified:

1. *New-Tasks*: is the most difficult and complex and usually involves buying a product or service for the first time. A lot of information is necessary and evaluation of alternatives is difficult. Example is building a new office or purchase of weaponry.
2. *Straight-Rebuys*: is basically a routine order or purchases with minimal information needs and no real consideration for alternatives. Buying decisions are made in the purchasing department. Such include office supplies, bulk chemical purchases and so on. When stocks are exhausted, they are repurchased locally.
3. *Modified-Rebuys*: describes a situation where the buyers want to modify product specifications, prices or other terms of the supply. It involves more number of decision participants.

2.7 Review of the Agrochemicals Market

There are more than 5 billion people living in the world today and within a few decades this figure will have doubled. This necessarily calls for the provision of high quality food for everyone. Technological advances permit agriculture to satisfy the need for food despite predictions of population growth outstripping food production. This means each hectare must feed more and more people. This applies in particular to the countries in the developing world like Nigeria where the population is increasing at a disproportionate rate while extensive farming is still being practised resulting in reserve yield capacity.

These areas can be made more productive through the employment of modern cultural methods and the responsible use of fertilizers and crop protection products. Over the years the use of agrochemicals in agriculture has been on the increase world over. It was estimated that the world agrochemicals market has been increasing at an average rate of 4 to 8 percent in the past two decades. The value of sales was estimated at 10 billion United States dollars (\$) in 1979 and grew to over \$25b by 1993, an increase of almost 150 per cent within 14 years.

The Nigerian market showed a similar trend, though the Naira depreciation affected actual commensurate growth.

Table 1 : Value of the Agrochemicals market, 1979 - 1993

YEAR	WORLD MARKET \$ billion	NIGERIAN MARKET	
		N million	\$ m equivalent
1979	10.00	n.a	-
1982	13.36	n.a	-
1989	20.00	153.00	12.75
1991	21.70	160.00	10.66
1993	25.20	1066.00	17.92

(Source: *Farm Chemicals International*, September 1994, Ikemefuna, 1993 ; Field Research, 1995)

The Nigerian market in dollar terms actually depreciated between 1989 and 1991, but increased again from 1991 to 1993. There was the collapse of the Naira in 1993, in which year exchange rate became very unstable hiking from an average of about N44 to N75 to a dollar.

The world pesticides market is controlled by 10 Agrochemical companies who contributed almost 71 per cent of the total market. In 1993, these companies' sales turnover and share in the market were as follows:

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Table 2 :Market Shares of Agrochemical Companies World Over

S.No	COMPANY	SALES IN 1993 \$b	% MARKET SHARE	%MARKET IN NIGERIA
1.	Ciba Geigy (SNCCL)	2.79	11.10	14
2.	Zeneca (CAPL)	2.20	8.70	19
3.	Agr Evo (Hoechst + Schering)	2.05	8.10	7
4.	Du Pont	2.00	7.90	-
5.	Monsanto	1.82	7.20	-
6.	Bayer	1.79	7.10	5
7.	Rhone Poulenc	1.75	6.90	8
8.	Dow Elanco	1.60	6.30	-
9.	American Cyanamid	1.10	4.30	-
10.	BASF	0.90	3.60	7
11.	Others	7.20	28.80	39
	TOTAL	25.20	100	100

(Sources: *Farm Chemicals International*, Summer 1994; *The Nigerian Farmer*, 1990)

As could be seen from table 2.1 some of the multinational companies are represented in Nigeria either directly or through some agency or distribution agreements.

Prior to the current economic predicament which made many multinational firms to de-invest from Nigeria, there were eight of the companies in Nigeria. However, presently CIBA is represented by Swiss Nigeria Chemical Company Limited, ZENECA formerly ICI by CAPL, and Rhone Poulenc through May and Baker, and operating skeletal is BASF. There are other companies that have sprung up in the past three years who represent some others mostly through 'direct indent' purchases. Some companies in the category are GONGONI which represents Agr Evo, whereas companies like CANDEL and SARO Agrochemicals buy direct indent from other companies not necessarily represented in Nigeria.

2.7.1 Agrochemicals Consumption Pattern

It would be very interesting to look at the world pesticide market in relation to production and consumption. Table 3 below relates some of these statistics.

Table 3: Pesticides Regional Demand & Consumption

Countries/Regions	Demand & Consumption (%)
USA/Canada	29
Western Europe	28
Asia/Australia	25
Latin America/Caribbean	10
Eastern Europe	5
Africa	3
Total	100

(Source: *The Nigerian Farmer*, 1990)

If we relate tables 2 and 3, we could deduce that countries where pesticides are produced consume more pesticides. For example, Europe and North America accounted for about 70 per cent of the production and 62 per cent of the consumption. Asia and Latin America produced a little over 10 per cent but consumed about 15 per cent. However, Africa which produced no pesticides though there was some blending and repacking only consumed a dismal 3 per cent.

One could easily observe that when a comparison is made of the statistics of the world consumption pattern and the value of the world pesticides market earlier on discussed that the total demand and consumption of pesticides in Nigeria is quite negligible. It was estimated that the Nigeria market accounted for over 25 per cent of Africa's consumption. Hence one of the reasons that led to the abandonment of the Nigerian market by some of the multinational companies may not be linked to the size of the market.

2.8 The Nigerian Pesticides Market

Generally speaking, the world and the Nigerian markets for agrochemicals could be subdivided into four based on the generalisation of the type of the pest being controlled. Table 4 indicates the percentage share of the market in each of the sectors classified as follows:

Table 4: Agrochemicals Market Share by Sub-Markets

Agrochemical Type	World Market Share	Nigerian Market Share
Herbicides	46	37
Insecticides	27	33
Fungicides	20	22
Seed Treatment/Growth Regulators	7	8

(Source: *The Nigerian Farmer*, 1990)

The main crops cultivated in which this division are based on are small grain cereals, corn, sorghum, vegetables, fruits and grapes in the world market, whereas they include cocoa, maize, rice, plantation crops and stored produce in the Nigerian market.

The distribution of the main crops with their market subsectors in Nigeria is illustrated by the table below:

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Table 5: Pesticides Distribution by Crop Subsector

Crop	Share of Total Market	Distribution per Sub Market		
		Fungicides	Herbicides	Insecticides
Cocoa	21	60	5	35
Maize	15	10	70	20
Cotton	10	10	20	70
Rice	9	10	70	20
Plantation Crops	9	-	Mostly	-
Cowpeas	6	5	20	75
Storage	11	-	-	Mostly
Others	19	-	-	Mostly

(Source: *The Nigerian Farmer*, 1990)

2.8.1 The Fungicides Sub Market

This is essentially a cocoa dependent market which accounts for over 85 per cent of all fungicides used. The balance is used on other crops like fruits, vegetables, tobacco, cotton, cowpeas, rice and other arable crops. Most of the fungicide products are copper based and include products such as cuprous oxide (perenox and caocobre sandoz), copper sulphate, copper oxychloride (cupravit), cupric hydroxide and other mixtures. Other fungicides in use include benomyl (benlate), maneb, zineb, mancozeb and bronopol (bronocot).

The fungicide market has been growing in the past few years with farmers recognising the fact that they reap better yields with the spray of fungicides against fungal diseases.

With increase in prices of cocoa, rice, cowpeas and other crops the growth of this market is expected to rise above the current 5 per cent in the next few years.

2.8.2 The Herbicides Sub Market

This market is dominated by selective herbicides for rice and maize and grass dessicants. The market share of these products are in the region of 40 per cent for rice herbicides, 32 per cent for dessicants, while other herbicides account for the remaining 8 per cent. The rice herbicides are the mostly propanil based products while atrazine based products dominated the maize range. Paraquat and glyphosate are the major dessicants.

There has been rapid growth of the herbicides market in this country principally resulting from high cost of hired labour and difficulty in weeding operations using other methods particularly in rice fields. The shift in policy by the Federal government towards backward integration which led to corporate organisations opening up farmlands and the advent of the agricultural development projects in the 1980's also led to the employment of improved agricultural techniques and increase in the use of herbicides and other pesticides in food production.

However, since the beginning of the 1990's, with the low emphasis placed on agriculture, these firms have been closing and winding up their operations which further brings a decline in herbicides consumption. The rate of growth in the herbicides market had been in the region of 15-20 per cent per annum in the late 1980's but has now declined to below 10 per cent.

2.8.3 The Insecticides Sub Market

Just as the fungicides market, the insecticides market was in the past targetted towards cocoa. In fact insecticides were of more significant then for the control of cocoa capsid bugs than for any other use. Until the recent introduction of pyrethroids into the market, the major products in use then were organochlorines, dominated mostly by lindane insecticides such as Gammalin 20; then organophosphates and carbamates. Cocoa

insecticides account for about 70 percent of the total insecticides market in the 1970's but has gradually declined to between 55-60 per cent in the eighties and by the early 1990's to below 50 per cent. The decline in the consumption share of cocoa insecticides could be attributed to the increase in the hectarages of cotton and cowpeas as well as the importance attached to grain storage by both the government and farmers.

The grains storage sector has almost 10 per cent of the total pesticides market share and has been growing rapidly over the years. It is dominated by fumigant insecticides, such as Aluminium phosphide (phostoxin) and others which account for over 60 per cent of the market. Organophosphate insecticides such as pirimiphos-methyl; cabamates such as carbaryl and pyrethroids account for the balance. The insecticides market has been steadily growing with more farmers reviving old cocoa plantations and increase in adoption of new innovations to reduce pests and diseases incidences in cotton, cowpeas, fruits and other crops. The estimated growth rate of this subsector is about 5 per cent.

2.9 Role of Pesticides in Agricultural Development

Agriculture has been characterised as the 'mainstay' of the Nigerian economy and has been expected to perform these roles:

- a) provide adequate raw materials for an increasing population;
- b) supply adequate raw materials to a growing industrial sector;
- c) constitute a major source of employment;
- d) constitute a major source of foreign exchange earnings; and
- e) provide a market for the products of the industrial sector.

These could serve as the criteria by which the agricultural sector could be evaluated and how the extent of their success determines the level of agricultural development of the economy.

Nigeria is a developing country with a lot of material and human resources with about 100 million people. However, agricultural development was constrained in the past by a variety of resource scarcities as well as the absence or inadequacy of institutional capabilities necessary to manage existing resources. To achieve agricultural development there is the need to achieve increase in agricultural production which is hinged on the use of improved agricultural inputs. The supply of large quantities of these improved inputs is therefore necessary to achieve high productivity in the agricultural development of any nation. It is the use of these inputs and their subsequent adoption by farmers that will transform agriculture from its traditional to modern form. These inputs include fertilizers, agrochemicals, improved high yielding seed varieties, tractors and irrigation equipment.

These new improved inputs are products of research and, therefore, embody technological change. The improved inputs increase production and efficiency through their direct effect on crop and livestock yields. It is interesting to note that today more than 50 per cent of Nigeria's productive population is engaged in agricultural production feeding over 100 million Nigerians, with rudimentary technology and low rate of adoption of new technologies. However, if we compare with the United States of America, we will find out that less than 8 per cent or 20 million of their entire population is engaged in agriculture feeding 240 million Americans and several million others worldwide.

Similarly, if we take a per hectare analysis, due to technology constraints, the Nigerian farmer cultivates an average of 2 hectares (ha) and obtain an average of 0.9 tons/ha. The American farmer cultivates an average of 235 ha to produce 8-9 tons/ha. Likewise, of all production operations from planting to harvesting including pests control, the average Nigerian farmer spends over 50 per cent of his time weeding alone, whereas his counterpart in the USA spends only 5 per cent on weeding because he relies on the use of agrochemicals as herbicides as labour savings technology.

For the success of any agricultural development programme, therefore, the agricultural input policies should be consistent with the overall objective of the agricultural policy. The ultimate goal of Nigeria's agricultural policy is the attainment of self-sustaining growth in all

the sub-sectors of agriculture as well as the realisation of the structural transformation necessary for the overall socio-economic development of the rural areas. The policy as regards supply of agrochemicals states that:

government strategy on agrochemicals supply will be to encourage the establishment of plants to manufacture agrochemicals in Nigeria, to encourage the use of local raw materials for the manufacture of agrochemicals and to ensure the timely supply in adequate quantities of those agrochemicals that are not locally manufactured by providing necessary assistance for their importation.¹⁹

The government policy on the support of this sector is further outlined in one of its pests control objectives which is

*to control and or eradicate and maintain good surveillance of the major economic pests whose outbreaks are responsible for large scale damages or loss to agricultural production. It is pertinent to note that in Nigeria, 8 per cent of field crop and 20 per cent of stored crops are annually lost due to pests, the reason behind government policy in the 3rd and 4th National Development Plans where large hectares of land were earmarked for pesticides treatment.*²⁰

The need to control pests through the use of pesticides is a necessity as it eliminates the need for farm expansion and less use of farm labour to cultivate the same area of land to feed our growing population. In Africa, for example, with a population growth of 2.9 per cent per annum suffers a food deficit of about 30 per cent which must necessarily be imported. Also 56 per cent of all arable land in the world is located in developing countries but these countries use only 25 per cent of plant protection chemicals. This could explain the food predicament of this part of the world. It has been shown that the supplies of food grains in the USA would fall by between 40-70 per cent without the use of agrochemicals and fertilizers. This would lead to an increase in the cost of food of up to 45 per cent. If similar situation were to take place in Nigeria, the spiralling inflation it would generate is what everyone could predict.

In spite of alternative ideas, projects and programmes, today's food requirements can only be met if crops are protected efficiently and applications are economically feasible. Agrochemicals will continue to play a dominant and important role in increasing Nigeria's crop production requirement.

¹ William J. Stanton, ed., *Fundamentals of Marketing*, New York: McGraw-Hill, Inc., 1978, p. 5.

- ² Philip Kotler, *Marketing Management: Analysis, Planning, Implementation and Control*, London: Prentice-Hall, 1994, pp. 12-13
- ³ P.S. Butch & M.J. Houston, *Marketing: A Strategic Foundation*, Homewood, Illinois: Richard Irwin, 1985, p. 18.
- ⁴ Quoted in A.B. Akpan, Handout Notes on Marketing Principles for MBA Programme 1991.
- ⁵ Belden Menkus, in E. Bobrow & M. Bobrow (eds), *Marketing Practices, Vol I*, Homewood, Illinois: Richard Irwin, 1985,
- ⁶ Ed Flanagan, in Bobrow & Bobrow, op. cit.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Philip Kotler & Armstrong, *Principles of Marketing*, London: Prentice-Hall, Inc., 1980.
- ¹⁰ Kotler, op. cit., p. 98.
- ¹¹ N.G. Nwokoye, *Modern Marketing for Nigeria*, London: Macmillan Press, 1981, p. 2.
- ¹² Ibid.
- ¹³ Stanton, op. cit., p. 72.
- ¹⁴ Ibid., p. 145.
- ¹⁵ Quoted in Kotler & Armstrong, loc. cit.
- ¹⁶ Stanton, op. cit., p. 146.
- ¹⁷ Ibid., pp. 147-50.
- ¹⁸ P.J. Robinson, C.W. Faris & Y. Wind, *Industrial Buying and Creative Marketing*, Boston: Allyn & Bacon, 1967.
- ¹⁹ Federal Ministry of Agriculture, *Agricultural Policy for Nigeria* (Reproduced for mass distribution by Directorate for Mass Mobilisation (MAMSER), Abuja, 1993), p. 21.
- ²⁰ Ibid.

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CHAPTER THREE

AGROCHEMICALS COMPANIES AND AGROCHEMICAL MARKETING IN NIGERIA

This chapter discusses the major agrochemical companies operating in Nigeria as at 1994 giving a short history of each company and how it ranked within the industry. It also gives a fair detail on the different products marketed by these companies and how these products are distributed through the distribution channel to other users. The chapter also reveals the result obtained in the course of the research as regards consumption of pesticides in Nigeria particularly in the years 1993 and 1994 where more accurate data were provided by the companies.

3.1 Major Agrochemical Companies

As discussed earlier in Chapter Two, there were eight multinational agrochemical companies operating in Nigeria before 1988 whose number decreased to only four by 1993. Between 1990 and 1995, however, four other companies were either direct representatives of manufacturers, agents or had some distributorship arrangements. At least one organisation had maintained this type of relationship prior to 1990, though it was part of another conglomerate multinational company.

The agrochemical companies operating in Nigeria as of 1994 included the following:

1. Swiss Nigeria Chemical Company Limited

Swiss Nigeria Chemical Company Limited (SNCCL) is the full representative of CIBA, formerly CIBA-GEIGY of Switzerland. It controlled the second largest market share as at 1993, and assumed the leadership of the industry as of 1994. SNCCL is the undisputed leader with product range in every group. They do not have any manufacturing plant in Nigeria but have ranges that cover both crop and livestock industry. They now control over 95 per cent of the seed dressing market with their *Apron Plus*. Their marketing success

could be attributed to years of market development and absolute control of importation of their range of products into the country.

2. *Chemical and Allied Products Plc*

Chemical and Allied Products Plc (CAPL) is the oldest of all agrochemical companies operating in Nigeria with business dating back to over three decades. It was the market leader in terms of volume sales before 1994, but the leadership has been taken over by CIBA. Whereas SNCCCL has its strength in herbicides and seed dressing products, CAPL had been an associate company of the reknown multinational company, Imperial Chemical Industries (ICI) Plc, now ZENECA Plc of United Kingdom, but is now a fully Nigerian owned company. CAPL has an agrochemicals manufacturing plant in Ibadan where it formulates some of its insecticide products, notably *Gammalin 20* and *Actellic Dust*. Other products are imported from ZENECA and other manufacturers in Europe.

3. *Rhone-Poulenc Rorer*

Another multinational company of repute operating in Nigeria through May and Baker. It is the third in terms of market share. The major strength of the company lies in rice herbicides, in fact, it is the only company that sells rice pre-emergence herbicide - *Ronstar EC*, and is the market leader in that sector. The company was among the companies that pulled out of the Nigerian agrochemicals market in 1990 but re-entered again in 1993. It was then operating as Rhone Total under a marketing agreement with Total Nigeria Limited.

4. *Dizengoff West Africa Limited*

The agricultural division of Dizengoff called Dizagro represents the group in agrochemicals marketing. They began business in early 1980's and have been importing mostly from Israel and selling generic products that were not branded. They also market small farm implements and irrigation facilities. The company started importing and selling branded products in 1992, that was when it started selling *Gramoxone*, a popular dessicant

product manufactured by ZENECA and distributed only by its erstwhile representative, CAPL.

5. *The CANDEL Company*

An indigenous company that was established in 1993 by some enterprising Nigerians who had been staff of one of the multinational companies that disengaged from Nigeria. They market generic products which the company started branding in 1994, sourced mostly from South Africa and Asia. The company is cultivating a niche in the plantation herbicides market through sale of dessicants.

6. *Saro Pharma*

This is another indigenous company that has been involved in the marketing of copper sulphate, fungicide used in control of cocoa black pod disease for about six years now. The company has recently diversified into importing other branded products from companies that pulled out of the country. They are representing Mackenchnie in Nigeria, and now also marketing products of Hoechst and ZENECA.

7. *C. Zard & Company Limited*

A new organisation, when it comes to agrochemicals marketing, that has taken over some agency agreements with ZENECA for marketing of some of its ranges in the Nigerian market. It began agrochemicals marketing only in 1995. The company is trying to get its footing in the market now and is pursuing direct indent business from agricultural development projects, large commercial farms and other agencies interested in direct offshore purchases of ZENECA products.

8. *GONGONI*

An indigenous company established in 1990, essentially involved in marketing of public health products for use in the house and storage pests control. It has a formulating plant where it mixes powdered formulations and bottles.

9. *Gaskiya Chemicals Limited*

A joint ventured company between Nigerians, the Nigerian Agricultural and Cooperative Bank, and an Indian manufacturing company, Rallis of India Limited. It was established in 1988 with the aim of formulating most of Nigeria's agrochemicals requirement for the major crops. The impact of the company has not been felt yet as production of some products which started in 1992 has now been halted.

10. *SCOAGRI*

This company is a division of SCOA that is involved in the importation and distribution of agricultural machinery and equipment. It had a distributorship with SNCCL on selling the later's products until 1991 when the agreement was dissolved. Presently, it buys generic products from manufacturers in South Africa and distributes locally.

Most of these companies have in their employment professionals in agriculture. The estimated staff strength was 47 field staff who were primarily involved in the development, marketing and sales of over 60 ranges of herbicides, insecticides, fungicides, storage and seed dressing products through a distribution network spread all over the country. Appendix I indicates the different types of products marketed by the companies in 1994. It is worth noting, however, that these companies had 133 different brands of major classes of pesticides, organochlorines, organophosphates, carbonates and synthetic pyrethroids in the 1980's and early 1990's. These have, however, been decreasing by the day with stricter government control over use and marketing of extremely toxic and hazardous chemical substances.

3.2 Distribution of Agrochemicals

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It is an established fact that marketing activities are centred around the marketing mix because it is that which highlights the controllable variables which marketers use to influence customers' response which include marketing research, product development, pricing, packaging, distribution, advertising and sales promotion. It is in this context we studied the channels of distribution of agrochemical products.

Distribution has been described as the channel structure used to transfer products and services from an organisation to its markets. According to Nwokoye distribution channel is “the combination of institutions through which a seller markets his products to the ultimate buyer. By institutions we mean, middlemen like distributors, retailers and agents.”¹

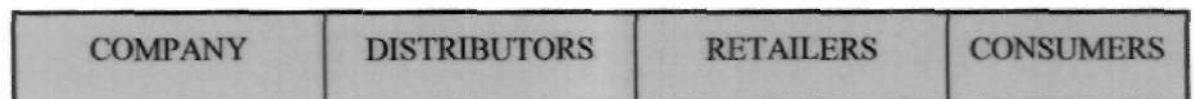
A marketer has three major decision areas to focus when handling products distribution. These areas include the choice and length of channel, the intensity of the distribution and the physical distribution.

On the choice and length of channel, decisions have to be taken as regards the nature of the channel to be used in moving the product and the number of intermediaries. This decision is usually influenced by the nature of the product, the size and nature of the customers’ demand, the price of unit sale and the extent of the product line.

The intensity of the distribution to be adopted is dependent on the organisation’s trade policy. For example, a marketer may decide on selective distribution which is a policy of selecting a limited number of wholesalers or retailers and work closely with them to further the sale of his merchandise.

Physical distribution involves the marketer to map out strategies relating to transportation, storage, warehousing, inventory and other logistical decisions involved in moving products from the point of production to the ultimate consumer or user.

In products distribution, most of the players in the industry have short channels of distribution. The general pattern of distribution of agrochemical products is as per the diagram below:



3.2.1 Distributors

There are limited number of wholesalers in the agrochemical distribution network. Usually each company has distributors that are authorised to buy direct from the company for subsequent reselling to other retailers who sell to farmers and other users. The major distributors include:

1. *Agricultural Development Projects*

The commercial arms of Agricultural Development Projects (ADP's) nationwide are mandated to procure, distribute and sell agricultural inputs including agrochemicals direct to farmers. These ADP's have their own networks extended from the different state capitals to most local governments and districts for distribution of farm inputs. Agrochemical companies usually choose the channel to sell to these ADP's as they operate to the doorsteps of the customer, the farmer.

2. *Agro-based Organisations*

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Specialised organisations are also appointed to distribute agrochemical products. Some of the ones identified are ECWA Rural Development, Christian Farmers Cooperative Associations and farmers cooperative societies.

3. *Corporate Bodies*

Some subsidiaries of corporate entities distribute some agrochemical products. These entities usually have large buyers as corporate farms and other retailers who patronise their network of sales outlets all over the nation. For example, GBO/MDS, a division of UAC Nigeria Plc has been into active agrochemicals distribution.

4. *Businessmen Distributors*

Perhaps the most active distribution network are the individual businessmen some of whom are professionals in agriculture and others only experienced in the trade. Some with large capital outlay are the major distributors of agrochemicals nationwide. These

individuals usually stock particularly in urban centres and re-distribute through retailers to the rural areas to the farming communities and other users of the products.

To determine the role each one of these channels play in getting these products to the end user, it was discovered that there are variations in the importance of the various channels to different companies. An analysis on the channels of five of the major players reveal the following table:

Table 6: Rating of Different Channels By Company (%)

COMPANIES	ADP'S	CORPORATE BODIES	AGRO-BASED ORGANISATIONS	BUSINESSMEN DISTRIBUTORS	OTHERS
SNCCCL	20	5	5	50	20
CAPL	10	10	5	60	15
R. POULENC	30	-	10	55	5
CANDEL	10	-	25	60	5
GONGONI	-	20	5	70	5
AVERAGE	14	7	10	59	10

(Source: Field Research, 1991)

It is very glaring, therefore, that distributors or dealers play the most important role in getting these products to their potential users and farmers accounting for almost 60 per cent of sales turnover of agrochemicals in the country.

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3.3 Agrochemical Consumption in Nigeria

Nigeria has a fairly long history of pesticides usage in both agriculture and public health. It has been noted that since the early 1940's about 90 per cent of pesticides used in the country are for agriculture, that is they are used in food and cash crops production, while the remaining 10 per cent are for domestic, public health and industrial usage.²

Successive Nigerian governments had in the past, in an attempt to achieve self-sufficiency in food production, embarked on different strategies for agricultural revolution. These strategies were tagged as:

1. National Accelerated Food Production Programme (NAFPP)
2. Farm Settlements
3. Operation Feed the Nation (OFN)
4. Green Revolution
5. Back to the Land
6. Directorate of Food, Roads and Rural Infrastructure (DFRRI)

These programmes led to a situation in which Nigerian doors were open to importation of all kinds of agrochemicals. This is because pesticides were regarded as important inputs in agricultural production as various trials had demonstrated the enormous potentials of pesticides in securing increases in crop yields. In the past three decades, therefore, Nigeria saw an influx of large tonnage of various classes of pesticides into its agro-eco systems.

Table 7: Pesticides Imports into Nigeria, 1964-1994

Year	Quantity (Metric Tonnes)	Value (N '000)
1964	6.33	3,374
1969	7.33	3,824
1974	14.52	7,726
1984	32.52	20,299
1989	245.00	153,000
1994	1250.00	907,000

(Source: Idachaba and Olayide, 1976; Field Research, 1995)

The above table shows the domestic importation of agrochemicals into the country from 1964-1994. The government policies listed earlier on led to an increase in consumption of 124 per cent between 1964 and 1974, 129 per cent in 1974-1984, and almost 3700 per cent during 1984-1994. This astronomical increase has been attributed to a variety of factors including but not limited to the following:

- 1) World Bank support to agricultural development in the country through the establishment and funding of ADP's in almost all the states of the federation between 1983 and 1994.
- 2) Assistance received from such organisations as the European Economic Communities (EEC), the African Development Bank (ADB) and other foreign aid agencies such as Japanese Aid all aimed at boosting agricultural production and control of major pests ravaging crops in these periods.

3) Investment of private domestic companies in the importation and marketing of agricultural pesticides in the country.

It should be noted, however, that Nigeria experienced a continued devaluation of the Naira since 1986: from an exchange rate of N1 to \$0.75 (1986) to N82 to \$1 (1994). This had led to an astronomical increase in the per unit price of pesticides marketed in the country. This will be examined in the next chapter.

3.4 Agrochemicals Sales in 1993 and 1994

The table below examines the volume of sales of pesticides in Nigeria in the years 1993 and 1994 by the major product groupings. It can be seen that, in volume terms, the most consumed pesticides are fungicides and herbicides. However, in value terms, storage pesticides are those taking the largest share of Naira invested.

Table 8: Volume Sales of Agrochemicals in 1993 and 1994

	Volume(Metric Tonnes)		Value (N millions)	
	1993	1994	1993	1994
Herbicides	572	364	315	250
Insecticides	235	184	215	168
Fungicides	580	470	70	62
Storage Products	246	222	422	381
Seed Treatment	12	10	44	46
Total	1645	1250	1066	907

(Source: Field Research, 1995)

There was a decline in consumption of almost 32 per cent between 1993 and 1994 caused mostly due to confusion in government policy which affected importation. During the period there was the astronomical rise in exchange rate from an average of N44 to \$1 early in 1993 to over N80 to \$1 in 1994. There was also the attending effect of the high lending rates in banks that affected borrowing to finance new imports.

3.5 Agrochemical Companies Sales Turnover in 1994

In Chapter Two, an examination was made, in subjective terms, of the market shares of the agrochemical companies operating in Nigeria prior to the withdrawal of some multinational firms in the late 1980's and early 1990's. In the course of the research, the estimated sales volumes of various product ranges of these companies during the year ending 1994 were collated. The summary of this gathered information is presented in volume terms in Table 8 which is regarded as more accurate, indeed, most of the companies shied away from discussing their individual products value sales.

The sales figures obtained from these companies were further subjected to scrutiny through interviews with their major customer groups. Information obtained on volume of products bought from different companies by distributors and some ADP's were then compared to arrive at the fair estimated volumes of sales by some of the companies in 1994.

Six companies which account for over 50 per cent of the market share were more closely examined as they are more formally organised. The others were grouped. It is clear that the data collected from these companies on the constraints faced in agrochemicals marketing is a good representative sample for the rest of the industry.

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Table 9: Agrochemical Companies 1994 Volume Sales by Products (Metric Tonnes)

Company	Herbicides	Insecticides	Fungicides	Seed Treatment/ Storage	Total	% Value Sha
SNCCCL	104	21	25	20	170	14
CAPL	90	75	5	25	195	16
Rhone Poulenc	70	13	-	20	103	8
Candel	32	10	-	5	47	4
Gongoni	-	15	-	75	90	7
C. Zard	31	10	-	3	44	4
Others	37	40	440	84	606	4
Total	364	184	470	232	1250	100

(Source: Field Research, 1995)

From the discussion so far, it is quite evident that pesticides are important inputs in the quest for improving agricultural production and ensuring agricultural development of Nigeria. The fact that investment in the sector despite inflationary trends and devaluation has continued to multiply and that new organisations are joining the trade is a testimony that sustainable agricultural growth could only be achieved with the input of the sector.

It can be seen from Table 7 that consumption rose from a meagre 6.33 metric tonnes in 1964 to 1250 metric tonnes by 1994, while value increased from only N3.3 million to N907 million, an astronomically high increase inspite of the inflation and other accompanying economic factors. This also testifies to the fact that the Nigerian farmer has come to realise the importance of such an input and has adopted and adapted it to his use.

As pointed earlier, it is only through the adoption of modern technology that Nigeria would be able to feed its ever-growing population. And with the attendant limitations of lack of machinery, land tenure system that limit land expansion, and the uncontrolled rural-urban migration, employment and use of pesticides and other improved inputs becomes even more necessary. Likewise, with potential crop yield losses of as high as 40 per cent in the field and at least 10 per cent in storage, and with over 60 per cent of Nigeria's population being dependent on agriculture for their livelihood, crop protection becomes more pressing. And the application of pesticides will remain in the forefront of practical pest control measures in the foreseeable future.

It has been estimated that the growth in the agrochemicals industry for 1991 to the year 2000 in Nigeria will be at 5-10 per cent per annum in volume terms as compared to 0.5-1 per cent for the world market.³ What have been seen in the first part of the year is a much higher rate of growth, although donation of products to the federal government by aid agencies contributed to the astronomical rise.

From the performance of these companies and their renewed vigour with new entrants, it becomes clear that the market holds enormous potentials for these companies to remain in business and expand operations for future challenges. Demand for pesticides will be on the increase as more and more farmers discover the benefits associated with their use. If farming continues to become less labour intensive and farm expansion is no more a feasible option with industrialisation and urbanisation which further complicate rural-urban migration, pesticides will ever remain one of the remedies towards ensuring increased food production in Nigeria and other developing countries.

¹ Nwokoye, op. cit., p. 131.

² S.O. Adesiyun, "Pesticides Usage in Nigeria: Practices, Peculiarities and Problems," Unpublished paper presented to the National Workshop on "Safe and Effective Use of Pesticides in Agriculture and Post-Harvest Storage," held at the Obafemi Awolowo University, Ile-Ife, Nigeria 23-26 November, 1992, p. 21.

³ P.N. Ikemefuna, "A Survey of the Agrochemicals Industry in Nigeria," A Special Report article in the *Nigerian Farmer* (October 1990), pp. 17-23.

CHAPTER FOUR

DATA ANALYSIS

This chapter will analyse the information received from respondents (within and without the industry) which highlight the important role pesticides play in the agricultural and economic development of Nigeria as well as the constraints of pesticides marketing in Nigeria. The analysis is organised around major categories of constraints as enumerated below:

1. Political constraints
2. Economic constraints
3. Managerial constraints
4. Technical constraints
5. Social and environmental constraints.

4.1 Political Constraints

These are constraints that have arisen principally due to lack of or true commitment of government to policies that are aimed at ensuring that the sector complements government efforts in supplying agricultural inputs to the Nigerian farmer.

4.1.1 Lack Of Defined Legislation

Nigeria lacks any defined comprehensive policy on importation, manufacture, distribution, sale and use of pesticides. The research found out that every company and individual with access to foreign exchange interested in the importation of any type of agricultural pesticide does so without seeking any clearance or approval from the authorities concerned. Companies are free to advertise, promote and appoint their distributors using

their own discretion as well as sell their products to any buyer for whatever use he intends to put them to.

4.1.2 Lack Of Information On The Pesticides Industry

As a result of lack of any defined policy on the sector, the research discovered that there is almost a non-existent data on the industry as regards the importation of pesticides, approved products to be used in Nigeria, the list of products currently in use, volumes consumed in the country in the past few years, approved channels of distribution, approved manufacturers and marketers, the number of manufacturing and formulating plants in the country, approved uses of different pesticides and so forth. Pesticides manufacture and sales were left at the mercies and decisions of the operators of the industry without any guideline.

4.1.3 Lack Of Government Support:

In the course of the survey, it was found out that although the government has a gazetted policy of encouraging the establishment of plants and local manufacture of agrochemicals, of the two companies that have manufacturing plants, namely, CAPL and Gaskiya Consolidated, only CAPL is operating its plant epileptically at less than 25 percent capacity annually in the past four years. Although the company has the capacity to formulate and pack a very wide variety of liquid and powdered formulations, lack of the appropriate encouragement and protection, and allowance for the importation of all types of products, including but not limited to those locally manufactured such as *Gammalin 20* and *Actellic Dust* has been affecting the performance of this local manufacturer. This is because in some cited cases as in the local manufacture of *Gammalin 20* where the local costs of production are attractive when compared to imported stocks there is smuggling into Nigeria of a Ghanaian brand of the product. The product is heavily subsidised by the authorities of that country to boost cocoa production, therefore, while brought here it has to affect local production and sales as Nigerian authorities do not do the same which put the local manufacturer at disadvantage as he has to cover costs and make a profit.:

4.1.4 Lack Of Complementary Inputs

The lack of and high costs of fertilizers and other complementary inputs has generally affected the marketing of agrochemicals. Farmers complain of poor yields as a result, which lead to poor returns from farms and, therefore, makes the use of agrochemicals less cost effective in many instances.

4.1.5. Inconsistency In Policy

Under 'policy stability on the role and responsibilities of the government' as outlined in Chapter Five of the 'Agricultural Policy for Nigeria', distributed by MAMSER, the government stated that "past agricultural policies in Nigeria have been characterised by frequent changes or instability as a result of changes in government or in the personalities of the operators of the system. When this happens there is always the tendency for the value system underlining previous policies to change." It states further that "this is because formulation of these policies has never reflected the fundamental values and goals of the aggregate society, nor were they formulated on the principles that were of general acceptance to the populace". For example, in 1985/86, Nigeria's government policy on backward integration led many multinationals and corporate bodies back to the land so as to locally source their agricultural raw materials. Such corporations included Nigerian Breweries, Guinness, Nigerian Flour Mills, UACN, IBBI Krounebourg, UTC, Nestle and some others. This led to expansion of cropped areas and use of more improved agricultural inputs particularly pesticides, due to the large tracts of land involved. The resultant was increased crop production and low food prices. However, most of these organisations failed to live up to expectation due mostly to poor management which consequently led to increased cost of production. As with many other government policies in Nigeria, the thrust was relaxed within a few years and these organisations started once again to source their grains raw materials through local purchases from subsistent farmers and through imports. Consequently, the farms were abandoned implying drastic reduction in the consumption of pesticides and other inputs.

4.1.6 Pesticides Aid Package

The Japanese government had supplied Nigeria with an estimated 500,000 litres of various ranges of pesticides between 1991 and 1994 to aid rice production. These products were then sold at a heavy subsidy of over 50 per cent of their market value to privileged farmers and other related organisations. These stocks subsequently found their way into the hands of pesticide distributors and retailers who then resold them to other farmers and users. This aid package and other similar ones such as those of the European Economic Community (EEC), Overseas Development Association (ODA) and others which are ideally supposed to be tailored to specific agricultural programmes, positive and well intentioned as they may be, are among the constraints affecting a stable growth of the Nigerian agrochemicals market.

4.1.7 Purchases Of Pesticides By Governments

The purchase of pesticides by either federal or state government aimed at combating a ravaging or emergency pest problem or aimed at promoting a particular government crop programme such as cotton or groundnut rehabilitation programmes has mostly resulted in such pesticides ending up for resale at the market place. The government is a bulk buyer of pesticides and does not buy usually for resale but for distribution to states and for specific project use. The re-cycling of these stocks back to the market at ridiculously low prices than they were originally bought destabilizes the mixes of agrochemicals marketing.

4.2 Economic Constraints

Every sector of the Nigerian economy has been inflicted in one way or the other by the effect of one economic constraint or the other. However, the agrochemicals business which has been identified as almost 95 per cent import dependent would naturally react to any factor that affect the performance of the economy.

4.2.1. Devaluation And Exchange Rate

The Naira devaluation which began since September 1986 has gradually made all pesticide products less accessible to more of its potential users. This is because costs have multiplied so many folds within this period. Table 10 shows comparative prices of some selected pesticides between 1986 and 1994.

Table 10 :Market Prices of Some Selected Pesticides.

1986-1994 (per litre in Naira)

PRODUCT	1986	1988	1990	1992	1994
Gramoxone	49	60	75	160	345
Primagram	52	65	74	137	240
Gammalin 20	30	52	68	120	320
Karate 2.5 EC	89	150	170	350	570
Nuvan 1000 EC	75	100	130	216	378

(Source: Field Research,1995)

It is very clear that devaluation which had affected prices within this period by between 300-600 per cent was one of the major constraints that the sector had suffered, moreso, if it is considered that it was about the period that efforts were made to get farmers to adopt the pesticides technology.

Similarly, the exchange rate of the dollar to the Naira has continued to worsen from a 1986 exchange rate of \$0.75 to N1.00 to a 1994 rate of \$1.00 to N82.00 at the official market. Shortage of foreign currency with the Central Bank of Nigeria had also led companies into buying at rates as high as N88.00 to the dollar in the parallel market.

4.2.2 Banks Lending Rate

Worsening the effect of the Naira devaluation and exchange rate was the high rate of interest being charged by banks on loans, advances and overdrafts. Bank lending rates ranged between 30 percent and 75 percent within the period under review. This made any genuine investment very expensive and in fact most companies bought only their most necessary requirements marginally. Some companies resorted to buying only few product lines and cut down on volumes. Others totally wind-up their operations, which included Nigerian Hoechst, National Oil, DuPont and Bayer, from the Nigerian Agrochemicals market. Others such as Rhone Poulenc and ZENECA (ICI) made other alternative distribution arrangements. The major factor that led to this de-investment was the fact that it was no more profitable to invest because return on investment in dollar terms was negligible as volumes were low as well as profit margins. That also led to spiralling of prices of products with expectation of a new price every quarter of the year. From Table 10 price differentials were above 250 per cent in all cases between 1990 and 1994 as compared to less than 100 per cent in the preceeding years. The price increases were, however, made only to cover part of the changes in exchange rate but the market could not absorb all the changes in view of the corresponding originally planned profit margins.

4.2.3 Tariff Structure On Imports

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Inspite of government policy of subsidizing farm inputs, duties on pesticides remained as high as 15 per cent between 1990 and 1994. This coupled with other levies as imposed in the ports in the course of goods clearing, and other taxes such as the value added tax (VAT) together further worsen the transfer prices to the end user.

4.2.4 Importation Lead-Time

From the interviews conducted with personnel of manufacturing and marketing companies, it was found out that it usually took between 4 to 6 months, in some instances more, between placing an order and its arrival at the marketers' warehouses for distribution. This constraint is further aggravated by the lack of appropriate data on annual

requirements, shortage of foreign exchange, limitation on working capital and the country of origin of such a product being imported.

4.2.5 Port Delays And Closures

The Nigerian economic environment is subjected to an annual uncertainty, as virtually every policy that affects the economy is dependent on the announcement of the annual budget. This more often than not leads to closures of ports and suspension of major economic activities until when the budget is announced. The sea ports are usually closed to plan on modalities of implementation of new tariff and levy structures which accompany the new budget. This subsequently lead to products being cleared clumsily as it takes a period longer than necessary, in most cases over one month, between the product's arrival and when it finally leaves the ports. Sometimes this delay could extend up to six months.

4.2.6 Poor Prices Of Farm Output

The low prices of grains in the market which was further affected by poor exchange rate of the CFA franc that made it unattractive to smuggle or export grains to the neighbouring countries also affected pesticides consumption by the Nigerian farmer. Hitherto, farmers found it more profitable to export their grains, but the devaluation of the franc in 1992 has reversed that situation in favour of local disposal.

4.2.7 Slump In Industrial Consumption

The poor sales experienced by the textiles sector coupled with the competitive price and quality of seed cotton being offered to the sector by farmers of neighbouring countries had caused a slump in pesticides consumption applied to local cotton, a crop sector that used to be one of the largest consumer of pesticides. Similar fate has also affected flour mills which are the major users of wheat and maize crops where large volumes of herbicides are applied annually.

4.2.8 Withdrawal Of Foreign Economic Aids

Foreign countries and aid agencies that hitherto provided very cheap money in aid of agriculture in the country have been withdrawing , either due to the lapse of a specific project or other considerations that are mostly political. Such organisations include the World Bank which has withdrawn from various ADP's of the states; the EEC, ODA and others. The funds allocated for direct purchase of agrochemicals through the assisted relevant projects are no more available, which therefore reduces volumes that would have been consumed and marketed.

4.2.9 Purchasing Power And Disposable Income

It has been generally accepted that over 60 per cent of Nigerians live in rural areas depending on agriculture for their livelihood. It is a fact also that over 80 per cent of farming in Nigeria is at subsistence level. These facts translate to that the Nigerian farmer has less money to invest in new technology that limits his farm expansion and subsequently production and which, in consequence, affect the volume of agrochemicals that could be sold.

4.2.10 Lack Of Agricultural Credit

Inspite of government policies directing banks to extend at least 15 per cent of their loan portfolio to agriculture, very few banks have done so, due to risks involved in farming and guarantee of recovery. Similarly, due to the cumbersome procedures involved and the requirements for collaterals, most farmers shy away from obtaining bank loans to purchase agricultural inputs.

4.3 Managerial Constraints

These are constraints which result from lack of defined government policies on the manufacture, marketing and consumption of pesticides.

4.3.1 Neglect Of The Marketing Concept

From the study, it was vividly observed that most companies were involved only in the selling of what they anticipated would give them the best returns within the operational environment. The issue of identifying consumers needs and wants and then tailoring production or importation towards satisfying those needs and wants has been neglected. Most distributors and farmers interviewed responded that most packaging sizes and materials are unsuitable, large and poorly finished. Labels are not properly done by some companies, with instances of some products carrying improper label, no directions for use, no name for the active ingredient, no antidote or first aid direction on accidental consumption, no toxicity identification and in fact some labelled in foreign not understandable language.

4.3.2. Lack Of Effective Umbrella Body For Marketers

This has further worsened the plight of the sector as government does not give it due recognition. The Agrochemicals Group of the Manufacturers Association of Nigeria (MAN) only consists of the erstwhile multinational companies like SNCCCL, CAPL, Rhone Poulenc and BASF. Other distribution agencies and the distributors and retailers of pesticides are not members. Hence setting ethics of operations and making representations to government on issues affecting the sector could not be representative and very effective. This also creates a wide gap of information flow from the manufacturers down to the end users and vice versa. This is also responsible for the lack of any meaningful collated data on the industry.

4.3.3 Unorganised And Unstable Distribution System

The distribution system of pesticides in the country tends to be the wishes of the manufacturers or marketers. A close analysis revealed that except in a very few cases of organised channels of distribution such as through ADPs and few cooperative associations, distribution of pesticides is through businessmen traders spread all over the major towns in the country. A survey in Kano and Kaduna towns revealed that the distributors and

retailers are mostly concentrated in the main central markets. The study also exposed that of the 30 distributors interviewed only three or 10 per cent have a formal agricultural education. Others are specialised in unrelated fields or even have no formal education. Table 11 contain the survey result as follows:.

Table 11: Educational Background of Pesticide Retailers

Number of Retailers		Educational Level			
	Total	Higher	Secondary	Primary	None
Kano	20	3	4	6	8
Kaduna	10	1	3	4	2

(Source: Field survey,1995)

This result, therefore, leaves the mercy of any effective distribution at the hands of mostly untrained and non- professional businessmen with the money to invest.

4.4. Technical Constraints

These are constraints that are technical in nature and influence the smooth market operation of pesticides marketing

4.4.1 Research and Extension Services

The lack of proper research into products that are better suited to our environment often leads to importation of products that fail to perform the function they are expected to. This results in waste of the limited available funds of the end-user. Also lack of proper and well-trained extension staff of the states ministries of agriculture and ADP's on pesticides selection and application leads to poor adaptation of some technologies and non-expansion of the market.

To add to this is the lack of reliable local technical research information on some of these pesticides. There is usually a dependence on technical data from foreign manufacturers that may not necessarily be applicable to our own geo-climatic conditions. This is because there is also no standardization of products to be used in the country.

4.4.2 Adulteration and Counterfeit Products

The lack of proper organised market for pesticide products coupled with poor market and user information has led to smuggling from across the borders into Nigeria of cheap counterfeit products that may not necessarily fit the local requirement. Likewise, some people have specialised in the adulteration of certain popular pesticides, change of labels and other unscrupulous practices. This has led to loss of confidence on most distribution networks and, therefore, further reducing the turnover levels of sales of these products.

4.4.3 Products Recycling

The survey showed that large volume of products that are bought are recycled in the market a number of times. Products bought to be used in one season usually resurface again 5-10 years after for resale. Some distributors are also found to be holding stocks for as long as 10 years. This discovery further complicates the issue of ascertaining actual volume of pesticides applied to crops in any one year. It also influences appreciation of market prices to reflect present manufacturing costs and prices.

This factor also leads to very ineffective long-term planning by companies because of an unforeseen market saturation of certain products.

4.5 Social and Environmental Constraints

These are the various other factors that influence the organised marketing of agrochemical products in Nigeria. They range from those with direct effect on the consumer of crops produced through the use of these pesticides to those affecting the manufacturer, the distributor or retailer and the end-user. They also affect the government and its agencies as well as the environment.

4.5.1 Poor User Education and Wrong Use

Most handlers and users of pesticides are unaware of its harmful effects. Pesticides are poisons and lack of basic education on how and where to use them is detrimental to their marketing. Pesticides are found to be used on purposes that are health risky to human beings and the environment such as in catching fish, curing toothache, as worm expeller and other stomach troubles, control of head lice and drying fish. Some are also used in crops not designated such as using very toxic insecticides for grains storage, rats control and public health use in homes. Use of protective clothing and other wears is not also being observed during application.

4.5.2 Lack of Good Storage and Disposal Facilities

In most of the shops surveyed, pesticides are found freely displayed on shelves and floors without any regard for their storage and handling requirements. These products are openly repacked into baby syrup bottles and other similar containers for resale. Likewise, some are displayed in the sun which accelerates their degradation and subsequently their performance when applied.

Related to storage facilities is the lack of disposal facilities for pesticides. Although most label recommend the burning and burying of pesticide containers, what is of common occurrence is the use of used pesticide containers for other purposes detrimental to the health of man. For example, farmers and other unsuspecting persons use the various 1, 5, 10, 25, 50, 200 litre containers to fetch or store water and food grains, to feed or water livestock, to store edible oil or cow milk and for variety of other uses.

4.5.3 Environmental Hazards

Related to the above factor is the fact that as a result of poor storage or disposal of particularly left over pesticides that are thrown into gutters, ponds and streams the environment and aquatic life are turned toxic. There is presently rare or no toxicity, bio-degradability and bio-accumulation tests by importers of these products.

It was also observed during the survey that a lot of pesticides hitherto banned in most European countries are still being sold in Nigerian markets openly.

4.5.4 Logistical Problems

The petrol scarcity faced in the country between 1992 and 1994 particularly in most parts of the North where most of the pesticides are used caused a lot of transportation problems. These problems made it more difficult for farmers to move and dispose of their farm outputs more profitably. It, therefore, resulted in less money being available for the purchase of pesticides for use which, of course, affected additional sales, manufacture and importation of these products.¹

¹ Ministry of Agriculture, op. cit., p. 64



CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSION

Chapters Three and Four of this thesis presented the data collected in the course of field survey while an attempt has been made to provide an objective and concise analysis of the constraints identified in marketing agrochemicals in Nigeria. This chapter is dedicated to giving recommendations and conclusions based on the analysis.

5.1 Recommendations

The recommendations given below are aimed at providing objective solutions to the problems identified in the course of this work. It is hoped that when they are implemented by the relevant operators or players in the industry, they will no doubt assist in solving the identified major constraints faced by the agrochemicals sector and pave way for an organised industry. It is through this that the agrochemicals sector will make its contribution for Nigeria to achieve the expected sustained level of agricultural development and economic growth.

5.1.1 Role Of Government

I. Defined policy on agrochemicals supply: It is the responsibility of the government to ensure that strategies formulated to achieve the agrochemicals policy of the nation are implemented and supported. The strategy on agrochemicals supply has been to encourage the establishment of local manufacturing plants and use of local raw materials. It is also aimed at ensuring timely supply in adequate quantities those products not locally manufactured by providing the necessary assistance for their importation. The government should therefore, keep to its policy and ensure its support and encouragement to companies with local manufacturing facilities. It should assist them and invest in research and development of products that would suit local local needs of Nigerian agriculture. For products that would necessarily have to be imported, government should ensure that it is

only the necessary tariffs that are charged, because ultimately the Nigerian farmer will still be the one to pay the price.

II. *Pesticides legislative control*: To sanitize the industry, it becomes imperative to formulate a legislation that would regulate the manufacturing, importation, distribution, sale, promotion, advertising and the use of pesticides. In addition the government should ensure the provision of adequate resources for effective enforcement of this legislation. The role of organisations such as the Federal Environmental Protection Agency (FEPA) becomes very important. This role should be enforced to ensure proper registration of all products in use or to be used in Nigeria. It should also be able to regulate the importers and products being imported, the distributors and the type of products each category could distribute as well as define properly how pesticides should be used, stored and disposed.

III. *Government purchase of agrochemicals and foreign aids*: To ensure the development of the agrochemicals sector, governments direct bulk purchase of these products should only be for use on projects or for the control of emergency pest menace situations, in which cases strict monitoring is necessary. It may be worthwhile if products used in states and local governments are partly charged to that state or local government account so as to check the abuse of the products by some officials. Where government receive foreign aid in terms of cheap funds attached to purchase of pesticides or in terms of direct receipt of products, it should encourage distribution at a very low subsidy direct to farmers. Bulk sales to distributors and other non farmers should be at or near prevalent wholesale prices, so as to ensure stable market prices.

IV. *Supply of other complementary inputs*: To achieve improvement in food and cash crop production, the government has a very important role in ensuring that other complimentary inputs are made available and accessible to the farmer. Fertilizers, improved certified seed varieties, irrigation and farm traction facilities are inputs necessary to compliment the use of pesticides in crop production. The government through the Nigerian Agricultural Insurance Credit Scheme should guarantee any willing and innovative farmer, who has no such

collateral as required by the banking sector to have access to soft interest loan for the purchase of inputs to boost his production.

V. *Farmers and extension staff education:* It is the responsibility of the government to ensure that all handlers of pesticides are well trained in the handling, use, application storage and disposal of pesticides. The agrochemical companies should be compelled to train senior extension personnel and other subject matter specialists, who could in turn train others. This would definitely reduce risks associated with misuse, wrong use, poisoning contamination and other environmental hazard.

VI. *Other roles of government:*

- ♦ The government is expected to ensure the protection of consumers from the exploitation of particularly retailers of pesticides through standardization of products to use and proper education.
- Government, in its zeal to ensure the survival of industries utilizing local raw materials, should encourage and promote local cotton production for the consumption of our local textile mills. This will apart from saving scarce foreign exchange, boost farmers income and improve his purchasing power.
- Although currency devaluation, exchange rate and interest rates are constraints peculiar to generally all sectors of the Nigerian economy, government has a role in ensuring that both investors in the Nigerian economy and consumers have access to their required goods or services within the limits of other economic constraints.
- Since subsidies extended to fertilizers have been grossly abused, it will not be appropriate to encourage further granting of subsidies on other inputs particularly pesticides, however, it is necessary to allow for low tariffs on pesticides such that their transfer prices become affordable to the Nigerian farmer. This may compensate the farmer for the low price he usually obtain for his crop because pesticides would allow him to cultivate more hectares more efficiently and effectively to achieve a higher per unit area yield.

5.1.2 Role Of Agrochemical Companies

I. An umbrella body: For agrochemicals business to be organised it is absolutely imperative for all companies involved in the manufacture, importation, and distribution of pesticides to come together under one umbrella. Such a body should function as the industry's regulatory authority. It should set the code of conduct of operators and business ethics to follow.

- It will set standards as regards products to manufacture or to import and the minimum content of its active compound; type of packaging material to use and its various sizes; and label information and language.
- Standards will also be set for channels of distribution; training of distributors; training assistance to government organisations, extension staff and farmers.
- Relationship standards with research institutes responsible for testing and approving products to be used in the country should also be defined.
- It will set up a data bank that will provide information on all aspects of the industry. Such information as importation data, consumption pattern, acceptable residue levels on crops and how to detect them, carry-over stocks, projected demand, foreign aids recieved as well as reaction of other variables within and without the industry.
- Standard and acceptable method of pesticide disposal should also be evolved. It is to also fight and bring to book all erring members and fake, adulteration and counterfeit product culprits.

II. The marketing concept: In addition to the above, companies in themselves should ensure that they are not only selling products to its customers, but that they are involved in a total system of interacting business activities inn the planning, pricing, promotion and distribution of their merchandise for the satisfaction of the requirements of the customers. Companies must ensure that all activities designed to ensure their customers satisfaction are

the goals they are set to achieve. They should also de-emphasize commercial gains and focus social responsibility.

III. Investment into manufacturing: As advocated earlier on, government should assist and encourage those companies with local manufacturing facilities. The companies in the sector must ensure optimal utilization of existing manufacturing plants and facilities for the manufacture and formulation of all possible pesticides. Cooperation in terms of contract production, mergers, acquisitions and other possible cooperation pacts could be explored. Through this economies of scale could be achieved and scarce foreign exchange could be better utilized elsewhere, whereas economic development could be achieved in that sector. This will reduce the lead time on imports, as well as reduce the effect associated with seaport delays and closures.

Collaboration with agricultural research institutes to research local materials to be used either to substitute, supplement or complement imported ones should be the focus of all. The need for the companies to invest in the funding of these researches could not be over-emphasised.

5.1.3. Role Of Agrochemical Distributors

I. Product Education: Agrochemical distributors, dealers and retailers form the most important channel of transferring products from manufacturers and marketers to the end user. As such this group must be properly trained on all aspects of pesticides, their categorisations, toxicity and hazard, minimal ethical standard required by government and companies on safe handling and distribution.

II. Group Organisation: Distributors in various locations must be encouraged and compelled to form organisations so as to set ethics of operations. As these groups are those responsible for most of the unethical things happening in the industry such as faking, adulteration, recycling, sale of expired and degraded stock and advising unsuspecting farmers on wrong uses and misuse, it will augur well to have them properly organised. A minimum education standard for all operators could be set so as to ensure that illiterates are

not administering poisons to the food we eat. Through government legislation, all erring operators should be punished. It is believed that if such actions are taken most of the distribution problems in the industry would be solved.

The group should also be encouraged to regularly meet and advise manufacturers and government on problems faced at the users and distributors end on products required, application ratios, packaging, poisoning and other similar issues as may be relevant.

5.2 Conclusion

The agrochemical sector in Nigeria has been playing a very important role in the agricultural growth and economic development of the country. This is through its contribution of providing a major indispensable farm input - pesticides - for the control of pests and diseases, which becomes necessary to achieve high productivity in food production required to feed the over 100 million citizens. These pesticides are products of research and embody technological change. They allow for the cultivation of large crop areas to produce higher yield as time and labour are saved, which are inputs that could be utilized in other sectors of the economy.

There are presently 10 companies marketing agrochemicals in Nigeria, some of which metamorphosed from multinational companies that were hitherto operating in the country. Others have either agency or distributorship arrangements, and with two involved in local formulation and manufacturing of ranges of pesticides. These companies were responsible for the marketing of most of the pesticides consumed in the country with a turnover estimated at N907m in 1994.

The agrochemical companies distribute these pesticides through various distribution channels including Agricultural Development Projects, agro-based cooperative organisations, corporate bodies and most importantly businessmen distributors who account for almost 59 per cent of all distribution. Almost 3 million metric tonnes of pesticides passed through these channels to the Nigerian farmer between 1993 and 1994 alone.

The survey found out that there were various economic, political, social, managerial, technical and environmental constraints facing agrochemicals marketing in Nigeria. In the first place, there was lack of commitment on the part of government in its agricultural policy and lack of regulations that would control the manufacture, importation, distribution and use of pesticides. Currency devaluation, exchange and interest rate fluctuations, neglect of the marketing concept by operators of the industry, lack of proper training in the use of pesticides, and a poorly organised distribution network were other factors affecting marketing of agrochemicals.

It is recommended that the sector must be properly organised with proper support and legislation from the government. The government should as well provide avenues for proper user education and supply of complementary inputs so as to achieve the goal of increased agricultural production. Companies and other organisations and individuals involved in the marketing and distribution of agrochemicals must be better organised so as to approach marketing as a system aimed at achieving better planning, pricing, promotion and distribution that would bring about desired customer satisfaction.

APPENDIX A

AGROCHEMICAL COMPANIES AND THEIR MAJOR PRODUCTS

COMPANY	MAJOR PRODUCTS			
	HERBICIDES	INSECTICIDES	FUNGICIDES	STORAGE/ SEED DRESSING
SNCCL	Primextra/ Primagram/ Gesaprim/ Cotoran/ Folar Rilof/ Rilit/ Galex/ Codal Igran Combi/ Gardoprim Stomp	Nuvan/ Nuvacron Basudin/ Dimecron Ultracide/ Polytrin	Ridomil	Damfin Apron Plus
CAPL	Gramoxone/ Agro-Atrazine Agro-panil /Agro-2,4-D	Gammalin 20/ Champion Agro-cythrion	Copper Sulphate	Actellic Dust Actellic EC
RHONE POULENC	Round Up/Ronstar 2,4-D/ Lasso-Atrazine	Sherpa Plus / Sevin Rhonclovos	-	Trogocide
CANDEL	Paraquat/ 2,4-D /Glyphsate MSMA/Propanil	Delvap super Delthrin	-	Protex
SARO-PHARMA	Gramoxone Round Up	Capsitox Cymbush	Copper Sulphate	Phostoxin
DIZAGRO	Atrazine/Diuron/ Propanil Alachlor/ 2,4-D/ Paraquat	DDVP/Diazinon Cypermethrin	-	-
GONGONI	-	Decis/ DDVP		Pif-paf/ Phostoxin
SCOA-AGRIC	Atrazine	Cypermethrin	-	-
C ZARD	Gramoxone	Karate /Cymbush	-	Actellic EC
GASKIYA	Teer/Atrazine	Cypermethrin	-	-

(Source: Field survey,1995)

APPENDIX B

RESEARCH QUESTIONNAIRE

THE CONSTRAINTS OF AGROCHEMICALS MARKETING IN NIGERIA

QUESTIONNAIRE TO AGROCHEMICAL COMPANIES

1. Name of company
2. Company Address
3. Number of branches
4. Staff strength in the agrochemicals business
5. What are your major pesticide products ? (specify trade names):

Herbicides

Insecticides

Fungicides

Seed dressing

Storage

Others (specify

6. What are your sales turnover for these products in the past 3 years:?

Herbicides

Insecticides

Fungicides:

Seed dressing:

Storage

Others

7. What are the prices of the major products that you sell: 1) 2)
4) 5) 6) 7) 8)
8. What are your considerations in pricing your products:

- 1) Inadequate working capital
- 2) Lack of foreign exchange
- 3) Long lead time
- 4) Delay at the ports
- 5) Others (specify)

24. What other major problems do you encounter in importation and manufacturing ? (tick as appropriate):

- 1) Working capital
- 2) Foreign exchange
- 3) Poor sales
- 4) Port delays and closures
- 5) Smuggling
- 6) Poor government support
- 7) High lending rates
- 8) Lack of local raw materials
- 9) Duties/ tariffs
- 10) Others (specify)

25. What are your major constraints in marketing and distribution ? (tick):

- 1) Lack of adequate distributors
- 2) Competitors
- 3) Inadequate stocks
- 4) carryover stocks
- 5) Debts with customers
- 6) counterfeit and adulterated stocks
- 7) Poor farmer's income

26. What is the average shelf life of any pesticide?

27. Is there any association of pesticide manufacturers or companies in Nigeria ? Yes/ No. Name it

28. Do you advocate for the existence of such a body ? Yes/ No

29. Is there any legislation for the control of the sales or production of pesticides in Nigeria ? Yes/No

30. What are the hazards of using pesticides ?

31. What efforts are you making to control such hazards in your organisation ?

32. What are the general problems affecting the agrochemical industry in Nigeria ? (speak freely)

33. What suggestions can you give to remedy such problems ?

34. What is the future of this industry in Nigeria ?

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APPENDIX C

RESEACH QUESTIONNAIRE

THE CONSTRAINTS OF PESTICIDES MARKETING IN NIGERIA

QUESTIONNAIRE TO AGRICULTURAL DEVELOPMENT PROJECTS

1. Do you have a commercial outfit that procures and distributes agricultural pesticides ? Yes/ No
2. What are your major sources of purchase ? Local Imports
3. What products and volumes did you import in 1992, 1993, and 1994 ?
4. What products and volumes did you buy locally in 1992, 1993, 1994 ?
5. What factors informed your choice of source of purchase ?
6. What were your sales turnover in volumes for these products in the above periods ?
7. What are your main sales outlets ? Direct to farmers/ Extension staff / Businessmen dealaes
8. Are you engaged in farmers education on use and application of pesticides ? Yes/No
9. Do you receive any assistance from the manufacturers in terms of training of personnel ? Yes/ No
10. What is the general perception of farmers on pesticides ? Positive? Negative
11. Have you recieved any complaint on esticides abuse and what is the nature of the complaint ?
Misuse /Wrong use / Poisoning / Adulteration / Others (specify)
12. What problems do you encounter in marketing pesticides ?
Inadequate stocks/ Improper stocks/ Uncompetitive prices/ Collaboration with businessmen/
Administrative bottlenecks/ Others (specify)

APPENDIX D

RESEARCH QUESTIONNAIRE

THE CONSTRAINTS OF PESTICIDES MARKETING IN NIGERIA

QUESTIONNAIRE TO DISTRIBUTORS OF PESTICIDES

1. What range of Agrochemicals do you sell ? (specify on each group)

Insecticides

Herbicides

Fungicides

Seed dressing

Storage

2. What are your maajor sources ofpurchase ?

Manufacturers

Agic development projects

Government agencies and ministries

Other wholesalers and distributors

Traders from neighbouring countries

3. What estimated volumes of these products did you buy from these sources in the years 1992, 1993, 1994 ?

4. What is your highest academic qualification ? Tertiary / Secondary / Primary. /None

5. Do you have any training on the use and application of pesticides ...

a) Before you embark on this business ? Yes/ No

b) In the course of the business ? Yes/ No

6. If so by who ? Manufacturers/ Extension staff/ Colleagues/ Day to day experience/ Others

7. Do you usually educate farmers on how to use products bought from you ? Yes/ No

8. Do you use any protective material in handling pesticides ? Yes/No

9. Are you aware of the standards of pesticides? Yes /No
 10. Are you aware of fake and adulterated pesticides in the market ? Yes? No
 11. Can you distinguish between the two ? Yes/ No
 12. For how long do pesticides stay with you before being sold ?
 13. Do you have any association of pesticides sellers ? Yes/ No
 14. Do you advocate for a body to comprise of manufacturers and/ or distributors of pesticides ?
Yes/ No
 15. Would you want the government to make laws regulating those that manufacture, handle, distribute, sell and use pesticides ? Yes/ No
 16. What major problems do you encounter in distributing pesticides ?
- Lack of adequate stocks from suppliers
- Lack of appropriate stocks
- High transfer prices from suppliers
- Inadequate working capital
- Too many competitors
- Competition with smuggled products
- Competition with fake/adulterated/counterfeit products
17. What suggestions can you give to solve these problems ?

APPENDIX E

RESEARCH QUESTIONNAIRE

THE CONSTRAINTS OF PESTICIDES MARKETING IN NIGERIA

QUESTIONNAIRE TO FARMERS

1. Do you usually apply pesticides to your crops ? Yes/No

2. What types do you normally use ?

Herbicides

Insecticides

Fungicides

Seed dressing

Storage

3. From where do you normally purchase your pesticides ? and which is the most reliable ?

Company/ Distributors / Retailers/ Hawkers/ ADPs/ Other farmers/ Extension staff

4. For how long have you been using pesticides ?

5. Have you attended any formal/ Informal school ? Yes/ No

6. Have you received any training on pesticides use and application ? Yes/ No

If yes by who ? Extension staff/ Manufacturers/ Dealers

7. Can you teach other farmers based on the training received ? Yes/ No

8. Are you aware that pesticides are hazardous products ? Yes/ No

9. Do you use pesticides for any other use apart from application on to your crops ? Yes/ No

Please specify

10. What other problems do you encounter in the use and application of pesticides ?

High costs/ Adulteration by dealers/ Unavailability/ Lack of capital to purchase/ Inadequate capital to buy requirements/ Others (specify)

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