PHYSICAL PLANNING CHARACTERISTICS OF MARKETS IN NIGERIA
(DESIGN PROPOSAL FOR MAKURDI MAIN MARKET)

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C E R T I F I C A T E

This is to certify that this Thesis has been submitted in partial fulfilment of the requirements for the award of the Degree of Master of Science, Urban and Regional Planning.

A P P R O V E D

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TO

LOVERS OF JUSTICE

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CHAPTER ONE

1.00. Introduction:

Many definitions and meanings have been attached to the word 'market' in various parts of the world. In America and Europe for example, such names like the Central Business Districts (CBD) are given to the core of their commercial areas which in that context is regarded as the market centre. These areas are characterised by intensive commercial activities. In terms of physical structures such commercial centres which are mostly along highways are characterised by high storey buildings. However, this can not explain market in Nigerian content because of the fact that the boundary limit of such commercial areas can hardly be delineated since they are mostly found along roads and streets. Although such phenomenon is identifiable in Nigeria, it serves only a small fraction of the population since only people who have the purchasing power could appear at such scene. Apart from the fact that shopping centres are made up of lock up stores with displaying windows facing the access road, they differ from the market in that they offer the owner greater security, better facilities for storing and displaying goods and greater advantage to sell goods of high value and quality.

Another description of market was given by Gibberd to be the oldest form of shopping centre in the western countries. That it consists of a series of stalls or boths arranged and placed end-on in parallel rows in an open or sometimes a covered space around which

the public can circulate goods that are mostly convenient types. The commodities are arranged in the stalls or even on the ground displaying the functions of the display windows in a locked up shopping centre. This is further characterised by frequent spaces arranged between the rows of stall blocks so that the shopper can be out across from row to row. Thus characterised by a lively jostling crowd of people. It is further described as essentially pedestrian with vehicles appearing at the scene only before the market opens. The stalls in this case as described by Gibberd are temporary ones, which are usually dismantled when market is over. This description would have agreed with the Nigeria context only for the fact that stalls are meant to be permanent in the case of Nigerian markets. Markets in Nigeria have been identified right from History to include: Morning markets, day markets, day and night markets, night markets and the periodic markets.

Morning markets though not very common in Nigeria at present, are held between about 6.00 a.m. and 12.00 noon. 'It has been said that most of the morning markets are historically old and located at the urban-rural fringe, near the defence-wall around the town'.[1] This location probably was for security reasons to control the number of enemies into the heart of the settlement. These sort of markets serve as places for the meeting of traders from rural and urban areas. The villages bring food items and sell to the traders of the town, who in turn take them to the day markets for further retail distribution.

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1. L.R. Vagale (Ed.), 1972. Anatomy of Traditional Markets in Nigeria, p. viii.

Day-markets tend to be the most common in Nigerian towns. They tend to operate between about 8.00 a.m. and 6.00 p.m. and some could extend to 7.00 p.m. These markets tend to be more organised, better laid out and distributed than the other types. They serve the purpose of distributing both agricultural produce as well as non-agricultural commodities to actual consumers. They cater for mostly retail trade and are characterized by intensive commercial activity, high density of day time population, congestion and noise.

Day-and-night markets operate between about 8.00 a.m. and 9.00 p.m. These type of markets could still be found in some places in Nigeria today. For example, six of such markets were identified in Ibadan by the students of Ibadan Polytechnic. They are known to be quite popular as they open for the longest number of hours and the buyers can visit them at any convenient time.

Night markets in Nigeria could be most interesting if viewed in the context of cultural patterns and social traditions of the country. In the historical evolution of night markets, Mabogunje noted that Clapperton identified seven night markets in Katunga (Old Oyo) in 1825. He also observed that they are common in most parts of Nigeria in such places like Oyo, Iseyin, Ilorin, etc. Such could also be found in places like Lokoja and Sanaru. The operational period of such markets is between 5.00 p.m. and 11.00 p.m. They specialize in selling various types of cooked and fried food and cater essentially for the needs of the local community thus the service areas are small. Though the night markets are basically economic institutions, they serve a social purpose as well. Many young men and women visit the night market to make friends, to eat

choice food, to indulge in gossip and amusement'.[2] It is also the scene for local politics, advertisements, festivals an example is (Agbesu at Lokoja).

Apart from the daily markets classified, there are some that operate on periodic basis. These have been classified by Mabogunje into two types, namely: 'provincial periodic markets' and 'inter-kingdom' periodic markets. The provincial periodic ones, he said, are held on every fourth day and attended by people living not too far from the market place. This type is commonly found in small towns or villages.

The inter-kingdom periodic market has a service area which is larger than the first type. The buyers and sellers come to the inter-kingdom markets from distances ranging from fifty kilometres to a hundred kilometres or more. These are held at intervals of eight to sixteen days while the provincial periodic are held at intervals of four to eight days. The main economic function of periodic markets is collecting, bulking and distributing indigenous as well as imported goods like foodstuffs, cloth, household materials and fancy goods. 'Apart from trading in a variety of goods, they provide scope for entertainment, amusement and social get-together as most Nigerian communities are still at a stage of urbanization in which economic pursuits are not fully separated from socio-cultural activities'.[3]

1.11. Definition in Nigerian Context:

This definition or explanation tries to combine that given by Hoddorand Ukwu and Gibbored. The one given by former describes the

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2. Ibid, Anatomy of Traditional Markets in Nigeria, p. 7.

3. Ibid, Anatomy of Traditional Markets in Nigeria, p. 8.

the Nigerian markets in terms of socio-economic functions they perform and latter describes the physical setting better.

Market as defined by Hodder and Ukwu is an authorized public concourse of buyers and sellers of commodities meeting at a place more or less strictly limited or defined at an appointed time.[4] Market is characterized by intensive retail activities. Physically they are found to have developed on open spaces with activities taking place in the open or undershades of trees with blocks of rocks and wood as seats. As a result of urbanisation that has increased the economic need of the market places, they are now characterised by series of laid down stalls arranged and placed end-on in parallel rows around which the public move with or frequent spaces arranged between the rows of stall blocks that enable the consumer to be out across from row to row. The stalls are often characterized by wooden and zinc or iron sheet for construction and in some cases grass roofs are common sights.

From this definition and description of market in Nigeria, places like the innumerable small places of ad hoc trading involving a handful of sellers, meeting at street corners and intersection of roads, or in front of compounds are excluded.

1.12. Importance of Markets and Justification of Study:

In developing economies such as Nigeria, development of rural-urban trade relations is epitomized in market places which function as physical nuclei for the exchange of commodities. Hence markets in Nigeria perform the following functions: (i) Form essential links in the chain of commodity distribution, (ii) Strengthen the economic base

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4. Hodder and Ukwu (1969), p. 19. Markets in West Africa.

of a town, and also sustain the tax-base of the local government through the collection of rates, (iii) give large measure of social security and economic opportunity to traders. Hence it has been noted that the market place can also be considered as an effective meeting ground of urban and rural cultures; hence in essence, the socio-physical manifestation of the rural-urban dichotomy.

Despite the importance of markets, they have been allowed to develop organically without planning. And for the fact that the over all performance of a market as efficient, clean and viable socio-economic institutions depends on its physical setting which determines the relationships between the various components that do exist, the study has been rightly chosen. It is further justified by the fact that Makurdi as a state Headquarters, forms a major distribution and collection centre for commodities in Benue State that needs a planned market, and to buttress it, the Benue State Government has signed a contract worth 25 million naira for the construction of a main modern market at Makurdi. Thus justifying this particular study.

1.13. Aim:

To study the physical planning characteristics of Nigerian markets with emphasis on Makurdi main market, with a view to identifying a basis for the design of a market for Makurdi township.

1.14. Objectives:

1. To identify the physical planning characteristics of Nigerian markets in relation to their socio-economic functions.

2. To make a detailed physical survey of Makurdi Main Market with a view of identifying physical planning problems in the market.
3. To study the physical planning characteristics of Kaduna and Sokoto modern markets with a view of identifying standards used and their present problems.
4. To make proposals for a main market for Makurdi that will serve the town and its environs.
5. To propose an enhanced managerial structure for the effective functioning of the market.

1.15. Scope and Limitation:

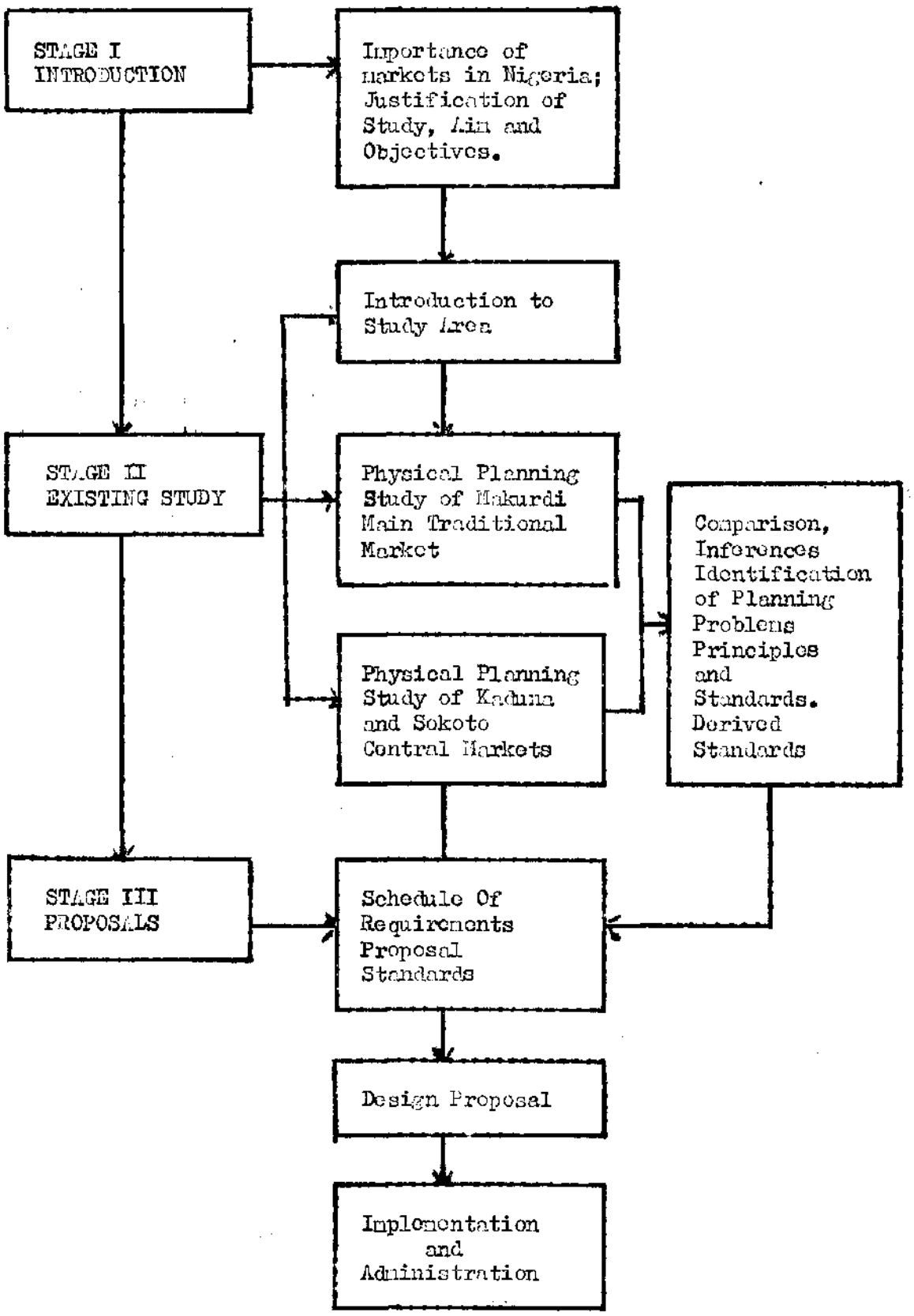
Hierarchies of markets exist in Makurdi which have been identified in terms of commodities sold, areas of influence and site coverage. However, for the purpose of this work, the physical setting is limited mainly to the main traditional market in Makurdi; Kaduna and Sokoto Central Markets.

The design proposal for the Main Market is based on ten year population projection as suggested by master plan.

1.16. Methodology:

1. The socio-economic survey of traders and consumers by ~~with~~ the use of questionnaires through stratified sampling.
2. Field observation and direct measurements; photography and informal interview of the officials.
3. To achieve the set aim and objectives the study has been conducted as shown in the conceptual framework below.

Conceptual Framework



1.17. Literature Review:

In West Africa, traditional markets have not been studied extensely and even the few studies made are mostly on socio-economic aspect of markets rather than physical. However, some few studies were carried out on the physical design aspects of market centres in the western countries then later, some Nigeria authors. It is necessary to note here that these studies in the western world were mostly on shopping centes which form their own markets. Prominent among such authors is Bromley who recognised that in some parts of Africa, Asia and Latin America the traditional markets have declined given way to shopping centres which are more permanent and offers the proprietor greater security, better facility for storing and displaying goods and greater advantage to sell goods of high value and quality.

Studies in West African and Nigeria in particular concerning markets can not be complete without mentioning about Hodder and Ukwu (1969) who defined markets as 'authorized public concourse of buyers and sellers of commodities meeting at a place, more or less strictly limited or defined of an appointed time'.[5] Although this study is on the socio-economic functions of the market, it gives an insight to any further study of markets in any West African country thus this definition is widely quoted.

In the History of towns in Nigeria whatever part, is connected with the founding of the main markets. In terms of spatial aspect, these main markets are normally situated in the centre of the town or near the house of the ruler as in Yoruba towns. Thus the main market forms part of the land use at the centre. The main market was described

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5. Hodder and Ukwu (1969), p. 19.

by Afolabi Ojo to form the hub of the economic activities of the people hence their central location. In terms of physical planning, the central location with respect to the area coverage of the town is to ease accessibility.

The traditional market is described to have been simply an open clearing without buildings. In most cases, trees with wide-spreading branches provided the shade while blocks of rocks about the size of small stools and smoothened holes of fallen trees were used as seats.

In the study of the anatomy of traditional markets in Nigeria with focus on Ibadan markets guided by Professor Vagale it was noted that generally, Nigerian markets have small site area coverage because most of them developed on incidental open space that do not give room for expansion to cope with the urban growth. Thus resulting into congestion. This congestion has also resulted into encroachment on roads and other public places. It has been noted in the same study that most of these traditional markets are poorly served by access roads that are found to be full of pot-holes and defective intersections. Furthermore, it was noted that most of the markets lack utilities, facilities and services which is responsible for their deplorable environmental quality. Thus dumping of garbage and other solid wastes at street corners, open drains, lack of trees and shrubs, absence of open spaces are common sights at the markets. The study noted that over two-thirds of the market structures are constructed with temporary materials (like timber and iron sheets) and crowded nature of the stalls which expose the markets to fire hazards.

From the study conducted, Vagele (1972) noted that what is needed in Nigeria is improving or robuilding of the markets in order to be able to function as efficient, clean and viable socio-economic institutions and as integral components of urban and regional systems. Thus on this basis some recommendation were made about the land use structure and design proposals depending on type and status of market.

In the study of market centres in Zaria urban area, Arinze (1976) identified the hierarchies of markets and shopping centres in Zaria and their spatial distribution. As a result she proposed the integration of markets and shopping centres but also observed that they should be in hierarchies. Reasons for such proposal range from the following: that they have virtually grown together in some zone and in terms of commercial function, they offer similar commodities though at different levels and scales thus catering for different categories of a city's population. And also that their integration will mean better use of space which will create a quality environment that will increase their economies of scale. Also for the consumer, a lot of money will be saved for commuting over space moving from shopping to market since they are located in one place.

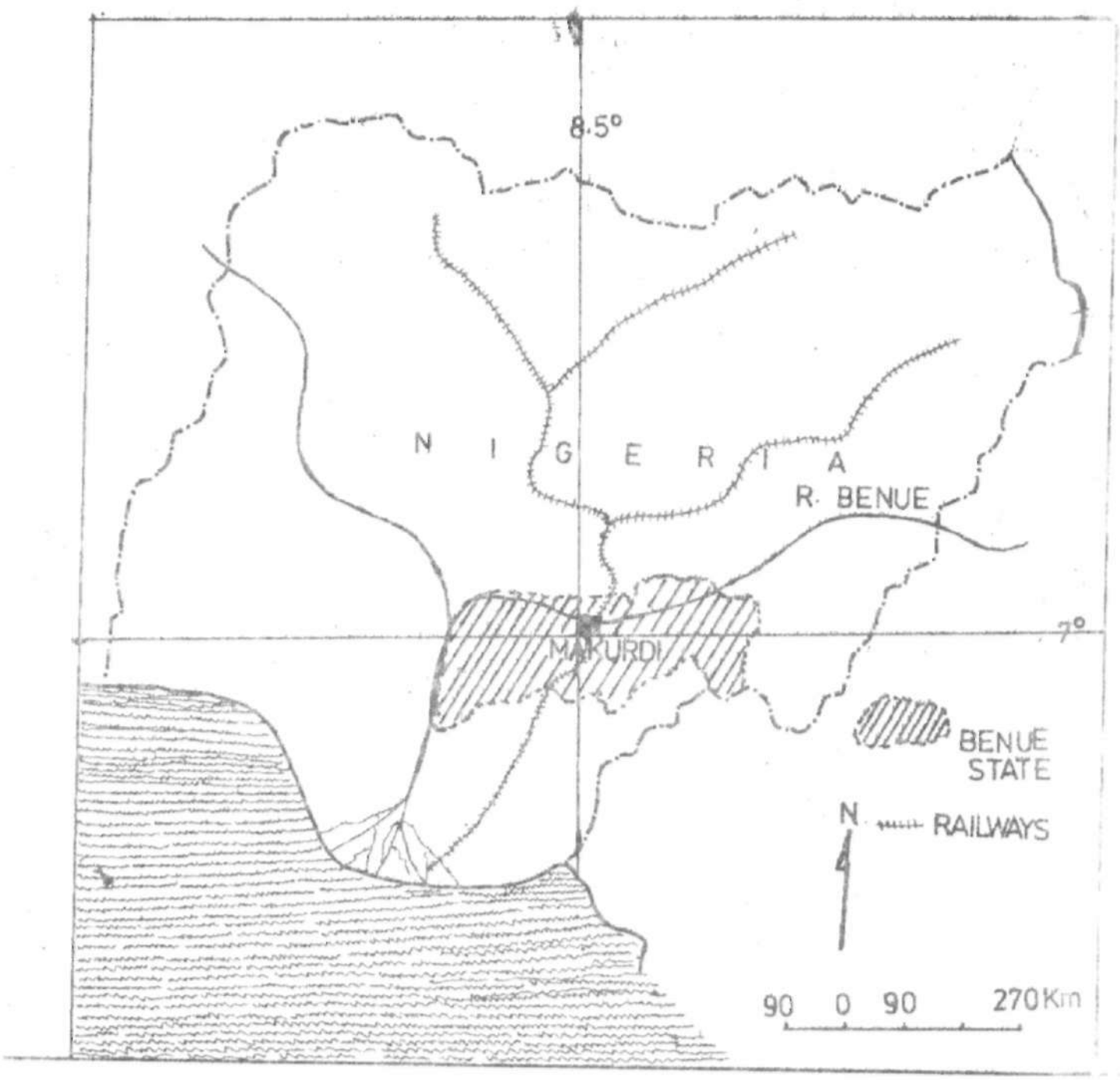
In the report prepared on Kurmi Market in Kano, Adeyemi and Benna studied the physical character and facility of Kurmi Market and noted two broad problems of hygience and physical appearance of the market. Under hygiene, the problem was noted to be that of heaps of refuse that were within the market and consequent blockage of drinage channels by part of the refuse. Also noted was the inadequacy of utilities, facilities and services such as toilets and water. While under the physical appearance the problems range from lack of proper maintenance

of stalls and conflicts in the use of space especially for car parks and commercial buses. From the study it was recommended that since some of the structures in Kurmi market form interesting aesthetic features the market should be improved upon by upgrading the structures through repairs and maintenance and the provision of adequate facilities.

The deteriorating environmental quality of Kurmi Market must have prompted Kabir (1977) to undertake the study on Urban Renewal of Kurmi Market. It was also observed that the structures were in bad condition and there was inadequacy of facility and service provision. As a result it was suggested in the study that the market needed a renewal or upgrading. Hence some recommendations were proposed. It was proposed that wet area should be placed closer to the western end of the market for easy access; while the dry ones should be on the basis of needs and demand. Set back for the stalls was also proposed to prevent the encroachment of traders on the walkways. It was also proposed that the social values of the people be put into consideration by introducing the concept of open square with the mosque as the focal point.

From the previous studies on markets in Nigeria, traditional markets have been identified to lack planning, coupled with poor environmental quality since most of them lack basic facilities and services and are made up of temporary market structures.

However, physical planning efforts have not gone beyond suggestions of how to solve these problems. And out of the suggestion, thus far serious thoughts have not been given to the problem of hawkers that constitute the informal sector of the market economy so to say. It is in the light of these shortcomings that this study has been geared towards not only identifying the problems as they exist but to represent the solutions in physical terms and to provide trading sites for the hawkers within the market since they sell almost the same type of commodities found in the market stalls.



[fig 2.01] POSTION OF MAKURDI IN NIGERIAN CONTEXT

CHAPTER TWO

2.00. GENERAL CHARACTERISTICS OF STUDY AREA

2.10. Location:

Makurdi lies roughly on latitude seven degrees North and Longitude eight and half degrees East. It is situated where rail, river, road and air transports are all available. It is the only place on the river Benue where there is a rail-road bridge, forming a major link between the Northern and Eastern blocks of Nigeria. (Fig. 2.01). This vantage locational site of Makurdi has made it a major distribution route of commodities.

2.11. Climate:

The climate of Nigeria is explained in terms of the seasonal shifting of pressure belts in response to the movement of the overhead sun. This can further be explained or restated in terms of the now recognised equatorial meritime and tropical continental air masses.

The equatorial maritime air mass is characterised by south-westernly winds coming to the land off the gulf of Guinea, and this form the main rain-bearing winds of Nigeria. While the tropical continental mass is that of the dry north-casterly winds known as the Harmattan. Hence the year can be broadly divided into two seasons. In the wet season, rain of the tropical front has retreated north wards and as a result in July and August, the whole country is traversed by south-westerly winds. In the dry season which corresponds with the winter months, the north-casterly winds cover the whole northern part of the country.

From this discussion and from the relative location of Makurdi, it lies within the transition zone of the North-East wind and the South-West wind. It is right to note here that Makurdi does not come

under the influence of the cold dry harmattan wind much instead, the experience is limited to about two month unlike other upper parts of the north where it can be on for four to five months or in some cases even more. Makurdi has a maximum temperature range of between 95° and 100°F with a daily means between 24°F and 28°F. The humidity is between 56% and 60% (mean annual).with a monthly between 30% and 40%. It has an annual rainfall of between 40-60 inches with a result of the wide difference between the maximum temperatures of the day and the mean the day periods are always very hot while the nights are cold. This is further worsened by the effect of water breezes from River Benue that blows out warm air to the adjacent land mass. The relevance of this section to the study can not be far fetched. This is because the climatic type can go to influence the type of construction material and the layout pattern of the market stalls. Hence the climate will be a guide to such proposals.

2.12. Economic Base of Makurdi:

Makurdi is situated in the agricultural plains of River Benue. As a result, of this location, agriculture forms the dominant occupation around the area and in fact through out the whole Benue State. The following form the major agricultural produce in the area: yam, beniseed, soya beans, rice, maize, cassava, citrus fruits, millet and vegetable. Apart from the location of the town that puts it at a focal point for easy accessibility because of the convergence of the various transportation routes, it is also the state Headquarters of Benue State, thus making it the main Market Centre for the region. Hence its strategic location as a bridge way between the North and the East, its status as a state capital and access through water, land, rail and air are pointers to the high economic potentials of Makurdi.

2.13. Historical Development of Markets in Makurdi:

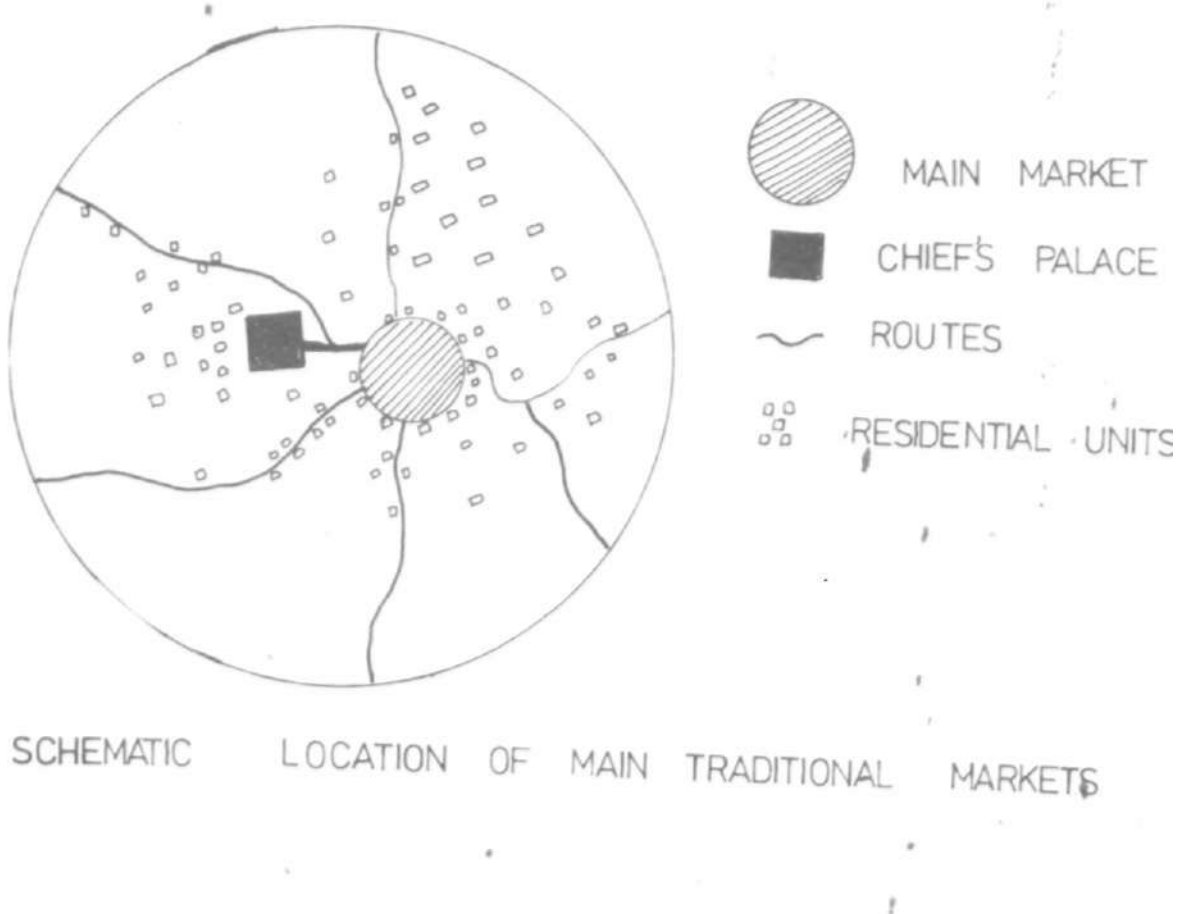
Makurdi Main Market started where one of the present sub-markets called Wadikpo is located. This is because the settlement that made up the town was at that site. The settlement which is now known as Makurdi was then known as Kpan after the name of the Chief or Village Head. Trading then was mainly in fish and cattle from the upper north that were brought by the Hausa-Fulani traders. Each time the people were around for trading the chief was fed [illegible] them free showing hospitality to strangers. Because of the constant kindness of Kpan to the cattle traders, it was thought that the man was excessively rich and as a result they started calling him 'Maikudi' in Hausa meaning rich man. As a result the name of the settlement had to change after the new name of the chief thus the name of the town changed from Kpan to Mai Kudi.[2] This was later modified to what is now called Makurdi by the colonial administrators. Hence the town arrived at its present name from the market which is a pointer to the fact that Makurdi has been a trading centre.

As a result of the expansion in trading activities, and with the completion of the first Benue bridge in 1932, the town became a very important connecting point between the Northern block and the South for cattle traders, lorries and train. With this boost, the market facilities had to be expanded and since most of the goods were coming through the river trading activities started developing right on the bank. At this new site enough space was acquired which slopes gently towards the river. Apart from the favourable site, it is located within the fastest growing residential area making it not only accessible

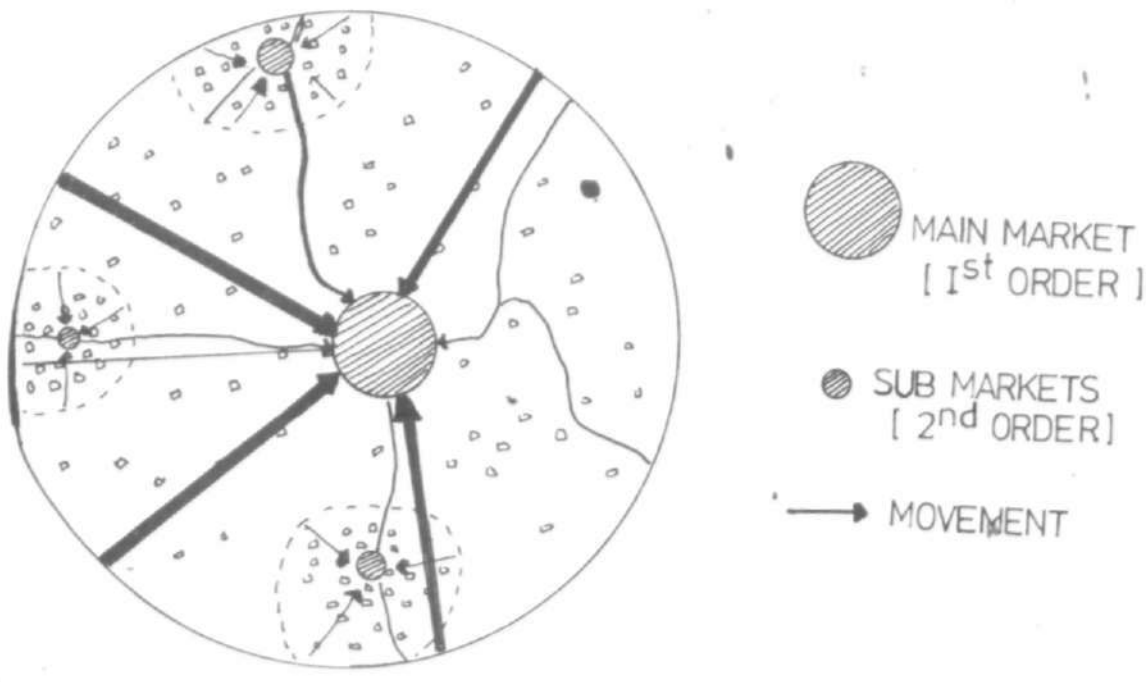
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2. Nonhwange, I.I. Unpublished B.A. Geography Project.

to the traders who come through water from outside but also to the residents of the town. Hence the development of the present Main Market started. With the arrival of steam-boats in the late 1930's that brought bulky materials, the site increased in importance since it was economically necessary to trade right at the river bank.



(fig 3.01) SCHEMATIC LOCATION OF MAIN TRADITIONAL MARKETS



(fig 3.02) SCHEMATIC REPRESENTION OF HIERARCHY & SPATIAL LOCATION OF MARKETS

CHAPTER THREE

3.00. PHYSICAL PLANNING CHARACTERISTICS OF MARKETS IN NIGERIA

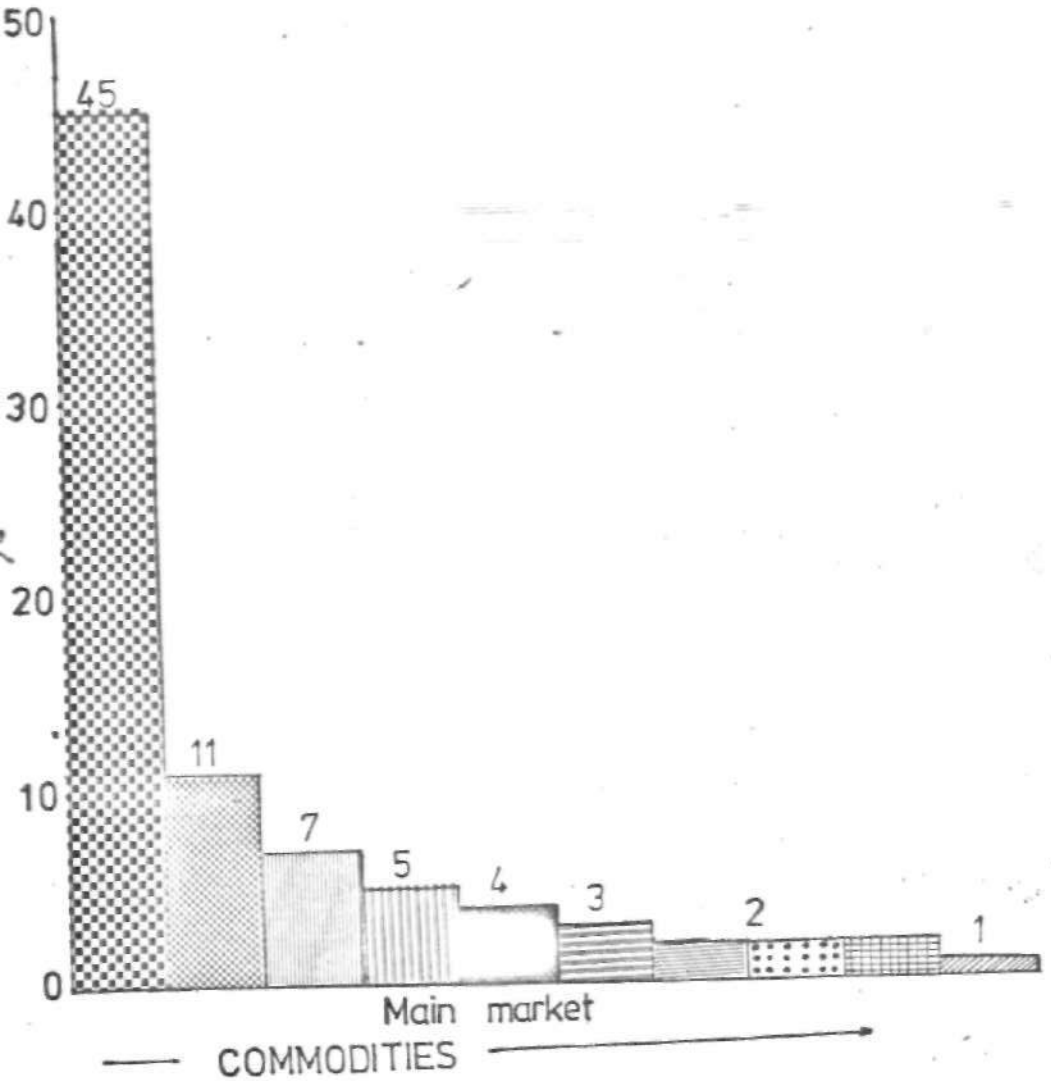
3.01. Location:

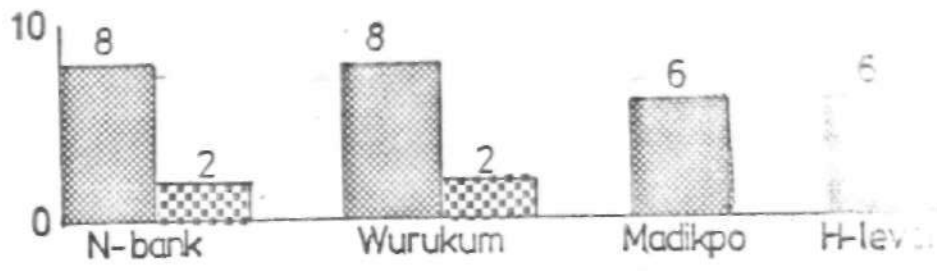
As already highlighted under the introduction to the study, the location of main traditional markets is at the core of the town; either in front of the Oba's Palace as in Yoruba areas of the country; and although a little bit remote from the Emir's Palace as in Hausa-Fulani set up it is still close forming the core of the city. (Fig. 3.01). In other areas of the country, Main Markets are also found to be located at the centre of the settlements or towns. From this locational aspect of main markets, accessibility is always the main influencial principle.

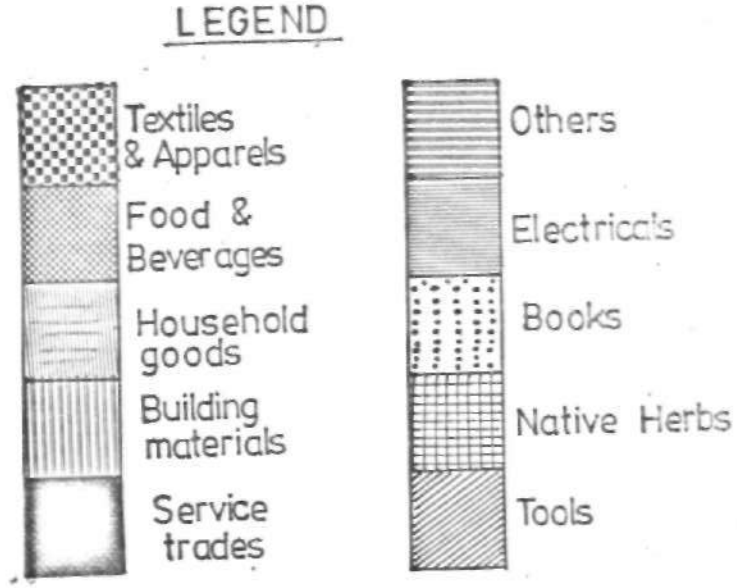
3.02. Spatial Location of Markets:

The main markets which form the hub of towns and the main economic activity centres sell all types of commodities; thus in essence, serving the whole town and even outside. Apart from the main market, sub-markets can also be identified and these are located within districts and neighbourhoods of the town. These other markets in most cases sell frequently needed commodities mostly foodstuff like soup ingredients, meat and grains. Hence they serve mainly their surrounding neighbourhoods. While the main serves the entire town and its environs. (Fig. 3.02). As a result of this relative importance of the markets, hierarchies are identified based on commodities sold, area of influence and site area coverage. On these bases the main market occupies the first order hierarchy while other lower ones could be second, third orders.

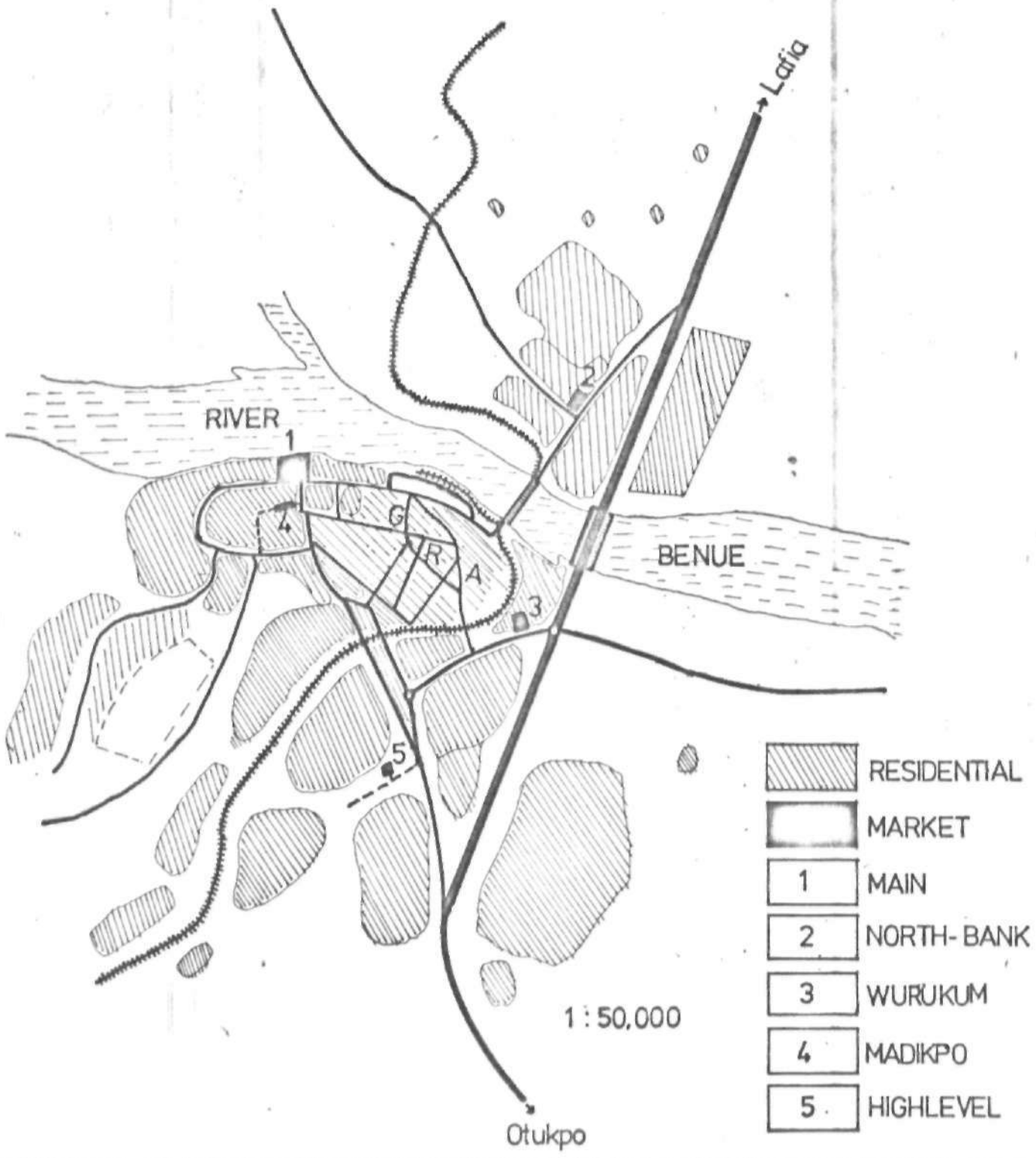
This hierarchies have been identified in Makurdi town. The main market which sells along with commodities sold in the other







(fig 3-03) BAR GRAPH SHOWING COMMODITY PURCHASES FROM MAKURDI MARKETS



(fig 3.04a)

EXISTING MARKETS AND RESIDENTIAL STRUCTURE OF MAKURDI

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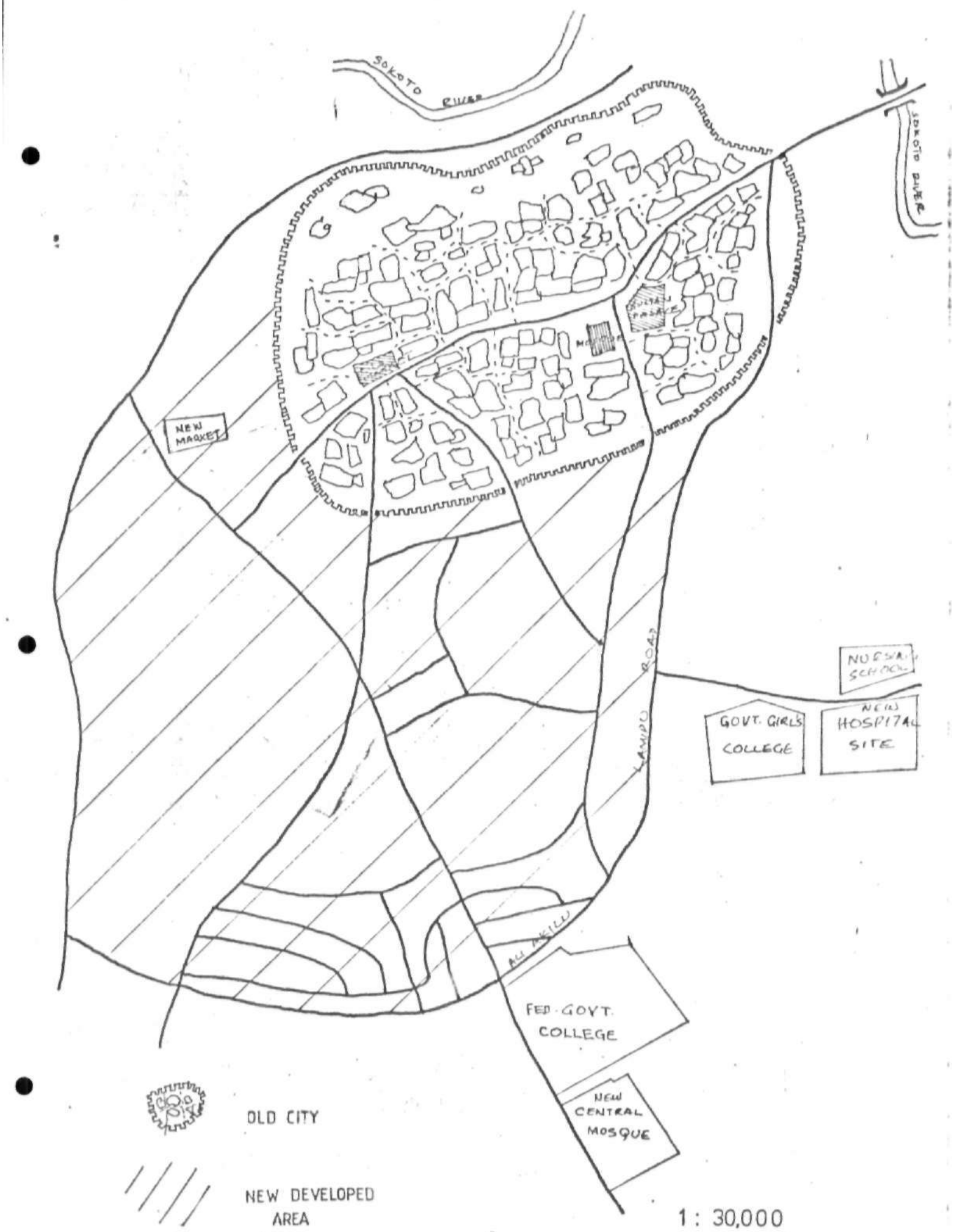
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SCALE

sub-markets, higher order goods like electronics, building materials, textiles and appeals and serves the entire town and outside; occupies larger site and accessible to all parts of the town from its central location, occipies the first order in the hierarchy. While the other district markets (North Bank, Wurakum, High level and Madikpo) that sell foodstuff like soup ingredients, vegetable; serve fractions of the towns population and occupy smaller sites occupy the second order hierarchies. (Fig. 3.03 and 3.04).

In economic terms, the hierarchies exist because of two main reasons. On the supply side, different commercial functions have different conditions of thresholds and thus demand minimum trade areas of different sizes for their support: and on the demand side, consumers spend different proportions of their income on different goods and services thus purchasing them with different degress of frequency.

3.03. Social Functions of Markets in Nigeria:

Apart from the economic functions of markets, they perform social functions as well. One of the reasons of locating the main markets at the centre is for its dual roles as both economic and social functions they perform. The markets are sites of social meetings, conferences, and places of address by traditional rulers to their subjects. In modern times, such social roles of markets have been swallowed up by the expanding economic activities. That not withstanding though, markets still form meeting points of exchange of ideas from both urban and rural areas and also strong places of displaying the differences between rural and urban life styles. In physical planning terms though the market sites lacked conscious planning concept, they were such that they performed the dual functions of both economic and social functions. This was achieved because the



LOCATION OF SOKOTO CENTRAL MARKET

markets were simply open spaces without structures rather in most cases with trees that provided the shades.

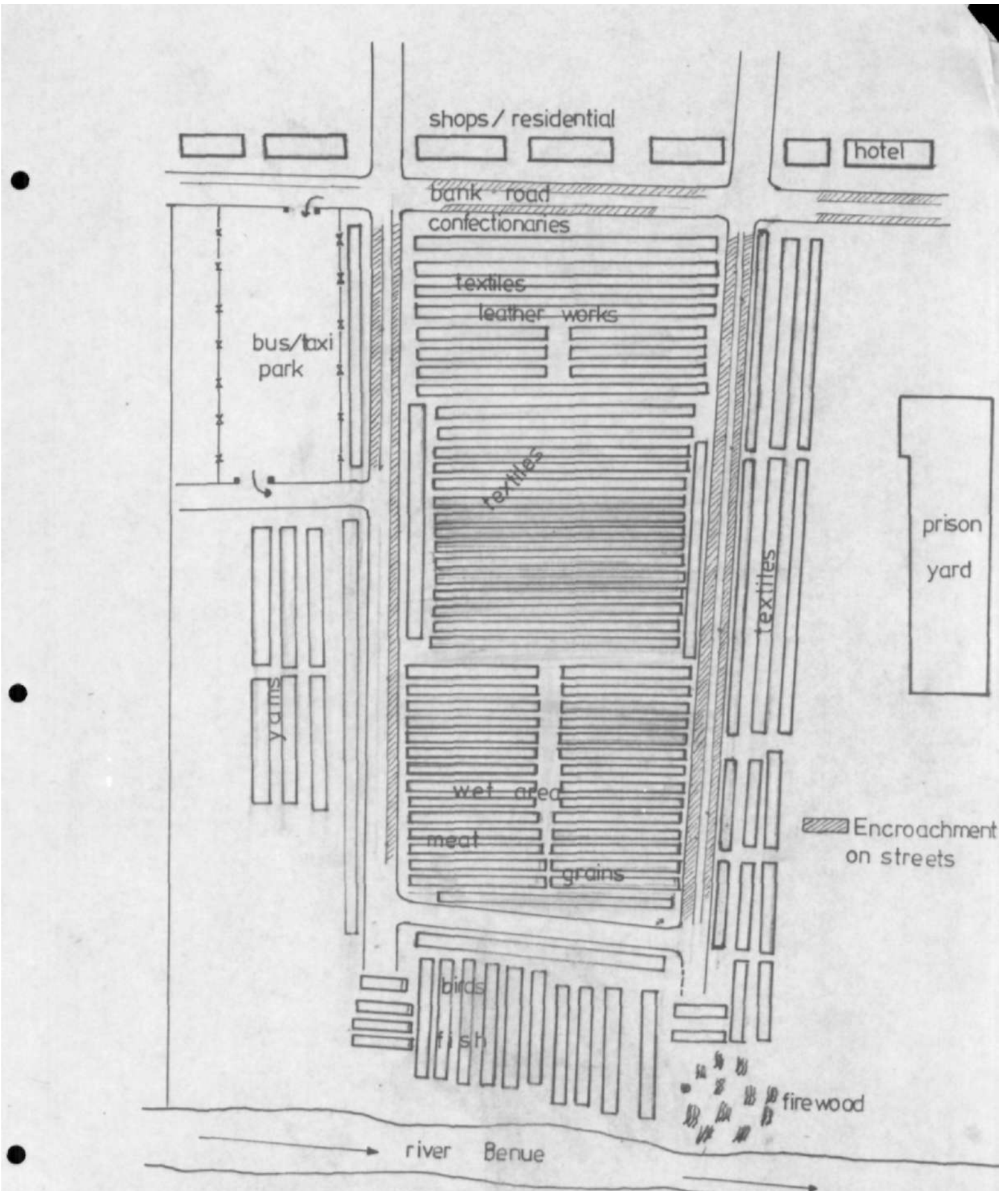
3.4. CASE STUDIES:

For the purpose of this study, only the Main Market of Makurdi is studied in terms of the physical planning characteristics along with Kaduna and Sokoto Central Markets. It has been chosen among other markets because it is the main traditional market and more over, the proposal will be for a main market.

3.04. Location:

Makurdi Main Market is located within the heart of the area that has the highest residential units. Thus centrally located in terms of accessitility. (Fig. 3.040). The major intra-urban roads coverage at the market making it very much accessible not only to the town but outside. Kaduna Central Market is also centrally located within the busiest part of the town. Although it is not directly on the major commercial road that runs through the town, it is located close to it and served by an access road from the major road (Ahmadu Bello Road). This location also makes it accessible to all parts of the town and outside.

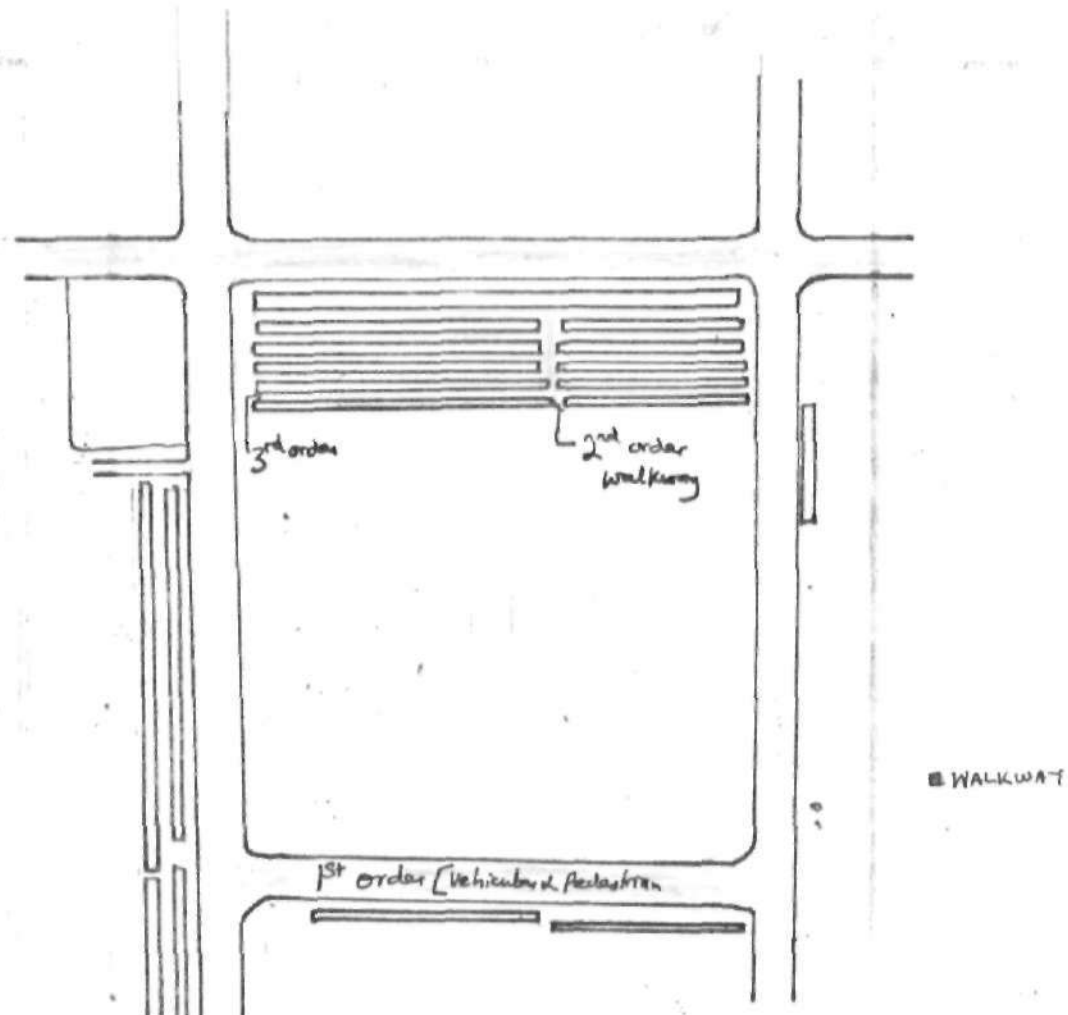
Sokoto Central Market is also located forming part of the commercial core of the town outside the City wall. It is also well served by access road that makes it accessible to both the inhabitants of the town and even people from Niger Republic. (Fig. 3.040).



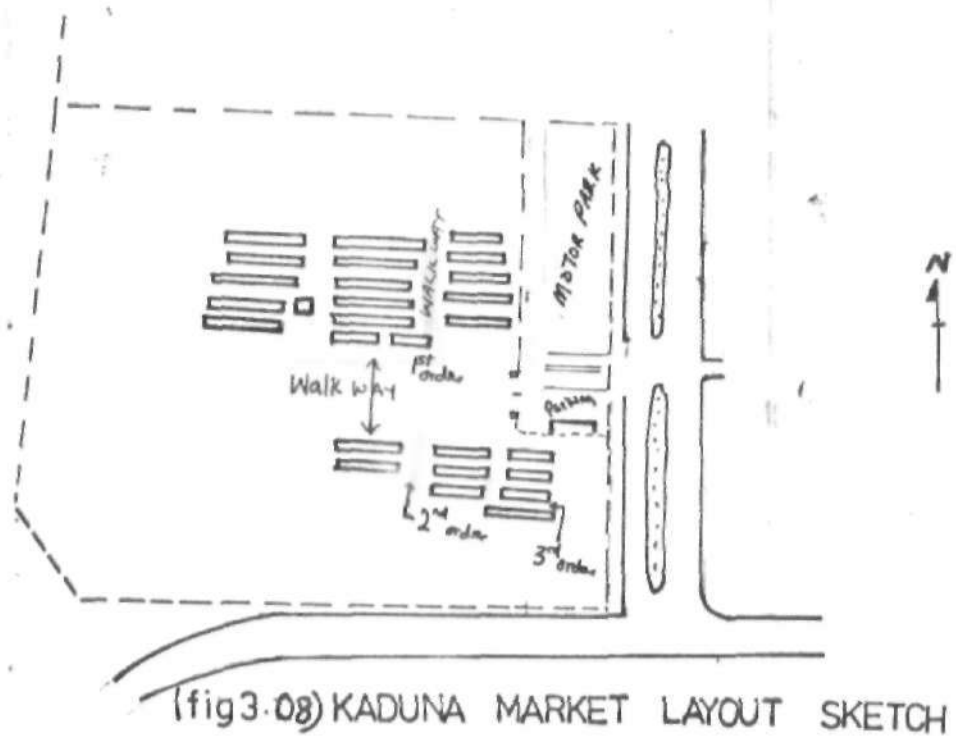
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(fig 3·05) GENERAL LAYOUT SKETCH OF MAKURDI MAIN MARKET

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(fig3.06) SKETCH OF MARURDI MARKET LAYOUT &CIRCULATION



(fig3.08) KADUNA MARKET LAYOUT SKETCH



Plate 3.1 Parking within market (none traffic segregation)



Plate 3.2 Showing temporary structures

3.05. Site Area Coverage:

Table 3.1

Markets	Site Coverage	Total Developed Area of Town	Percentage Coverage of Market
Makurdi	2.50 HA	4,000HA	0.063%
Kaduna	13.0HA	8,284HA	0.16%
Sokoto	20.24 HA	6,480HA	0.312%

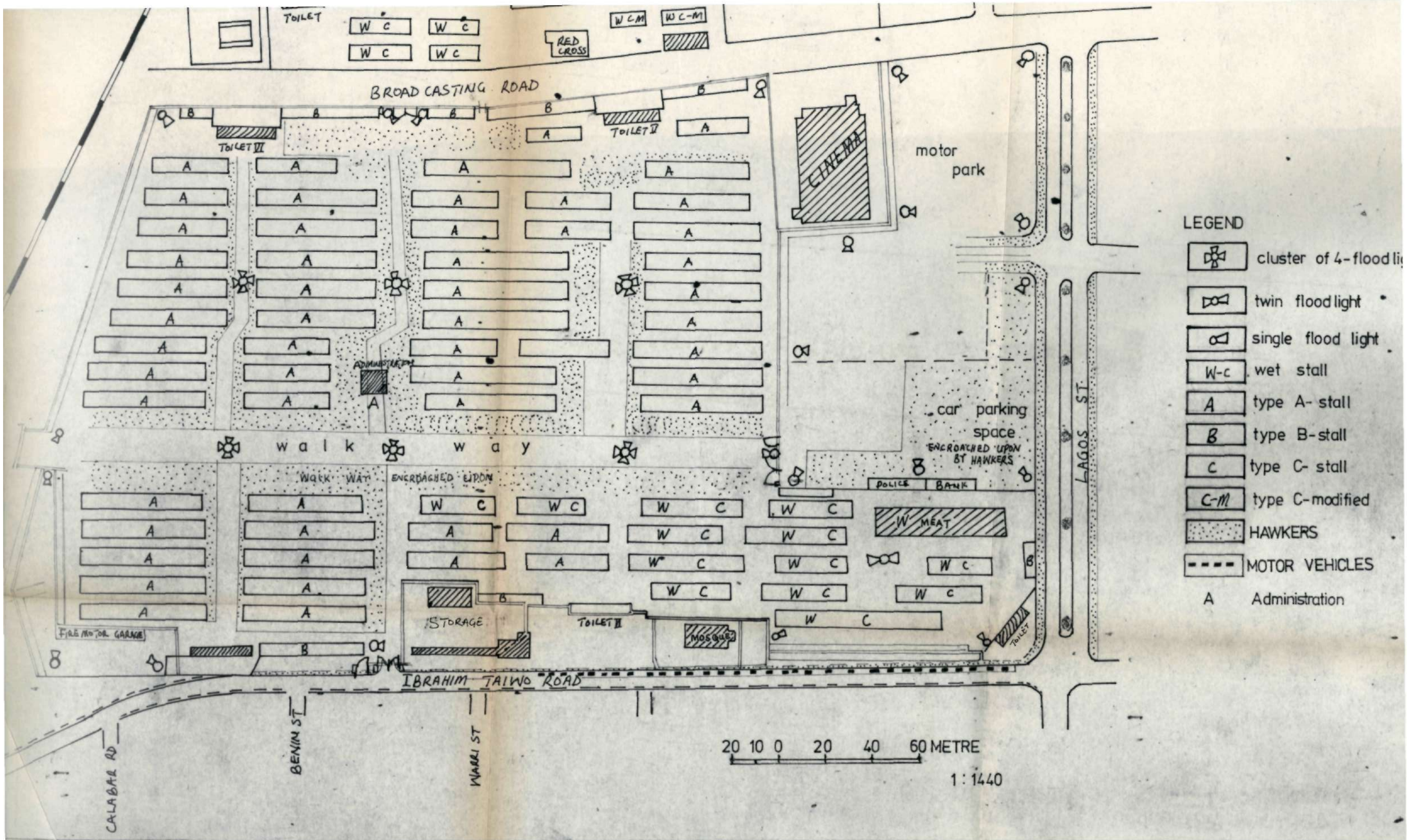
From the above table, showing comparison of site areas of the markets in relation to the developed areas of the respective towns, the site covered by Makurdi market is small (0.063%). The small site area is partly responsible for the congestion found in the market because there is no available space for expansion to cope with the expanding town as a result of urbanisation. Thus resulting in commercial taking upto 72% of the total market uses.

3.06. Comparative Analysis of Layout and Circulation Patterns Of The Markets:

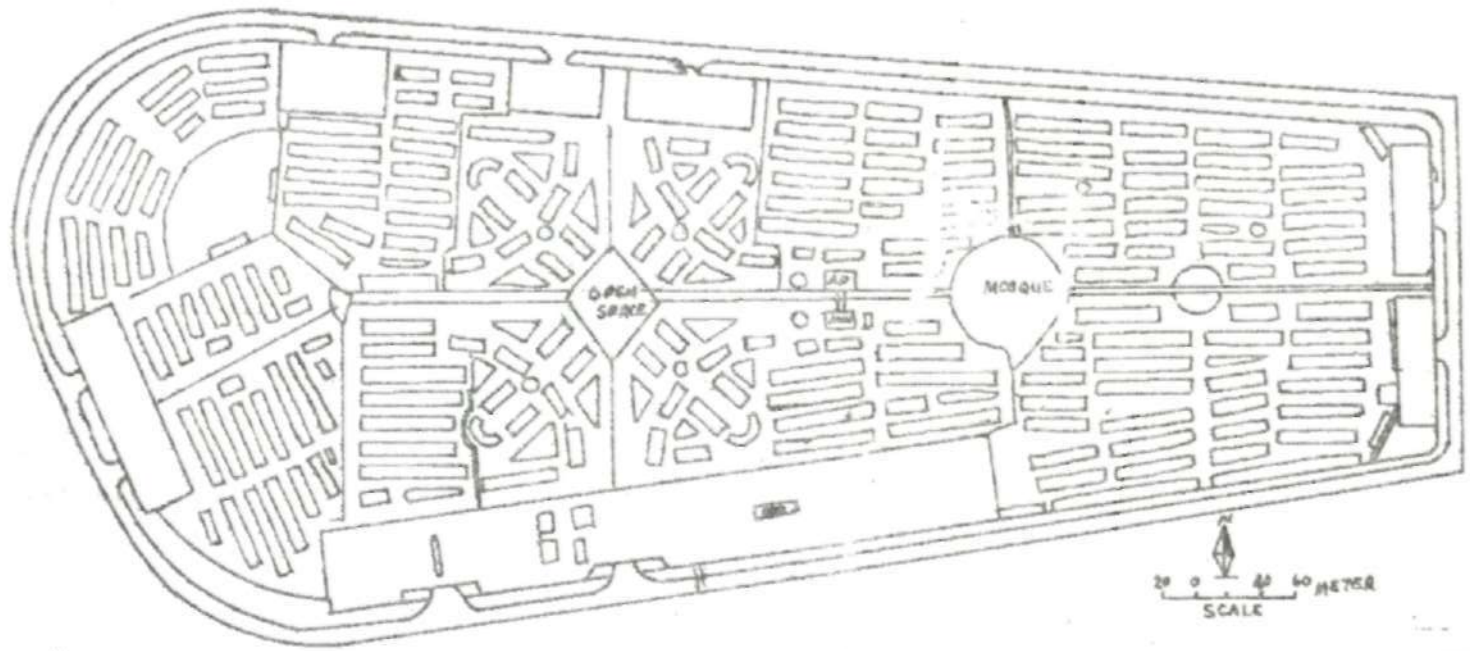
Markets	Layout Principles	Circulation Pattern
Makurdi Main Market	There is no segregation of vehicular and pedestrian traffic. Vehicular street runs through the market. The stalls are laid in rows of stall blocks with spaces between two blocks used for circulation. (Fig.3.05) Stalls are grouped into commodity zones mainly dry and wet. The wet zone is located down the slope towards the river for easy drainage.	No separation between vehicular and pedestrian traffic. The hierarchy of streets are: 11 metres the street that runs through andround the market; 6 metres in-between clusters and 1.22 metres between stall blocks. (Fig.3.05) and (Plate 3.1) for showing buss parked on street running through the market.

PLAN OF KADUNA CENTRAL MARKET

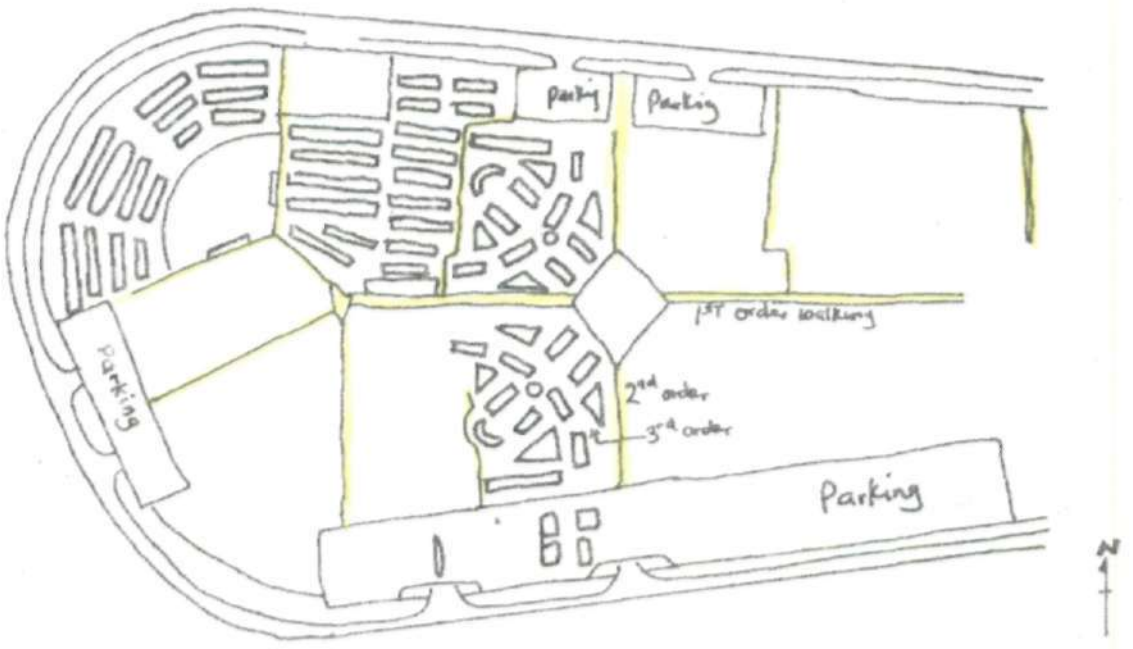
Source: Min. of Lands & Survey Kaduna State



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(Fig 3.09) PLAN OF SOKOTO CENTRAL MARKET [SOURCE: SLDA SOKOTO]



(fig 3.10) SKETCH OF LAYOUT & CIRCULATION PATTERN IN SOKOTO MARKET

Markets	Layout Principles	Circulation Pattern
Kaduna Central Market	Parking is at the periphery. Thus the commercial section is purely pedestrian. Stalls are laid in rows and arranged in long clusters. Public services like police and bank are located at periphery to ease the access to both traders and consumers. The wet commodities which are perishable goods and frequently needed at peripherally located for easy access. Administration is within the market centre for easy identification by both traders and consumers. (Fig. 3.07).	Parking, then pedestrian movement through gate. First in a wide walkway (30 metres), then (25 metres) that separate the clusters and (5 metres) in-between stalls. (Fig.3.08). As a result of encroachment 30 metres is reduced to between 25-10 metres, 25 metres reduced to 5-2 metres.
Sokoto Central Market	Vehicular traffic is separated from pedestrian. Parking at the periphery. Stalls are arranged in clusters with each cluster having a common space at the centre. The central axis is defined by the administration for easy identification and the big mosque which could serve as monumental feature. The public services are concentrated at the periphery around the major entrance because of the link between the uses and for easy identification and access to the people. (Fig.3.09). Stalls are also allocated to different commodities (Table 3.2) showing allocation of stalls by commodities in the three markets.	Parking is decentralised to reduce congestion at one gate. Movement is through the gates to the first order walkways (7-10 metres) then to the walkways that define the clusters (4 metres). The third order ways (6 metres) in-between stall blocks (Fig. 3.10) sketch showing the hierarchy of ways.

Table 3.2

Stall Allocation By Commodities

Markets	Dry Area	Wet Area	Grains	Poultry/ Fish	Tubers
Makurdi Main Market	50%	20%	10%	14%	6%
Kaduna Central Market	53%	21%	15%	8%	3%
Sokoto Central Market	51%	23%	12%	10%	4%
Average	51.3%	21.3%	12.3%	10.7%	4.3%

The dry area is made up of areas which deal with the sale of commodities like textiles and apparels, shoes and other leather materials, confectionaires and electricals.

The wet area of the market is the zone where items like vegetables, other soup ingredients, meat are sold. This area is so called because these commodities need and produce a lot of water within the zone.

From the table above, the main markets sell mostly higher other goods found within the dry zone taking an average of 52% of the total commercial allocation.

As a result of this observation, the area allocation to higher order goods that occupy the dry zone should be greater than areas allocated to any of the other commodities.

3.07. Land Use Pattern:

The land use pattern is one of the principal determinants which influences the functional efficiency of a market. The table below gives the existing land use structures of the markets.

Table 3.3

Land Use Structures

Uses	Makurdi Market	Kaduna Central Market Planned*	Kaduna Central Market Existing**	Sokoto Central Market
Commercial	72%	46.6%	60%	40%
Roads, Streets and Wallways	11.2%	29.54%	16.64%	21.0%
Utilities, Fire and Services	12.0%	24.8%	23.4%	22.26%
Residential	0.8%	-	-	-
Organised Open Spaces	-	-	-	16.5%
Total	100.0%	100.0%	100.0%	100.0%

*Planned - As proposed and can be seen on the market plan.

**Existing - Actual situation as it exist at present due to erection of temporary structures and encroachment by hawkers.

The reduction in the planned walkways and the parking spaces has brought about, the existing land use structure in Kaduna Central Market which is as a result of the encroachments on walkways and parking spaces by either the hawkers or the stall owners. (Fig. 3.07). (Table 3.4) shows the extent of encroachments in Makurdi Main Market and Kaduna Central Market.

Table 3.4

Encroachments in Makurdi Main Market and Kaduna Central Market

Markets	Size of Space Encroachments	
Makurdi	0.11HA	4.4%
Kaduna	1.4HA	10.4%

3.08. Analysis of Market Stalls:

The durability or permanency of stalls is a function of materials used for construction. The table below gives the analysis of the structures.

Table 3.5

Analysis of Market Structures

Markets	Number of Stalls	Distant Between Two Blocks	Setback	Stall Sizes
Makurdi	1,153	1.22metres	-	2 x 3m
Kaduna	2,148	5.0m	1.5m	4 x 3m 5 x 4
Sokoto	6,000	6.0m	1.5m	4 x 3 5 x 4



Plate 3·3. Heap of Refuse dump on Market street



Plate 3·4 Open and stagnant drain within Market

Markets	Lockable	Open Stalls	Walls	Roofing Material
Makurdi	52%	48%	Zinc = 60% Plank = 30% Wood-stand = 10%	Zinc = 95% Grass = 5%
Kaduna	76%	24%	Con-crete =100%	Asbestos=100%
Sokoto	75%	25%	Con-crete =100%	Asbestos=100%
Average of Kaduna and Sokto	75.5%	24.5%		

From the table, Makurdi market is made up of mostly temporary structures that are susceptible to fire hazards. (Plate 3.2).*

3.09. Facilities, Services and Utilities at the Markets:

The provision of facilities and services is one of the major factors that affect the environmental quality of a market. The table below shows the facility provision in the three markets.

Table 3.6

Utilities, Facilities and Services

Elements	Makurdi Market	Kaduna Market	Sokoto Market	Average of Kaduna and Sokoto
Parking	Bus and Taxi Spaces 1/10 Stalls	1/3 Stalls	1/15 Stalls	1/9 stalls
	Car Park -	1/4 Stalls	1/9 Stalls	1/6.5 Stalls
Toilet	-	1/46 Stalls	1/46 Stalls	1/46 Stalls

*Permanent Stalls = Stalls constructed of concrete cement blocks and either roofed with asbestos or iron sheet.
Temporary Stalls = Constructed with iron sheets or woodstands with thatched roof such as a zinc.

Table 3.6 Ends

Elements	Market Market	Kaduna Market	Sokoto Market	Average of Kaduna and Sokoto
Water Taps	1	1/50 Stalls	1/45 Stalls	1/47.5 Stalls
Refuse Receptable	-	1/19 Stalls	1/14 Stalls	1/16.5 Stalls
Drainage	Open Drain	Covered Drain	Covered Drain	-
Telephone	-	Limited to Administration and public service areas like police.	As in Kaduna	-
Electricity	-	Flood lights	Flood lights	-
Workshop	-	1	1	1
Fire Station	-	1	1	1
Police Post	-	1	1	1
Post Office	-	1	1	1
Bank	-	1	1	1
Information Unit	-	1	1	1
Clinic	-	-	1	1
Mosque	-	1	1	1
Area Court	-	-	1	1

The table above shows Makurdi Market lacks car parking spaces which results in curb and on the street parking. Lack of refuse receptacles in the market has resulted into dumping of refuse on the market street. (Plate 3.3). The Plate shows the heap of refuse on the street that passes through the market. There is also lack of proper drainage in the market thus resulting into stagnant water exposure within

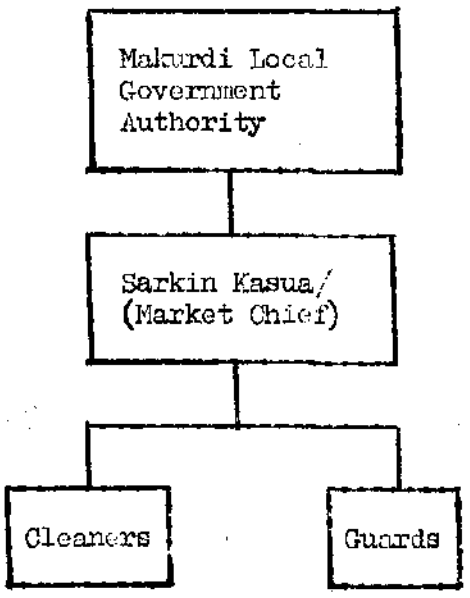
the market. (Plate 3.4) and lack of open spaces. Generally, Makurdi Main Market has a poor environmental sanitation.

3.10. Administration and Management Structures:

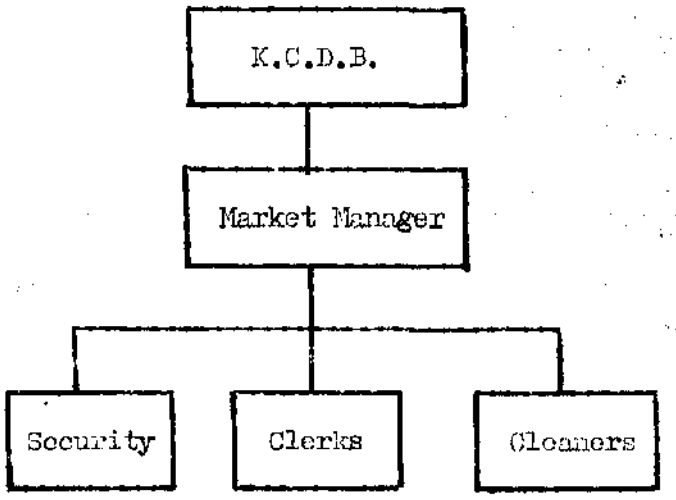
This section actually does not belong to the physical planning aspect. However the overall implementation and the performance of the physical planning system depends to a large extent on the managerial control. Thus the administrative system look after the day to day performance and the control of the various components proposed and intograted in the overall design work. Hence physical planning and ad inistration can hardly be separated.

Each of the three markets has an administrative set up as follows:

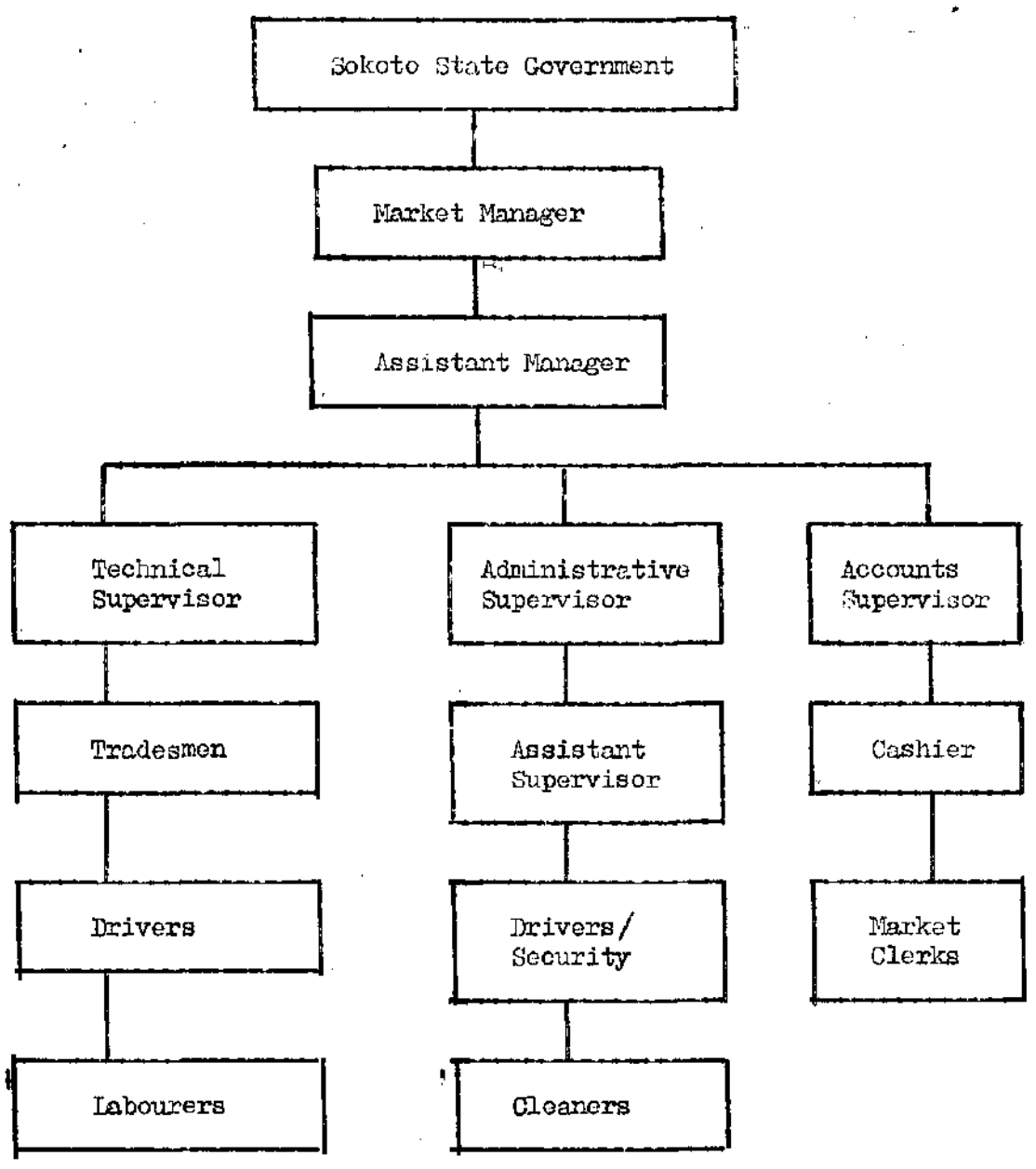
(a) Makurdi:



(b) Kaduna Central Market:



Sokoto Central Market



The effective coverage of the stalls by both security men and cleaners is shown in the table below.

Market	Security Guards	Cleaners
Makurdi	1/115 Stalls	1/100 Stalls
Kaduna	1/100 Stalls	1/70 Stalls
Sokoto	1/20 Stalls	1/52 Stalls
Average of Kaduna and Sokoto	1/60 Stalls	1/61 Stalls

The low coverage of stalls by the cleaners in Makurdi Market is partly responsible for the irregular and inefficient clearance of the heaps of refuse found on market streets.

The administrative set up of Sokoto market appears more comprehensive thus giving room for a division of labour which will improve the overall performance of the system. However there is duplication of responsibilities in some aspects, which should be minimised to beat down cost.

3.11. Identification of Planning Problems and Principles:

From the analysis of the study conducted inferences as to the planning problems have been drawn as follows:

1. The area coverage of Makurdi Main Market is small relative to the total developed area of the town and compared to other two main markets of Kaduna and Sokoto. (Table 3.1). As a result there is no room for expansion to cope up with the expansion of the town and its economic needs. This has resulted into extreme congestion of the market.

2. Lack of clear segreation between vehicular and pedestrian traffic in Makurdi market. This has resulted into a conflict in use since the market street is used by both traffics thus posing danger to the people. (Plate 3.1).
3. Makurdi market lacks car parking space thus resulting into curb and on the street parking blocking the free flow of traffic in and around the market. (Plate 3.1).
4. There is also lack of utilities, facilities and basic public services which has resulted into in hygienic environmental sanitation as can be seen from the heap of refuse dump and open drain within the market. (Plates 3.2 and 3.4).
5. There is also the problem of inadequacy of stall size as shown from the measurement and the feelings of the traders; (2 x 3m); bad construction materials that are not durable, lack of enough space between two blocks of stalls and total lack of open spaces within the market. All these result into the poor quality of the environment and congestion thereby exposing to fire hazards.
6. Also identified is the problem associated with the provision of wide walkways which are later encroached upon by both hawkers and stall owners as evident in Kaduna market. (Fig. 3.07).
7. The lack of provision of space for hawkers has resulted into their encroaching not only an wal.-

ways but parking spaces; being an inference from Kaduna Central Market as well.

The planning principles are also identified from the study of the three markets. Such principles are as follows:

1. The first principle identified is from the central location of the main markets to the residential areas and the access through roads. Thus the major planning principle here is accessibility to the people.
2. The principle of segregation of vehicular and pedestrian traffics thereby creating easy and free movement of people within the market.
3. The zoning of commodities within the commercial area as a principle allows for easy identification and access to the type of commodity needed and also encourages the traders of similar goods to discuss common problems.
4. The provision of walkways that direct and guide pedestrian movement.
5. Decentralization of parking spaces in Sokoto Central Market reduces the traffic that would have converged at one gate if one parking is available. It also allows the customer to park close to the purchasing zone.
6. The central location of administration is to make it accessible to traders and customers at all times. It also serves as monumental structure along with the mosque.

7. The open spaces create breathing spaces within the market and allows for that proper ventilation and also breaks the monotony of having to pass continuely through block of stalls.

3.12. Derivation of Spatial Standards:

On the basis of comparative study of the three markets and the identification of planning problems and principles, spatial standards have been identified. These standards are meant to be guides towards the proposed standards for the market design. Thus the derivation has been done through the finding of averages between standard identified in Kaduna and Sokoto Central Markets.

(a) The location of a main market should be central with respect to the settlement pattern into ease accessibility if financially convenient.

(b) Site Coverage: The standard for site area coverage depend upon the status of the market, population to be served thus such standard cannot be rigid. The average site coverage for Kaduna and Sokoto Central Markets is 0.24 percent.

(c) Walkways:

	Kaduna Market	Sokoto Market	Average
First Order Walkway	30m	10m	20m
Second Order Walkway	25-10m	4m	10-7m
Third Order Walkway	5	6m	5.5m

Because of the problem of encroachment on wide walkways as evident in Kaduna market, the walkway should be reduced in width to below 20 metres thereby providing it at pedestrian scale instead of attracting hawkers by providing a wide walkways.

(d) Land Use Structure:

For the land use the standards are derived from the average of the planned land use patterns; the existing land use in Kaduna market and the planned structure. Thus taken the average from three measurements in two markets.

Table 3.7

Land Use Structures

Land Use	Kaduna Market		Sokoto Market	Average
	Planning	Existing		
Commercial	46.6%	60%	40%	48.9%
Roads, Streets and Walkways	29.54%	16.64%	21.0%	22.4%
Utilities, Facilities and Services	24.8%	23.4%	22.26%	23.5%
Organised Open Spaces	-	-	16.5%	16.5%

The averages will be the guide to the proposal of land use standards.

(e) Stall Allocation to Various Commodities:

Table 3.8

	Dry Zone	Wet Zone	Grains	Poultry	Tubers
Kaduna Market	53%	21%	15%	8%	3%
Sokoto Market	51%	23%	12%	10%	4%
Average	52%	22%	13.5%	9%	3.5%

Although the average look rational, the allocation should be guided by commodities produced in an environment and the principle of need.

(f) Analysis of Market Layout and Structures:

Figure 3.8	Distant Between Two Blocks	Setback	Stall Sizes	Lock Up Stalls	Open Stall	Const. Roofing mat.
Kaduna Market	5.0m	1.5m	4 x 3m 5 x 4m	76%	24%	Con- crete Asbestos
Sokoto Market	6.0m	1.5m	4 x 3m 5 x 4m	75%	25%	" "
Average	5.5m	1.5m	4 x 3m	75.5%	24.5%	" "
Recommend-ation	5.6m	1.5-2m		70%	30%	" "

The sizes of stalls should consider the commodities available within the market. Hence the zoning should guide as to the size of stalls.

(g) Identified Standards for Utilities, Facilities and Services:

Table 3.9

	Kaduna Market	Sokoto Market	Average	Recommended
Toilet	1/46 Stalls	1/46 Stalls	1/46 Stalls	1/46 Stalls
Water Tap	1/50 Stalls	1/45 Stalls	1/47.5 Stalls	1/45 Stalls
Refuse Receptacle	1/19 Stalls	1/14 Stalls	1/16 Stalls	1/16 Stalls
Parking Space for General Motor Park	1/3 Stalls	1/15 Stalls	1/9 Stalls	1/10 Stalls
Parking Space for Car Park	1/4 Stalls	1/9 Stalls	1/6.5 Stalls	1/10 Stalls

The following services will be provided: Post post, Post Office or Agency, Bank, Workshop, Telephone and electricity as identified from both Kaduna and Sokoto Central Markets.

(h) Administration and Management:

From the administrative and managerial set up of both Kaduna and Sokoto Central Markets standards for the coverage of stalls by security guard and cleaners have been identified (Table 3.6) referred. For the effective and efficient coverage of the stalls, it is recommended that coverage should be more than the identified average. For security coverage it should be 1/40 stalls while cleaners should be 1/30 stalls.

CHAPTER FOUR

4.00. PLANNING PROPOSALS

From the previous [illegible] analysis in Chapter Three, planing problems have been identified in Makurdi main traditional market. Also planning concepts and principles were identified from the study of Kaduna and Sokoto Central Markets. On the basis of the study vis-a-vis the need for a main modern market for Makurdi, planning proposals have be made for the new main market. The proposals are based on the following objectives which are guided by the identified planning problems and principles:

(1) The first objective is to propose an accessible and adequate site for the market that will cater for the projected population of 18,6060 by 1992 from the master plan.

(2) To propose a comprehensive but rational land use structure for the market.

(3) To propose and adequate market structure.

(4) To propose adequate utilities, facilities and services.

(5) To propose a market environment that is hygienically condusive to both traders and consumers and

(6) To propose a market free of vehicular and pedestrian traffic conflict.

4.01. Schedule of Requirements:

Table 4.1

Site Area Coverage By Market Status

Status of Market	Site Area (HA)	Percentage Coverage By Commerce	Population
Minor Market	4.94 - 12.36	30 - 35	10,000 - 20,000
Major Market	12.36- 49.42	25 - 30	50,000 and above.
Regional Market	49.42	20 - 25	

Source: Anatomy of Traditional Markets in Nigeria - Vagale (Ed.), 1972.

From the categories of markets in the above table Makurdi Main Market falls within a major market status since the town apart from being the state headquarters that is experiencing rapid urbanisation as a result of immigration, is also a main collecting centre for the commodities. On this basis 30 hectares of land has been proposed. This is because by 1992 the population of the town alone must have got to 186,060. The much proposal is also to allow enough area for the market that will curb immediate congestion in the market.

4.01(a). Land Use Schedule and Proposal:

Table 4.2

Comparative Land Use Analysis and Proposals

Land Use Land Use	% Of Land Use in Makurdi Market	Existing Land Use % in Kaduna Market	Sokoto Market %	Standards By Vagale % *	Proposal
1. Stall	72	60	40	30-40	52
2. Streets, Walk-way and road.	11.2	16.64	21	20-22	16
3. Utilities, facilities and services	12.0	23.4	22.26	10-15	18
4. Organised open space	-	-	16.5	15-20	10
5. Others	-	-	-	10.12	-
6. Hawkers, space and open air trading	-	-	-	-	4
7. Residential	0.8	-	-	-	-

*Source: Anatomy of Traditional Markets in Nigeria - Vagale (Ed.), 1972.

The land use of a market is one of the principal factors that determine its overall performance. The previous proposals by former authors did not provide for hawkers which is one of the reasons why special problem of hawkers is eminent in the existing markets. And a way of solving such problems is through the provision made here. In the proposal higher percentage has been given to commercial use at the expense of walkways. This is as a result of the experience in Kaduna Central Market where wide wallways up to 30 metres is provided and greater portion has been encroached upon by stall owners

and hawkers. (Fig. 3.07). Sites within the market have also been proposed to be allocated to hawkers who wish to sell in the market instead of being allowed to move about and blocking the free flow of pedestrian movement. This proposal will go to solve the problem of hawkers encroaching on any space. The proposal for an open air trading site is in recognition of the fact that some traders prefer trading in the open rather than in a stall. This is very condusive more so that Makurdi has a very hot tropical climate almost throughout the year.

Organized open spaces have been minimized to reduce the incident of misuse. Also, it will not give room to excess open spaces that will not be put to use. Thus it is also one way of controlling hawkers encroachments.

4.01(b). Schedule for Facilities, Utilities and Services:

Table 4.3

Elements	Number	Area Allocated	Proposed Number	Proposed Area Allocation
Parking	45lots/ HA of market	5.5 x 2.5m	1/9 stalls	5 x 3m
Fire Post	1	13 x 15m	1	13 x 15
Toilet	1/30 Stalls	1 x 2m/1	1/46 Stalls	2 x 3m/1
Water Taps	1/100 Stalls	1sq.m/1	1/90 Stalls	1sq. m/1
Refuse receptacle	1/32 st Stalls	-	1/16 Stalls	-
Police Post	1	10 x 10m	1	10 x 10m
Post Office	1	13 x 15m	1	13 x 15m

Table 4.3 Ends

Elements	Number*	Area Allocation	Proposed Number	Proposed Area Allocation
Bank	1	10x10m	1	13x15m
Information	-	-	1	13x15m
Mosque	1	13x15m	2	15x10m
Clinic	1	7x15m	1	10x10m
Administration	1	17x15m	1	15x30m
Workshop	1	20x30m	1	20x30m
Restaurant	1/1000	5x10/1	1/1000	10x15/1
Electricity	-	-	Flood lights	
Telephone	-	-		
Drinage	Covered type		Covered type	

*Source: Proposed for the renewal of Kurmi Market by Kabir (1977).

The proposed telephone should serve the administration block, public services like police, bank, information, fire and post office. Alon with these four public telephone booths each at a major gate from the park. From the table, five restaurants are proposed, 100 toilets, 52 water taps and 290 refuse receptacles. The distribution of the refuse receptacle should also depend on commodity areas. Such areas like the wet zone where more garbages are collected should have more.

for the market. The proposed concrete cement block is to increase the durability of the stalls. It is best to use grass for the roofing considering the high temperature of the town, but for durability and to reduce susceptibility to fire hazards, asbestos has been proposed in place of grass. It also replaces iron sheet (zinc) because it emits a lot of heat.

4.02. Site Selection and Analysis:

The selection of site for any commercial purpose is one of the important factors that determine its effective use. Markets have been abandoned because of bad locations such as isolation of the market from the residential areas. An example is the new market at Lokoja which has never be used because of its location off the residential area. The standard maximum distance from a residential area to the market range between 3.22 to 6.44 kilometres for a population of 50,000 and above.

As a result of the importance of location such a project, two alternatives are considered. The first alternative what is designated alternative I (Fig. 4.01) is within the City Centre as proposed by the Master Plan prepared by T. Kotzi. The site has the following advantages:

(a) It has a central location within the residential areas since the maximum distance of travel from all residential unit within the town will not exceed 6.44 kilometres.

(b) It is close to a major high way and well served by a major access road as proposed by the Master Plan. This will increase its accessibility to both residents of the town and outsiders.

(c) It will be integrated within the City Centre.

Despite these advantage of this site, it has its own disadvantages of having to pay compensation for the existing structures already around the site.

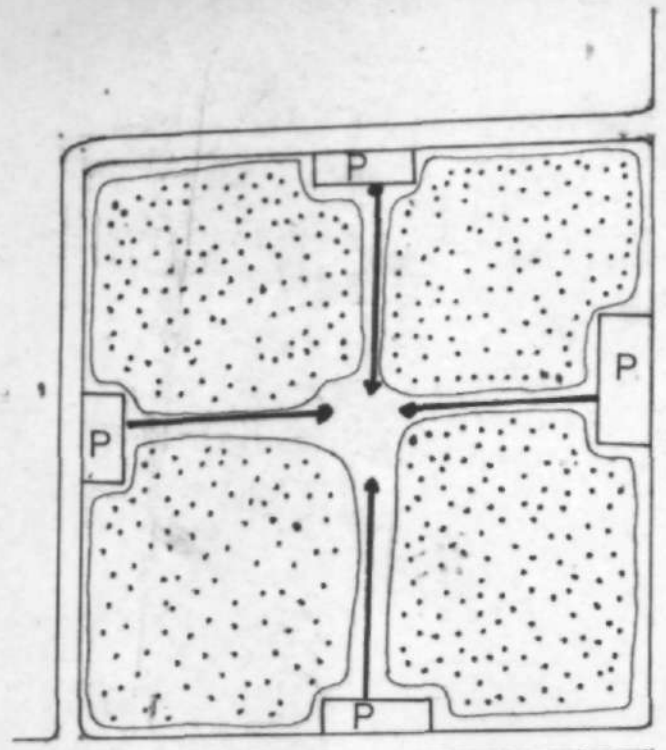
Alternative II (Fig. 4.01) has been proposed by the state government. The advantage of this site is its closeness to the proposed railway station which will ease the movement of bulky materials from the station to the market. The second advantage is the payment of little or no compensation for the site if acquired since there are no structural developments coming up within the site at present. This site has the disadvantage of remoteness from the bulk of the residential areas. This is because it is to one end of the town. It will lack integration with other central uses. Thus has poor accessibility.

From the consideration of advantages and disadvantages of each alternative site, and considering the fact that the market is suppose to serve mainly the town, the first alternative within the City centre is adopted because of its better location and accessibility. There should be a policy to stop further developments that do not conform with the city centre uses within the area proposed for the city centre.

4.03. Site Analysis:

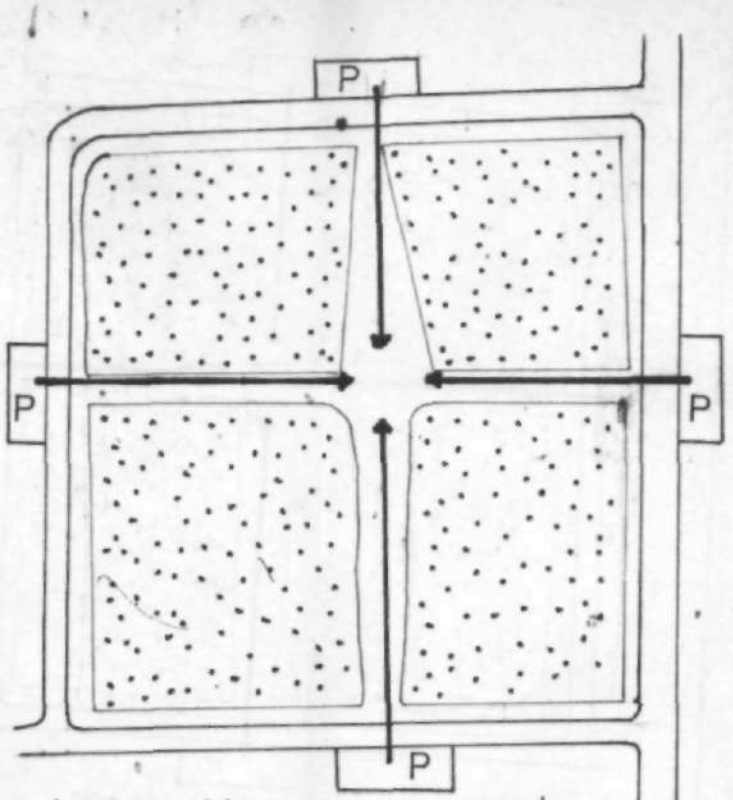
The site has a gently rolling topography sloping towards the south-western end. It is also characterised by tree species of the southern guinea savannah type like Isoberlinia dokii, Tomentosa and Locust been trees. The common grasses are mainly the species of hyperhenia. The soil is loom sandy of sedimentary type of rock characteristic of river basins. It is drained by the

SKETCHES OF CONCEPTS OF TRANSPORTATION & PEDESTRIANIS



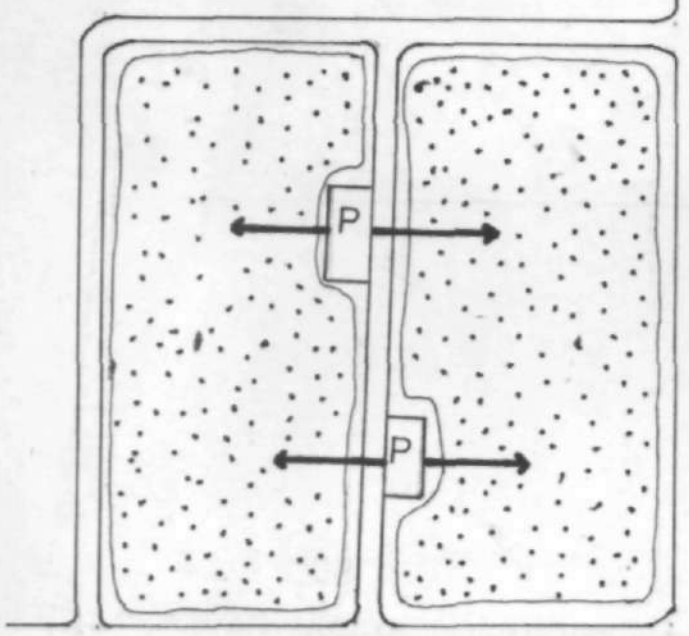
(I) parking at periphery within market

fig 4·03



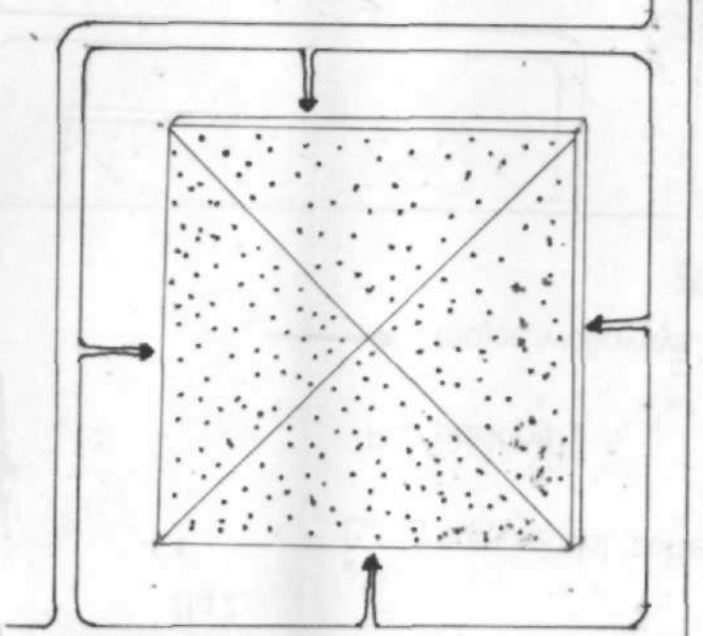
(II) parking across roads movement across road

fig 4.04



(III) vehicular traffic within market

fig 4·05



(IV) parking below market

fig 4.06



commercial zone

P— parking

major walkways

River Benue through a smaller tributary that runs close to the south western end of the site. There are not vision blocking features. (Fig. 4.02).

4.04. Alternative Concepts for the Design Proposal:

The general concept is that of transportation and pedestrianisation. The transportation aspect ends at the parking spaces after which pedestrian movement starts from the gate into the commercial section of the market. As a result of this idea alternative concepts have been proposed.

Alternative I - In this alternative, parking is at the periphery within the market after which movement of pedestrians starts throug the gates into the commercial zone. Here there is complete segregation of vehicular and pedestrian traffics. (Fig. 4.03). This conforms with the general principle of safety to the pedestrians.

Alternative II - In this alternative, parking is across the vehicular roads. (Fig. 4.04). Thus people park and cross the road before entering the commercial sections of the market. Here, there has been a contradiction of the basic principle of safety to the pedestrian and the segregation of traffics.

Alternative III - In this alternative, there is a motorable road passing through the market as the situation in Makurdi Market. Parking is at the sides of the road that passes through the market. (Fig. 4.05). This does not guarantee pedestrian safety thus contradicting the basic principle of safety.

Alternative IV - Parking is below the commercial platform. (Fig. 4.06).

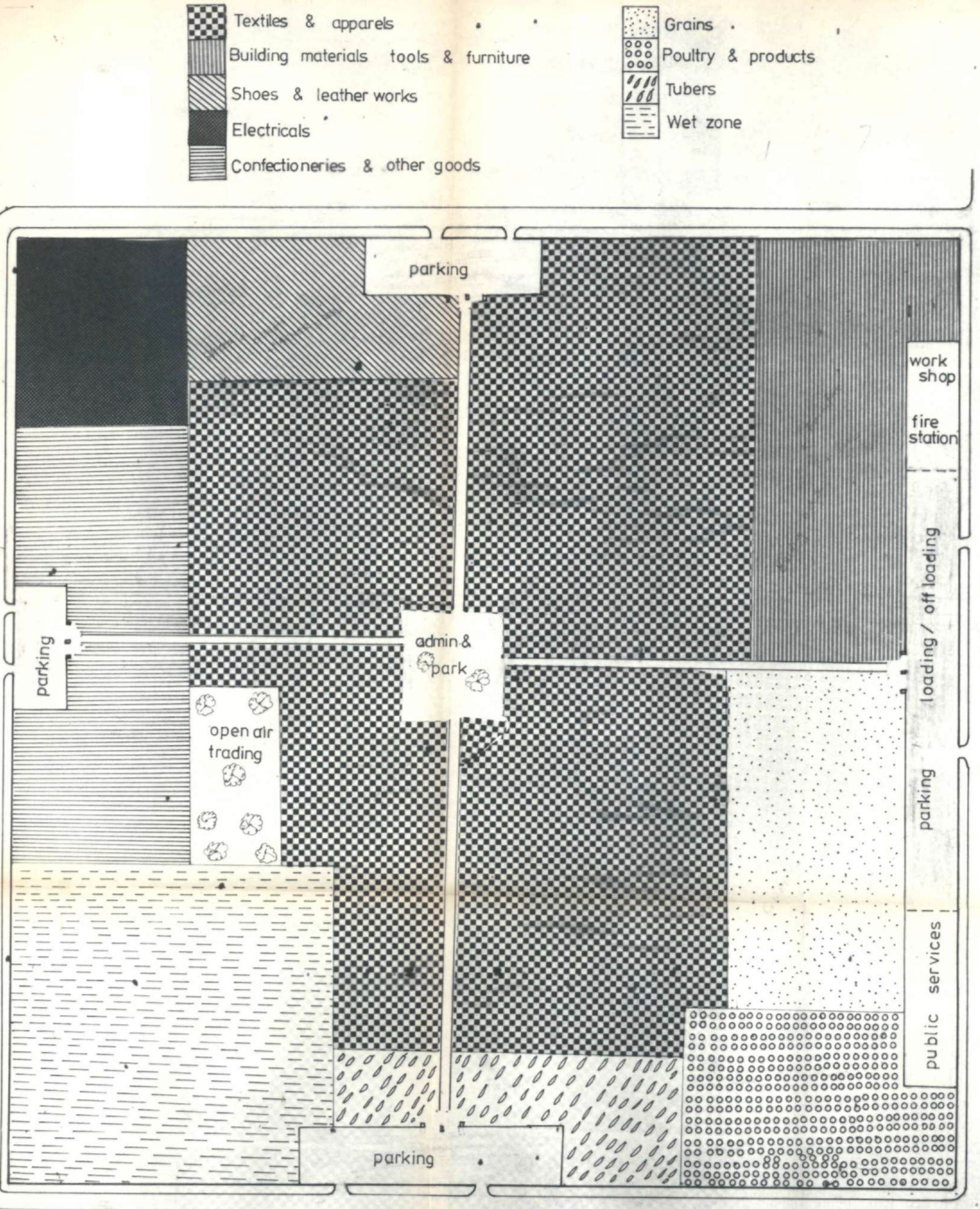
. Apart from the fact that it is expensive, it has the problem of drainage. In fact this concept can only be used for shopping centres.

From the relative advantages in view of the basic concept, the first alternative has been adopted for the design proposal. This concept will conform with complete segregation of vehicular and pedestrian traffic.

4.05. Design Proposal and Principles:

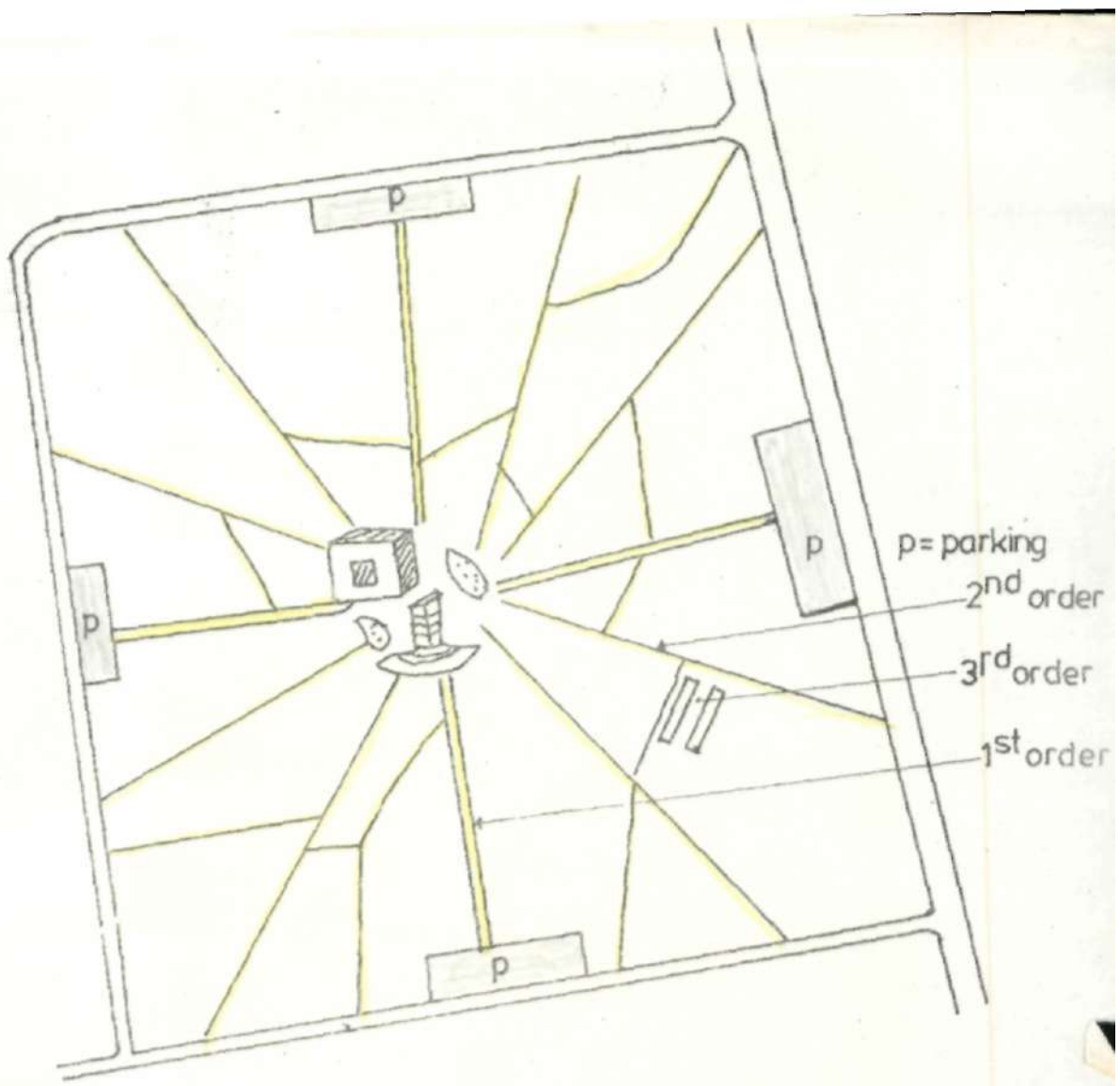
The design has been based on the principle of segregating vehicular and pedestrian traffics. This is achieved through the adopted concept in alternative I where parking is at the periphery within the market and pedestrian movement starts from the parking through the gate into the commercial section. The concept of pedestrianisation has been achieved through the principle of provision of pedestrian gates into the market without having to pass through the parking areas. Also the network of walkways and the provision of open spaces along the walkways allows for free flow and interest as a result of sudden openings to the pedestrian.

The provision of administrative block and advertisement tower at the centre is to create a focal point (point of attraction) and aesthetic feature at the central part. The concept of decentralisation of parking spaces is to reduce congestion at one gate and allows people to park near the place where purchases will be made instead of having to move across the market. The clustering to public services like the police, bank, clinic, information is to create a link between them and for easy identification by both traders and consumers. The provision of fire station is based on the principles that adequate space is provided by each cluster that will accommodate the fire vehicle in case of fire incident. This is because the fire fighting tube has maximum length beyond which it will be ineffectively used. Toilets are located at the

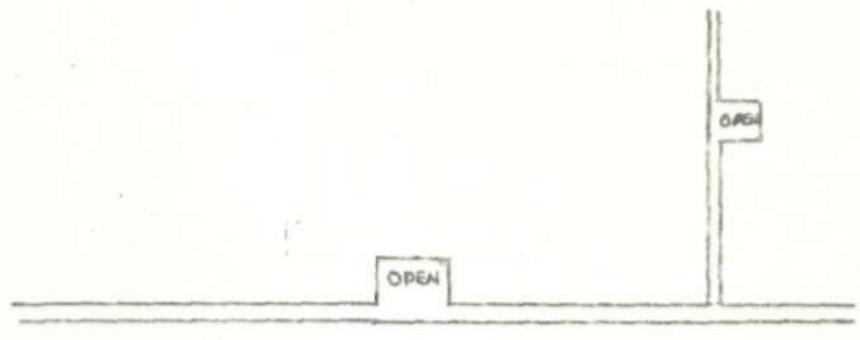


1: 2000

ROPOSED GENERAL ZONING OF MARKET BY TYPES OF COMMODITIES



(fig4-08) SKETCH OF ADOPTED RADIAL WALKWAY CONCEPT



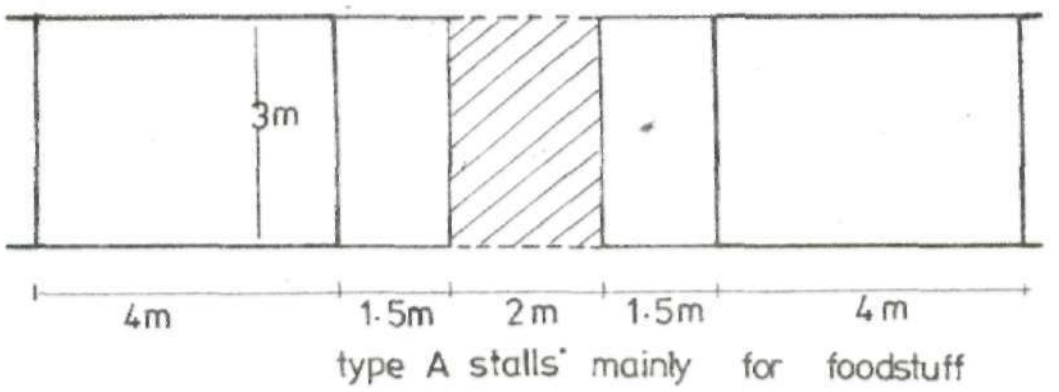
(fig4-09) SKETCH OF OPEN SPACE ALONG WALKWAYS AS BREATHING SPACES

periphery based on the peoples habit of separating laterine from the living areas.

The provision of hawkers sites is based on the principle of decentralising sites at strategic places like entrances since they need access. Further more, it will not allow them a permanent site. In this case the sites will be coded and partitioned (2 x 3m per hawker) with a total spaces of 6,000sq. metre for about 1000 hawkers. The general layout concept has been guided by the zoning principle (Fig. 4.07) whereby the bulky commodities like grains mostly carried in big sacks, yams and furniture are located close to the loading and off-loading parking spaces to ease the problem of moving the commodities to their sites within the market. Other commodities which are not as bulky could be moved by means of hand pushed wheel barrows. The wet area that deals with commodities where much water is used is located down the slope to ease the drainage of the area.

4.06. Walkway Concept:

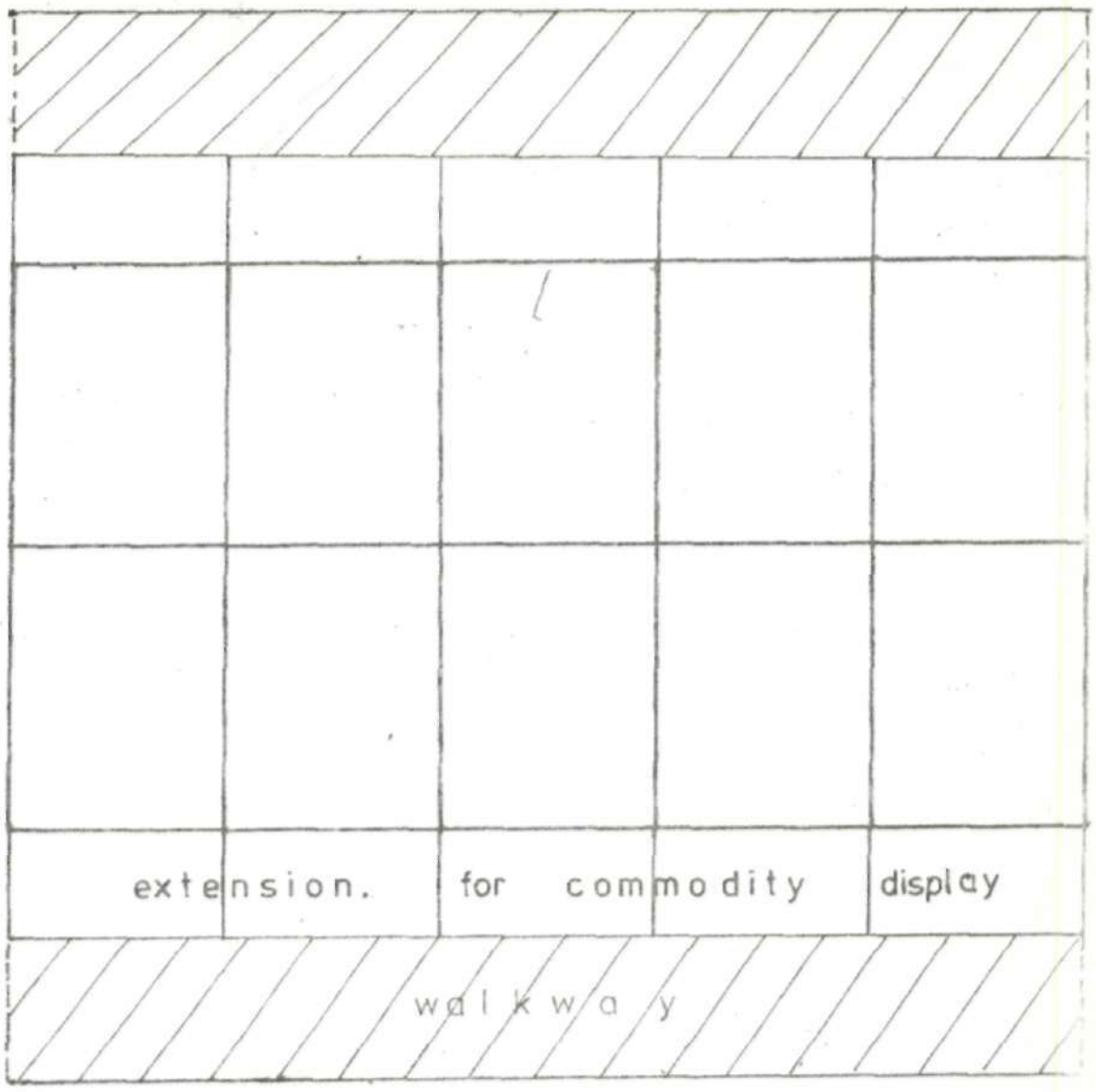
The walkway concept adopted in the design is radial concept of walkway within the market. (Fig. 4.08). It is based on the principle that pedestrian movements from the gates are directed toward the central core of the market which is made up of administration and advertisement tower surrounded with organised park. There are also walkway crossings at intervals for access into the stall block clusters. These walkways are characterised by openings at intervals as breathing spaces for people. This concept allows for free movement of people. (Fig. 4.09). The walkways are divided into hierarchical orders. The first order walkways lead from the four parking spaces to the centre defining the major areas of the market and partitioning it into four major



1 : 100

(fig 4.11.) DIFFERENT CATEGORIES OF STALLS
(PROPOSED)

F. T. DEGGE (MSc II)
DEPT. U. R. P. 1978



(fig4.12) A TYPICAL BLOCK OF STALLS

parts. The second order walkways start from the pedestrian gates towards the centre and in-between clusters of stall blocks. While the third order walkways are the spaces in-between two facing stalls. (Fig. 4.08). The first order walk-ways range between 6 - 10 metres, second order 3 - 6 metres and third order is 2 metres then plus the 1.5 metres set back for stalls on either side it is 5 metres in-between stalls.

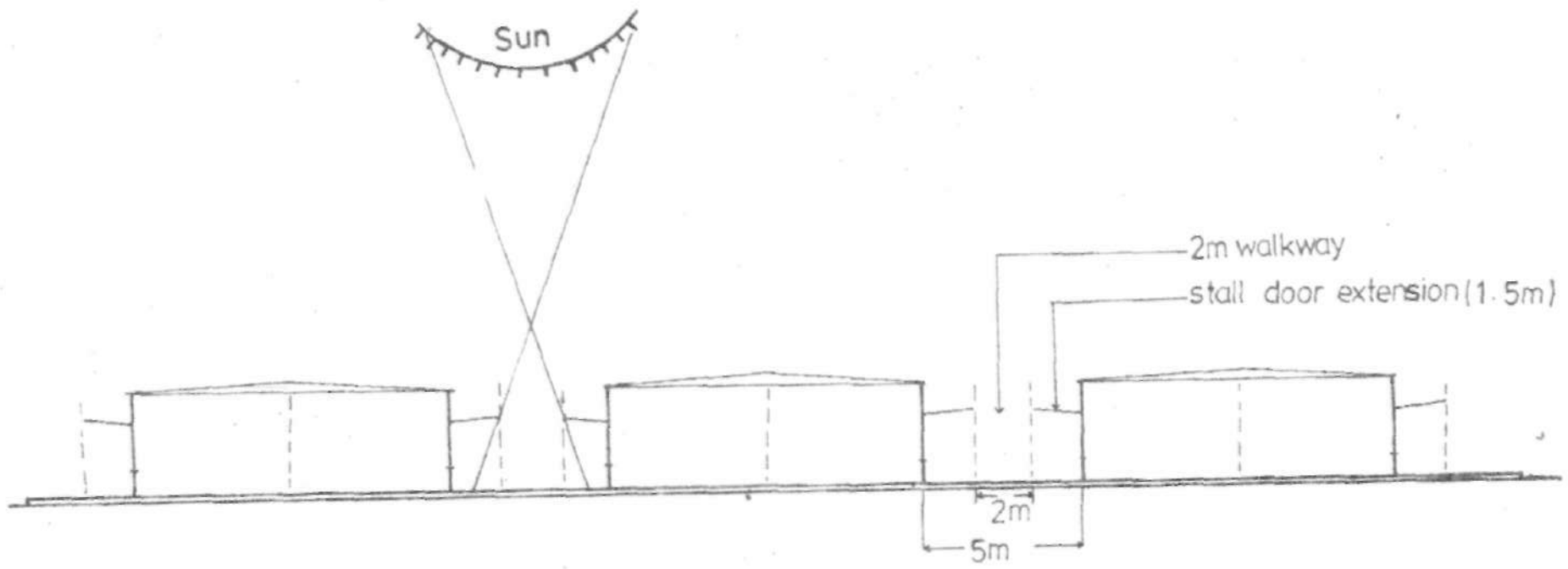
The shady trees proposed along the walkways will not only serve as aesthetic feature but will also help in checking the encroachment by hawkers.

4.07. Stall Layout and Arrangement Principles:

The stalls are generally laid down with the shorter side of the blocks facing the wind direction thereby exposing the stalls to direct impact of the wind. This concept has been adopted because of the hot climate of Makurdi. The annual temperature range from 95° to 100°F, thus it could be very hot during the dry time. From this condition of the town, the arrangement pattern is adopted to allow for maximum ventilation that is required in the market. This will also help to reduce smells that are likely to emanate from the wet zone especially. Other orientations are introduced to create variety in the whole layout. (Fig. 4.10) as the propose market plan and design.

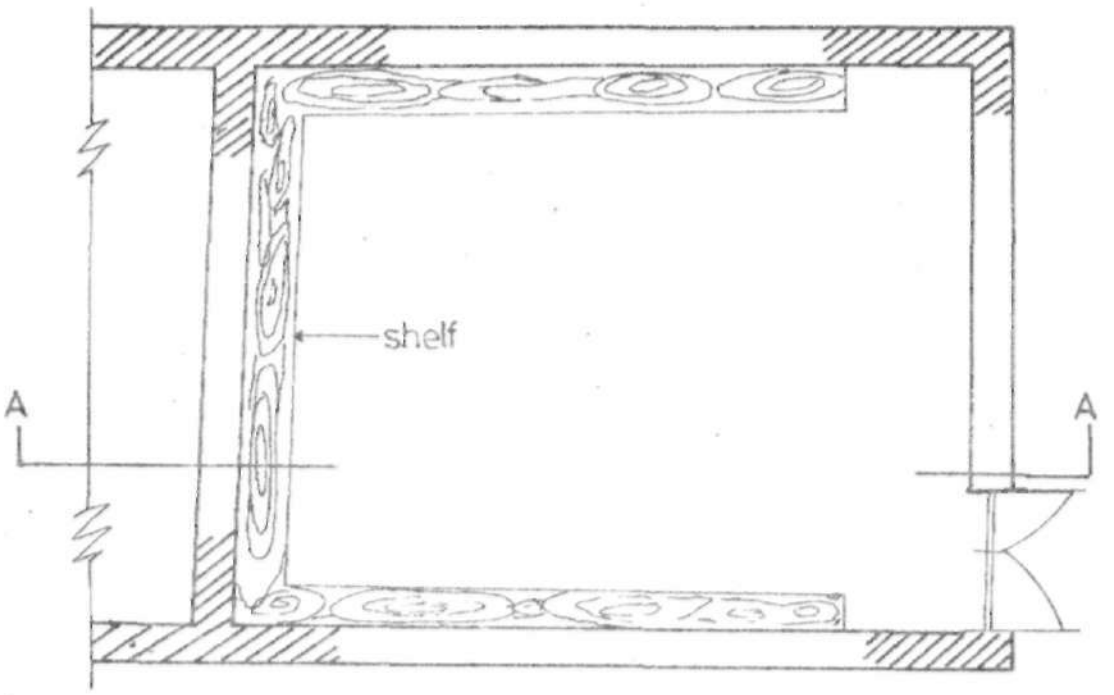
The stalls are arranged along either sides of a block facing the walkways. The shorter side of the stalls face the way to allow for greater of number of stalls. (Fig. 4.11).

The stalls are allowed a set back of 1.5 metre, thus leaving a walk space of 2 metres in-between two stalls facing each other after 1.5 metres for extension is taken for either side. (Fig. 4.12).

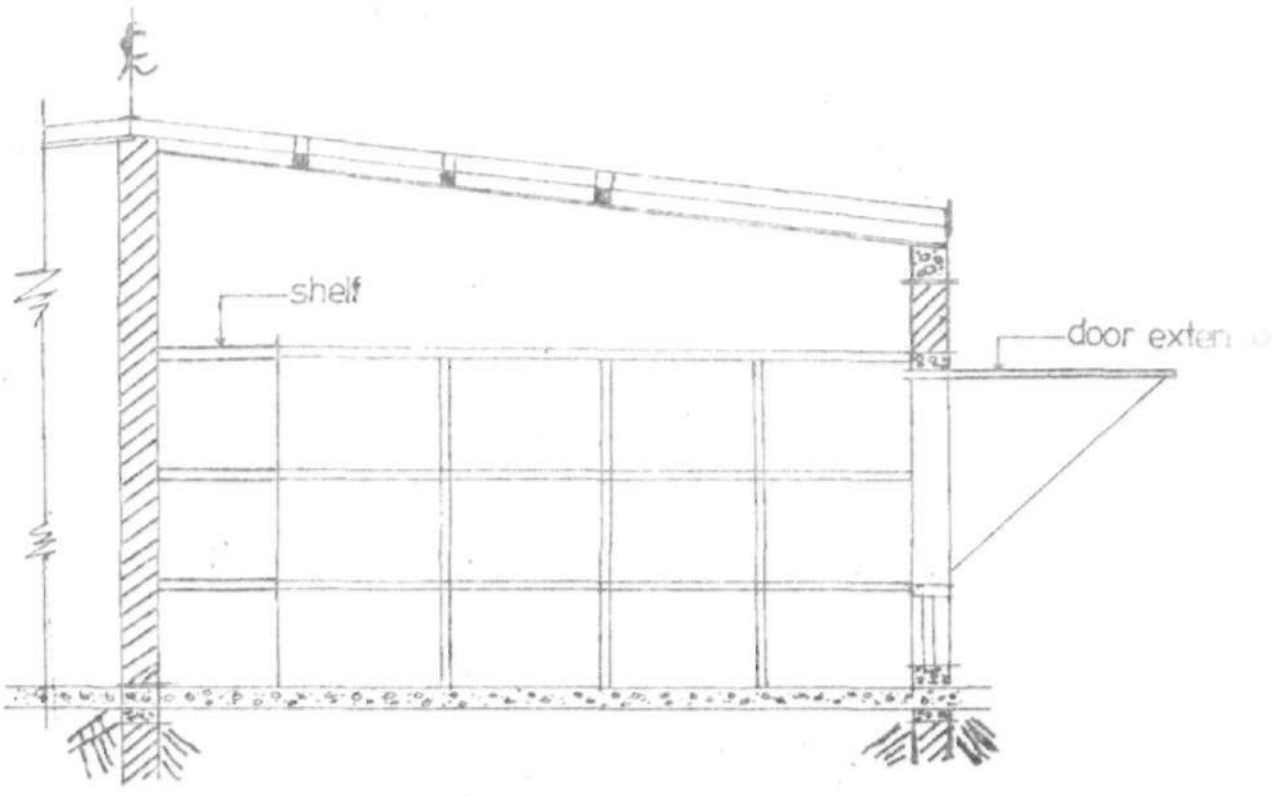


Scale 1:200

(fig4·13) ARRANGEMENT AND POSITION OF STALLS



(fig 4.14) TYPICAL PLAN OF A STALL



(fig 4.15) SECTION A—A THROUGH A TYPICAL STALL

Scale 1: 50

The lower door which is suppose to open to either sides is about a metre high and it is suppose to allow people's entrance into the stalls. (Fig. 4.14). While the stall door is used for the 1.5 metre extension under which commodities can be displayed. (Fig. 4.12).

The stalls in each block back one another with the openings on facing the walkway. The 1.5 metre door extension provides shade for the displayed commodities and trader. (Fig. 4.13).

The plan and section of a typical stall is shown in (Figures 4.14 and 4.15).

The stalls sizes have been guided by the type and nature of commodities. This is based on the principle that stall size requirements vary from commodity to commodity. Building material and furniture have been given 8 x 4 metres because the average length of a rods is about 7 metres. The areas for food items like grains, tubers and the wet areas have been given 4 x 3 metres based on the principle that these commodities do not require large stalls. The medium size stalls which are 5 x 4 metres are mostly for textile and apparels and electricals. (Fig. 4.11).

Table 4.6

Allocation of Stalls By Commodities

No.	Commodities	Percent of Total Stall Allocated
1.	Textile and Apparels	40
2.	Wet Area	20
3.	Grains	12

Table 4.5 Ends

No.	Commodities	Percentage of Total Stall Allocated
3.	Poultry and products	11
4.	Building materials	5
5.	Tuber	4
6.	Confectionary	4
7.	Shoes and other leather works	2
8.	Electricals	2
9.	Grains	12
	Total Number of Stall = 4,652	100

The allocations has been guided by the survey of commodities sold at the existing Makurdi Main Market. (Fig. ~~3.04a~~ 3.03). Percentage allocation to textile tops the list because a main market is suppose to sell more of such higher order goods. Moreover, it has also been identified from the study of Makurdi market as in Figure ~~3.05~~ 3.04) This allocation will also depend on the principle of need by each commodity, thus can not be rigid.

The lockable stalls will take 75% and open stalls to take 25%. This ratio is based on the average of the study of Kaduna and Sokoto central markets. The open stall will mostly be within the wet area and tuber zone. This is because such commodities which are mostly perishable do not need stallage in the market to rather commodities are sold and cleared each day.

4.08. Water Tank Proposal:

In recognition of the fact that a commercial core of this nature will need a lot of water, a separate water tank has been proposed for the market. The standard average water consumption of a person per day is four litres. On that basis the consumption by the stalls will be 4,652 x 4 = 18608 litres per day. Since water is also required for other uses within the market apart from drinking, it is proposed that extra 20 litres per stall should be added. This is in recognition of the fact that water is used in toilets and for wetting or washing commodities especially the perishable goods. On this basis the total clearly need will be 20 x 4,652 plus 18,608 litres. This will be amount to 93,040 + 18,608 = 111648 litres.

From this calculation the proposed water tank for the market should have a capacity of 111,648 litres per day. This is also based on the principle that not all the people that use water every-day and the consumption is mainly during the afternoon periods.

The tank is be also located at the highest part of the market.

CHAPTER FIVE

IMPLEMENTATION

5.00. Implementation

The success of any physical plan and design no matter how comprehensive and rational depends to a great extent on the implementation strategies and control. This is because under this aspect the clear definition and the responsibility of each aspect is given.

The implementation of a modern market of this nature which is to serve the whole town and the surroundings should be the responsibility of the state government. This is in view of the huge amount of money likely to be involved. Then the actual construction could be given to any construction firm of reputable records in market construction.

5.10. Finance:

The most important determinant of any implementation strategy is the financial aspect. This aspect deals mainly with who to provide the money, from what source. The financing of the market construction should be done by the state government that is, Benue State Government. The money can be got through loans from banks or any other financial institution either within the country or outside the country. It is correct to note here that Benue State Government has already applied for loan from the World Bank for the implementation of important projects within the state one of which is the proposed modern market for Makurdi. Out of the amount 25 million naira is to be for the market.

Private organisations should also be encouraged to participate in the programme. However, considering the type of commodities and nature of sale in the market such organisations may not like to

participate because the profit expected may be low. Thus such projects of this nature is better executed by the government.

5.11. Phasing:

Phasing is one of the important implementation strategies. This aspect guides to the stage of the work to be carried out and helps in the control of finance. This is because the stages of work can be quantified in monetary to guide as to the allocation of fund. It also ensures proper work and finishing of each stage. Thus the implementation stages should be thus:

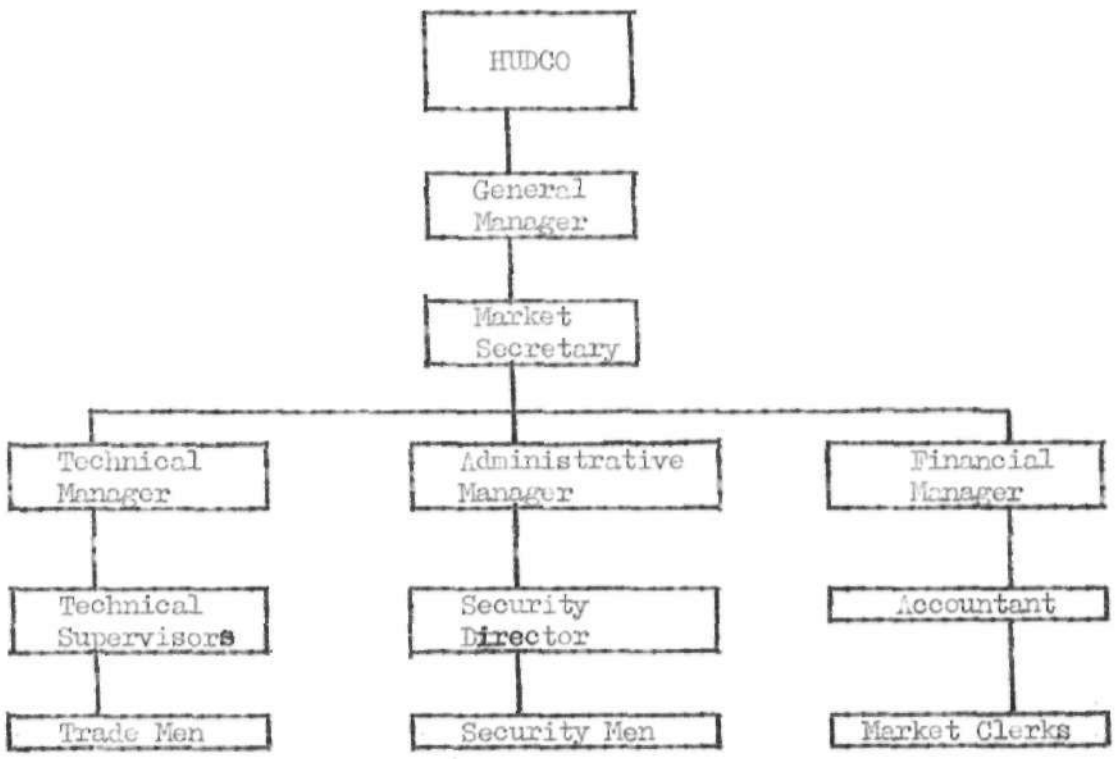
Stage I - This stage should include the identification of the construction firm and a body either from the state ministry or parastatal to supervise the work. Then the construction work should start with the provision of site and services like access road to the market, collector streets and provision of basic utilities that will be necessary for the work; like electricity and water. This will be followed by the drainage lines.

Stage II - The stage will include the construction of the administrative block, provision of public services and facilities, construction of some of the stalls preferably the stalls for textiles and appareals. Since textiles and apparels are not frequently needed items the initial removal will in the gradual conditioning of the people movement to the new market. The construction of other stalls follow later.

5.12. Administration and Managerial Structure:

The day to day running and maintenance of the market pricipally depend on the managerial structure. For a market of this nature the overall administration should be vested under the authority of an urban development board. This is because along with other responsibility of such board is to maintain urban structures within the state urban centres. This is because when it comes to maintenance such authorities will be able to render technical aid and equipments. Moreover, the financing of the project is the sole responsibility of the state government, hence it is necessary for the control and management of the market to be done by a state government parastatal. As a result of this the most appropriate parastatal to take up the responsibility is the Benue State Housing and Urban Development Corporation (HUDCO).

The set up should be thus:



Maintenance will also be done by the management by using the technical personnel. Assistance should be rendered by (HUDCO) when the need arise. Along with these management structure, there should be a separate board which should advise the administration about the market affairs. The board should be appointed by the Governor of the State. To avoid power and functional conflict the role should not exceed giving of advice whenever the need arises. Such board should comprise of the following:

One representative from Ministry of Trade and Industries.

One representative from Ministry of Housing and Environment.

One representative from Ministry of Economic Planning.

One representative from the Police.

One representative from Ministry of Health.

One representative from Water Board.

5.13. Policy for Hawkers:

In many third world cities, hawkers cause more problems for officials than any other segment of the informal sector. Among the complaints against them are that they interfare with traffic, contribute to crime and undermine health and environmental conditions.[8] Mc Gee and Young (1982) also had a positive view of hawkers, looking at hawking not only as a way of providing employment opportunities, but also as a way of facililating the economic functioning of third world cities. Markets being the economic core of Nigerian cities, they should be given official places within the market. This is because they can offer goods and services at cheaper prices than retail stalls because they do not have to pay high rents.

With this relative importance of hawkers in mind, the policy

8. George G. Wynne (Ed.). Urban Edge March 1982, Vol.6, No. 3.

should be thus:

1. They should be given or allocated sites within the market as proposed in the plan. This will prevent them from interfering with pedestrian movements.
2. They should be allowed to sell legally from their locations.
3. They should not be made permanent on a site but should be rotatory or a day to day basis. This can be achieved through daily allocation of site to hawkers depending on site chosen by the hawker or through picking of ballot papers in the case of hawkers that do not care for a choice of site. If they are given a permanent site the tendency is there that some of the hawkers may decide to erect temporary structures, kiosk or counter which will eventually change the status from hawking.
4. Such sites should be towards the periphery because they need much access and also such sites will encourage them to stay within the area.
5. They should be restricted from roaming round the market. To restrict and control their activities, at each site in the market about one or two security men should be present.

5.14. Conclusion:

The study has analysed the physical planning characteristics of Makurdi main traditional market; Kaduna and Sokoto central markets. In the study, hierarchies of markets have been identified as in Makurdi town. Since the social functions of main markets a

places is swallowed up by the growing economic activities, the lower order neighbourhood markets should be improved to care for such functions.

The physical planning problems of Makurdi market have been highlighted to include small site coverage, poor provision of utilities, facilities and services. Other problems include lack of parking spaces for private vehicles especially, poor drainage facility and bad constructional materials.

The study of Kaduna and Sokoto central markets highlighted first, the basic problem associated with the provision of wide walkway within the market which attracted encroachments from hawkers and even stall owners. This problem was identified to extend to the parking space taken over by the hawkers which cannot be given official sites.

Standards have also been identified from the study which form the bases of the proposal for this study. The study has also identified the hawkers to form a significant part of the market economy, hence they are given official recognition through the provision of sites for them.

From the work done on this thesis, it has been tuned towards the aim and objectives stated.

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