PRIPODE
(NG1)

RURAL-URBAN MIGRATION, POVERTY AND SUSTAINABLE ENVIRONMENT: THE CASE OF LAGOS, NIGERIA

Prof P. A. Okuneye	**Team Leader; Agricultural/Environmental Economist**
Dr. K. Adebayo	**Team Member; Rural sociologist**
Mrs. B. T. Opeolu	**Team Member; Environmental Scientist**
Dr. F. Baddru	**Demographer/Sociologist**

University of Agriculture,

PMB 2240, Abeokuta,

Nigeria

E-mail: b_okuneye@yahoo.com

Submitted to:

PRIPODE/CICRED
FINAL REPORT

November 2006

RURAL-URBAN MIGRATION, POVERTY AND SUSTAINABLE ENVIRONMENT: THE CASE OF LAGOS, NIGERIA (NG1)

SUMMARY

The study examined the causes and impact of rural urban migration to Lagos, Nigeria and attempted to draw the implications of these on the socio-economic, environmental and the well-being of the people in both Lagos and the places of origin of the migrants. The project conception was further strengthened after the commissioning by CICRED/PRIPODE to finetune the methodology adopted by inviting other experts to critique the existing format. Extensive review of literature was done from available documents at the national and international Institutions and organisations. Stakeholders' meeting was held to harvest some basic data and complement survey data. Six enumerators were chosen among the top postgraduate students in UNAAB for the primary data collection at an agreed price. They were trained twice for both the administration of the research instruments used for Lagos and the places of origin of the migrants. Meetings were also held after the pre-test of each category of questionnaires to finalise them. The data collection was in two phases. The first was that of Lagos and the second, the places of origin of the migrants to Lagos.

The project focussed on Lagos – the commercial nerve centre of the country with an estimated population of about 12 million. About 15 of the 20 Local Government Areas (LGAs) in the State make up Lagos metropolis. These 15 LGAs were purposively categorised based on population density and income profile of the residents and six (6) of these were randomly selected within their categories. The interview guide was administered to randomly selected 360 respondents from the six LGAs representing relatively high-income and low population density (i.e. Eti-Osa and Ikoyi LGAs), relatively middle-income and of medium population density (i.e. Kosofe and Surulere LGAs) and relatively low-

income and high population density (i.e. Ajeromi/Ifelodun and Agege LGAs) sectors of the city. Furthermore, the Chairmen of the 6 selected LGAs and Permanent Secretaries/Directors of relevant State Ministries and Departments were interviewed on the plans and activities of their organisations regarding the migrants and the needs of the increasing population. One hundred and eighty (180) respondents were covered from the three most prominent States of origin of the migrants. Samples of water and street foods were collected for analysis in both Lagos and migrants' places of origin to determineany impact of environmental pollution on them.

This study established that over 80% of the migrants in Lagos, Nigeria came from 11 States of the Federation. Of these, migrants from Ogun, Oyo and Osun States in southwest Nigeria dominate. The first reason that readily comes to mind is proximity to Lagos. This factor, proximity, did not have a fair mention in the literature as a reason for peoples' decision to migrate. Furthermore, about two-thirds of the migrants to Lagos stopped over in several locations especially Ilorin (Kwara State); Ibadan (Oyo State), Benin (Edo State) and Sagamu (Ogun State) before finally moving on to Lagos.

Migration to Lagos was firstly to seek better employment and then to enjoy social amenities not present in the places of origin of the migrants. It was discovered that migrants found it easier to get employment than to get accommodation. Most migrants reside in relatively environmentally poor areas and lived under poorer conditions than the residents in other areas. The Geographical Information System (GIS) carried out revealed that there had been a drastic expansion of developed areas in Lagos leading to a rapid loss of biodiversity and other forms of environmental degradation.

This uncoordinated growth has consequently resulted into: a mosaic of shanties/ blighted areas in many older areas of the city; a mosaic of disjointed, badly serviced areas in terms of urban infrastructures such as roads, health centers, police stations, electricity, water, drainage systems, waste management, etc. Lagos parades the highest number of uncompleted buildings among major cities in the world today. Of greater importance is the high rate of the urban sprawl, the massive cases of property encroachment and unplanned changes to other land use types in the City. Infrastructural development in Lagos was not at a rate commensurate with or near to that of the influx of population and hence heaps of wastes were found in many localities far more than in the 1990s. This massive sprawl was consequently becoming difficult to understand given its incremental occurrence. Whereas for low income areas of Agege LGA, the % of developed parts increased from 12.5 in 1962 to 100% in 2000 as against 3.4% increasing to 32.2% in high income Eti-Osa LGA for the same periods with concomitant population density. It was also found that the street foods and water consumed in low income LGAs were more contaminated than those of high income LGAs. The quality of these foods and water were similar to those in places of origin of the migrants. The average income of the migrants was higher than those of their contemporaries in their places of origin.

Even though the State and the Local Governments had good plans for the development of these areas, implementation methodologies and finance were deficient. Land use changes and infrastructural development need to be planned and taken much more seriously for environmental sustainability and improvement in well-being to be achieved in Lagos and other Nigerian cities. Given the fact that migrants transited in some towns, if the attractions that make people move to Lagos are available in the transiting towns, the problems arising from migration to Lagos would be greatly reduced. This observation enabled a migration map which can be used to stem migration to Lagos if employment

opportunities and other socio-economic attractions can be provided in transit towns/cities and in deed in places of origin.

RURAL-URBAN MIGRATION, POVERTY AND SUSTAINABLE ENVIRONMENT: THE CASE OF LAGOS, NIGERIA (NG1)

1. Research Problem

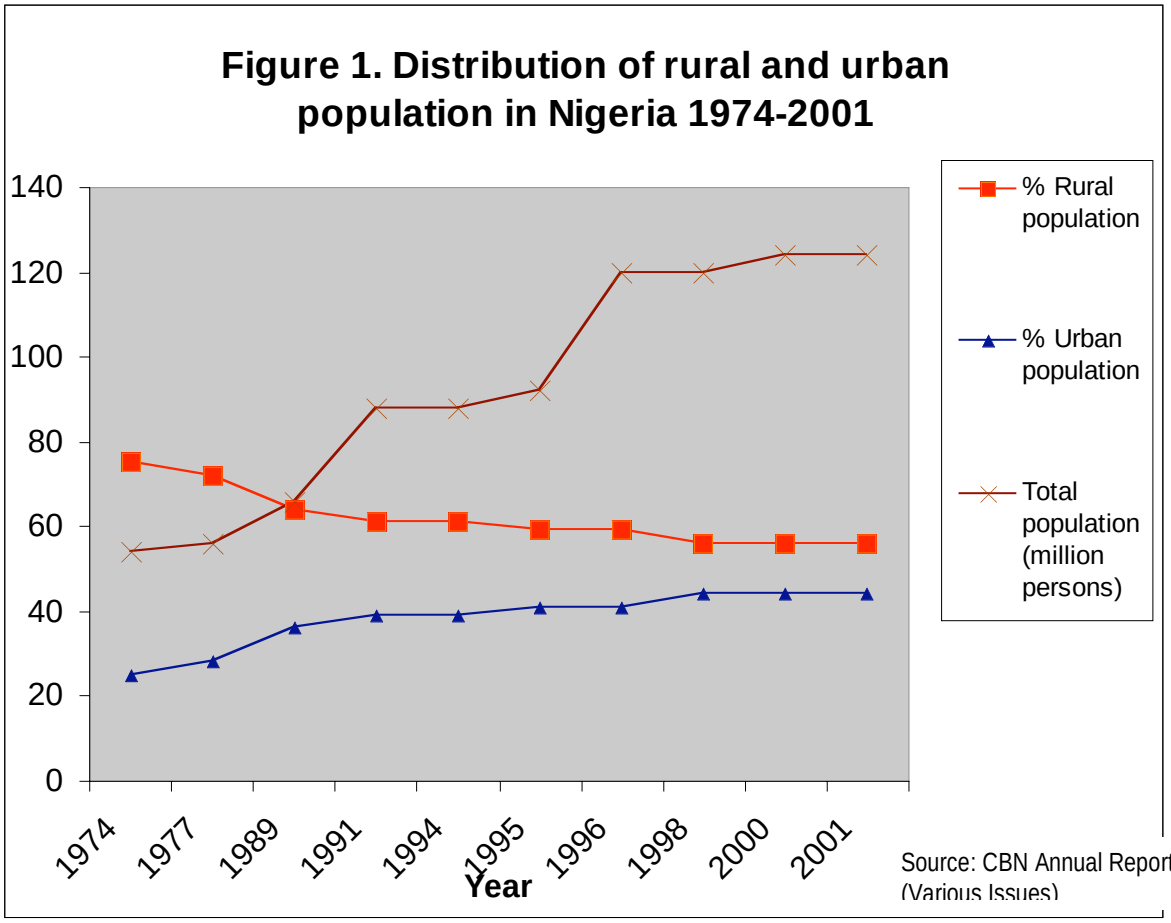
Rural-urban migration is a critical issue in the development process of relatively poor nations. In many countries, it is considered an inevitable and sometimes a

desirable resultant effect of industrialisation. In others like Nigeria, it raises questions on the ability of the urban based industries to absorb the largely unskilled and semi-skilled labour arising from the migration process. It also poses serious threat to the sustainability of rural based enterprises and livelihoods as the people who migrate are usually the more educated, young and determined (Doughty, 1979; Escobar and Collar, 1987; Guyer and Murray, 1988; Oliveira-roca, 1990; Bakhit, 1991; Brink, 1991). Urban planners also raise queries as to the requirements for social services in the areas of destination of the migrants. Such increases in the demand for social amenities often necessitate the diversion of funds from productive investments to the provision of social infrastructures (Guyer and Murray, 1988; Shen-Jianfa, 1995). Where this is not done, the places of destination of migrants quickly become slums, where poverty and poor sanitary conditions hold sway.

Several studies in Nigeria have identified inadequacy of employment opportunities, physical assets, means of supporting development and access to markets, endowments in human capital and grassroots participation or involvement in the design of development as well as poor maintenance culture as key factors leading to environmental deterioration, the growth of slums and squalor in places of destination of the migrants (Olayide, 1976; The World Bank, 1995, 1996a; CBN/The World Bank, 1999). In fact, some of these studies opine that there is the need to evaluate the issue of rural-urban migration as it is often the genesis of population problems in urban centres.

This study therefore, was an attempt to examine the influence of population dynamics and poverty on the environmental situation in the urban areas/slums by examining the nature of rural-urban migration to Lagos and the factors which influence it.

One of the key issues identified at the first Nigerian Economic Summit in 1993 was the need to ensure optimum growth of GDP and efficient resource management. To achieve this, it was opined that there was a need to properly address the problems of unemployment, under-employment and poverty in both rural and urban Nigeria. Available statistics have however shown that there has been a steady decline in rural population in Nigeria since 1974 (Figure 1). This implies that many more rural Nigerians have been moving to the urban centres. At the same time, statistics on rural and urban unemployment show that the rate of unemployment was consistently higher in urban areas than in rural areas (CBN/The World Bank, 1999). Various issues of the Central Bank of Nigeria (CBN) Annual Reports also show that while urban unemployment rose from 5.9% in 1990 to 7.1% in 2001, rural unemployment fell from 3.0% in 1990 to 2.7% in 2001. The reports also show that the bulk of the unemployed were secondary school leavers who accounted for 60.1% and 56.1% in urban and rural areas respectively. Adebayo (2002) however, shows that the attainment of 12 years of formal education (secondary education) has become a basic incentive for the youths to quit residence in the rural areas, for white collar jobs in urban areas. This implies that urban unemployment may continue to rise in Nigeria almost proportionately as the rate of graduation of youths from secondary schools.



Finally, it was shown in 1980 that poverty was largely a rural phenomenon in Nigeria, but by 1985, poverty had become pervasive in both rural and urban areas (The World Bank, 1996b; Aigbokan, 1998, FOS, 1999; Okojie et al., 1999; Ogwumike, 2001). Urban poverty incidences were recorded as 38% in 1985. The incidence of rural poverty equally increased from 28% to 51% even as poverty spread to urban areas. This high incidence of urban poverty has been attributed to rural-urban migration during the period that accompanied rapid economic turn around brought about by the huge oil revenue during the 2nd Republic (1979 -1983). In 1992, urban poverty headcount remained unchanged at 37.5% while rural poverty declined from 51% in 1985 to 46% in 1992. However by 2000, poverty in Nigeria was as high as 65% and even rose to 67% in 2003.

Arising from these, it becomes expedient to investigate the impact of rural urban migration on Lagos metropolis with a view to ascertaining the level of poverty, environmental degradation and changes in the state of infrastructure in Lagos and the places of origin of the migrants.

2. The relevance of the project for policies on sustainable development

This project portends great value for practical issues relating to:

1. Town planning to accommodate migrants in their places of destination;
2. The sustenance of local livelihoods in migrants' places of origin;
3. Sustainable management of the environment in the migrants' places of destination; and
4. A review of Nigeria's environmental protection policy aimed at monitoring and sustaining the quality and safety of the environment

3. Objectives of the Study

The overall objective of this project was to investigate the nature, causes and impacts of rural urban migration on poverty and environmental changes in Lagos and the places of origin of the migrants.

Specifically, the project:

1. Investigated the factors influencing rural-urban migration in Nigeria;
2. Developed a functional map of the rural-urban migration to Lagos, Nigeria
3. Examined the nature of poverty in both places of origin and destination of migrants;
4. Explored the environmental impacts of migration in both the places of origin and destination;
5. Established a correlation between rural-urban migration and the rate of environmental degradation in Lagos;

6. Investigated the changes in development in the places of origin and destination and their implications on the livelihoods of migrant and non-migrant families; and
7. Highlighted the implications of project findings for development planning and sustainable environment in the Nigeria

4. Study hypotheses

The hypotheses evaluated in this project on migration (versus urbanisation), poverty, and environment are defined below.

I. Ho - The decision of a person to migrate is not dependent on the existing living situation in the place of origin;

Ha - The decision of a person to migrate is dependent on the existing living situation in the place of origin.

II. Ho - There is no significant difference in the migrants' levels of income before and after migration;

Ha – There is a significant difference in the migrants' level of income before and after migration.

III. Ho - There is no significant difference in major socio-economic characteristics of migrants and their non-migrant counterparts;

Ha – There is a significant difference in major socio-economic characteristics of migrants and their non-migrant counterparts.

IV. Ho - There have been little changes in the developmental phases of Lagos and the places of origin of migrants in the last 20 years;

Ha – There had been significant changes in the developmental phases of Lagos and the places of origin of the migrants in the last 20 years.

V. Ho – There are no significant differences in the environmental problems faced by migrants in Lagos and non-migrants in their places of origin;

Ha – There are significant differences in the environmental problems faced by migrants in Lagos and non-migrants in their places of origin.

5. LITERATURE REVIEW

5.1. Introductory issues

Rural–urban migration is a critical issue in many developing countries particularly in nations where the gap in well-being between the rapidly growing metropolitan regions and rural areas are huge. The phenomenon portends great implication for rural livelihood, as the people who migrate are usually the more educated, young and determined. Consequently, the economies of the rural region become site for the reproduction of cheap labour for urban use and as such those that migrate become principal sources of rural household income. In Nigeria, rural – urban migration has a direct influence on farming systems, socio-cultural and economic conditions of the rural populace. It tends to reduce the population of rural labour available for various daily activities that ensure good human livelihood e.g. trading, fishing, weaving, hawking, food processing, and carpentry. More so, the society's total energy that is necessary for ameliorating socio-economic conditions are drastically reduced because of the chronic out-migration of younger rural labour. This in turn leads to acute shortage in farm produce and other commodities as well as declining capacity to pass down farms on to the younger generations.

Furthermore, rural – urban migration may also be responsible for loss of prime rural land and weakening of common property or other traditional land – use management system, lack of local multiplier effects needed to stimulate agro – industry and non – agricultural job creation in the region as well as disintegration of local cultural relations and institutions. Several studies opine that there is the need to eradicate rural poverty and to improve the quality of living conditions as

well as create employment and educational opportunities in rural settlements so as to reduce rural-urban. Many rural settlements however are facing a lack or an inadequacy of economic opportunities, especially employment and of infrastructure and services, particularly those related to water, sanitation, health, education, communication, transportation and energy. Appropriate efforts and technologies for rural development can help to reduce imbalances, unsustainable practices, poverty, isolation, environmental pollution and insecure land tenure. Such efforts can contribute to improving the linkage of rural settlements with the mainstream of economic, social and cultural life. These should lead to sustainable communication, safe environments and reduced pressures on urban growth.

5.1. Rural migration and population trend: Historical perspectives

In Nigeria and other West African countries, movement of people between rural areas or rural-rural migration is equally very significant and important. Whether in rural-urban, rural-rural or (in rare cases) urban-rural movement of people, migration is basically a reflection of the imbalance in opportunities and social life chances which exist between places. In the pre-colonial days, the pattern was simple, usually unidirectional and took the form of invasion, conquest or colonization (Udo, 1970). By the turn of 20th century, the pattern was becoming increasingly multi-directional in the form of free circulatory movements. Within the last twenty years, the pattern had become very complex and was increasingly dictated, more than ever before, by an attempt on the part of migrants to equalize as best as they could, the un-equal pressure of environment on them.

5.3. The pre-colonial pattern of migration in Nigeria

Much of the migrations which featured predominantly in the pre-colonial era were of colonization movements. It took the form of sporadic, massive

movements and was demographically undifferentiated. These were essentially "political" or forced movements of population. Unlike economics-motivated migrants who predominated in subsequent periods, political migrants usually migrate under compulsion as members of a group.

Historically, Yorubas -the dominant ethnic group in Western Nigeria are migratory. The subsequent amalgamation of villages or "colonial settlement" among indigenous people led to the formation of a few towns. However, some of these newly formed towns were dislocated as a result of internal warfare and resulted in a large scale forced migration of people from the devastated towns to those which were favourably placed for defence. Abeokuta, Ogbomoso, Ile-Ife, Iwo among others grew as a result of such influx of refugees. Indeed "the 19th century was a period of town coalescence and growth in response to the need for defence and security" (Mabogunje, 1967).

With respect to the Hausas, the pattern of movement was initially east to west (Odumosu et. al., 1976). The settlements at the eastern areas of Hausa land involved in the migration of militarily superior Kanuris from Lake Chad basin towards the end of eleventh century. Religion also partly contributed to the migration of some northerners in the past, apart from pastoralism which was a major occupation.

The Ibo had no centralized political organization above the level of the local headman and council of elders and therefore had nothing of the myths of origin personified by migratory ancestors (Odumosu, et.al 1976). This is not to deny that their present home involved migration. In fact, three waves of migration from the east, west and north dominated the pre-colonial migrations into Iboland. From the east, especially around the Cameron Mountain and central Africa, the Ibo moved to Nri.

The political and social disturbance which accompanied the early Jihad just below the river Benue led to a north-south movement of population into the forest zone. The west-east movement into Iboland is closely linked with the activities of Benue warriors and traders on the Niger.

5.4. The pattern of migration in Nigeria during the Colonial Period

The major interest of the British in Nigeria had been to promote trade. With their effective occupation of the country, they took various steps to achieve these objectives. Three of the steps taken, substantially modified the pattern of migration within the country (Odumosu et.al 1976). The first was to lay the foundation of a modern transportation system over which the articles of trade could move. The network was supplemented by feeder roads in 1920's. Prothero (1968) observes that 'the advent of widespread colonial administration in the late 19th century and early 20th century led to some population dynamics associated with conditions of political and social instability. At the same time the conditions for peace and security with which they were replaced, enjoyed new forms of population mobility to the areas.

Between 1953 and 1962, the urban population increased at more than twice the rate of rural population growth. The United Nations (UN) team of experts on urbanization observed from a study of three groups of regions with different levels of urbanization that "where the level of urbanization was already high (i.e. over 25% by 1920), only moderate areas of growth in both the urban and rural population occurrence but where the level of urbanization was low (i.e. below 25% in 1960) both the urban and rural populations grew with great rapidity" (UN, 1967).

It should be noted the migrants from the Northern part of Nigeria often settle in designated areas called SABO and vice versa migrants from the South stay in areas close to one another.

v) Migration and Urbanisation

When economic opportunities, including employment, in rural areas are impacted by changes in prices or other socio-economic changes brought about by trade liberalisation and/or other forces, migration can occur. Typically, migration from rural areas to urban centres by individuals seeking to improve their economic potentials can have impacts on both the areas they leave as well as the cities they move to.

The health of rural communities and the viability of traditional agricultural practices often depend on the human capital available for production and the sustenance of the land, both of which are labour intensive in developing countries. In the countryside, excessive migration means that rural populations decline and households get smaller, affecting social networks, community institutions as well as land use and conservation practices. A number of traditional agricultural practices and sustainable production methods such as terracing, minimum tillage practices and contour plowing rely on labour intensive maintenance. Male labour migration can also increase the workload on women and children left behind in the rural areas. Where this takes children out of school, it can contribute to the perpetuation of poverty across generations.

Migration into cities can also affect the health of urban centers. The F.A.O. estimated that by 2005 over half the world's population would live in cities. In Latin America and the Caribbean 75 per cent of the population already lives in cities. This figure is expected to climb to 83 per cent by 2030. Comparable figures

for Asia and the Pacific are 37 and 53 percent and for Africa are 38 and 55 per cent. At present, twenty cities in the world have populations of over 10 million people (FAO, 2002). In the next 30 years almost all population growth will be concentrated in urban areas. The pace of growth is expected to be fastest in developing countries, where the urban population is forecast to increase from 1.94 billion to 3.88 billion. The number of people in African cities is predicted to rise from 297 million to 766 million, or more. In Asia the urban population is expected to double from 1.35 billion to 2.61 billion (The World Bank, 2002). Sustainability impacts that may result from increasing urbanisation include rising urban poverty rates. In many parts of the developing world in particular, urban poverty rates already exceed 50 per cent.

In addition, farmers in countries experiencing rapid urbanisation may face the challenge of supplying growing urban populations with an affordable and safe food. Food distribution chains may be inadequate to deal with the additional strains of having to supply increasing urban populations. In some areas of the world, urban sprawl is encroaching on prime agricultural land. This tends to move production further away from centres. In some parts of the world, long distances, bad roads, and poorly maintained trucks already cause spoilage of 10 to 30 per cent of produce. Where these and other services (such as storage facilities or slaughterhouses) are already under pressure, increased costs will be associated with investment necessary to produce and transport food safely over longer distances. With some populations growing at rates of up to 10 per cent per year these costs may be prohibitive for many countries.

5.6. Effect of rural-urban migration on sustainable livelihoods of non-migrants

It is often held that the out-migration of the skilled and the educated people from rural areas deprive those areas of the human capital so badly needed for socio-economic development. Again, this negative effect does not seem to

apply in Nigeria as neither the urban-ward nor rural-ward migrant ever cuts off his links entirely with the village of origin either socially or developmentally. Returning migrants often maintain two homes- one in their place of work and the other in their village of origin. This may split their loyalty between the two locations to some extent, but observations in the western and other parts of Nigeria have shown that the migrants' loyalty (in terms of contribution to development) is often more to the village or town of origin than to the destination community. Such loyalty is evident in the fact that the migrant goes 'Home' to spend his holdings or leave periods, attends and celebrates major religious social and cultural festivals there and goes there for local and national elections to vote and to be counted during census. Some even go to register their motor vehicles and the birth of their children. The source region may temporarily lose in terms of the volume of tax receipts. Udo (1975) reports that this was the concern in Awka and Igbira Divisions which made the latter to compel migrants of Igbira origin to pay their taxes at Gome. Some of these ended up paying tax at home and abroad.

According to Preston (1969), the departure of productive members of the society increases the dependency ratio in rural areas. The concept of "dependency" ratio is too closely deprived from the idea of retirement as the Nigerian rural dwellers hardly retire. Most rural dwellers in Nigeria are at a subsistence level hence the "able-bodied" educated, underemployed, young men move to the city or other rural areas so as to actually reduce the number of mouths fed at that level thereby indirectly reducing the "dependency burden" in their families. This had been demonstrated in the return migration of Sokoto, Hausa family while their migration down south, often reduces the demands on locally grown foods. Many migrants were said to remit items regularly to their families thereby helping to alleviate the financial burden at home.

5.7. Effects of rural –urban migration on food production

Rural urban migration could have negative effects on agricultural production. Studies have shown that women, children and men left in places of origin worked harder in order to replace the labour cost as a result of rural urban migration. Previously, idle labour was only employed with economic wages in order to replace the labour which could have been supplied by the migrants. Also, new cropping patterns were adopted to overcome or accommodate labour constrains.

Some of the countries in sub-Saharan Africa with the highest rate of increase in their agricultural labour force in the 1970s i.e. where net migration may have been low, were associated with relatively high rate of agricultural production. Examples are Niger and Rwanda. However, in Ghana, Mozambique, Gabon, Congo, Lesotho and Sierra Leone, very low productivity was associated with low rate of increase in agricultural labour force due to rural-urban migration. Furthermore, many studies on rural-urban migration in Nigeria have concluded that rural-urban migration leads to a reduction in rural work force (Olusanya, 1969; Mabawonku, 1973; Adegbola, 1972; Odumosu et al, 1976). This implies low farm income to the generality of the farming population with possible attendant increase in poverty in the rural areas. With no corresponding improvement in agricultural technology, average farm size will fall and lower level of food production would result which may lead to higher food prices even in the rural areas (Okuneye, 2001; 2004)

5.8. Effects of rural-urban migration on sustainable livelihoods of urban settlers

Rural-urban migration in Nigeria has been known to provide labour (often cheap labour) to a destination including serving as house-helps, daily paid casual labourers at construction sites and even as prostitutes. Migrants also pay taxes to the local government areas in which they live and work voluntarily or by force.

Migrants also pay rents to their landlords thereby contributing to the revenue of the area, which are further used for development purposes.

Perhaps the other very important effort of migration is that of mutual cultural diffusion which takes place between the migrants and their hosts. In Nigeria, it has been observed that the migrants (particularly women and children) learn the language of their host locality to enhance survival and acceptability. On the other hand, in many parts of the cocoa belt; the local Yoruba women have adopted the migrants' (Ibo, Isoko and Urobo) styles of dressing. The migrants have introduced new religious sects, which have gained adherents from among their hosts. In some cases, the migrants have also adopted the preparation for sale and consumption of some food items of their host culture while at the same time introducing some crops (particularly some variety of leafy vegetables used for the preparation of soup) to their hosts. However, despite all these taking place, the migrants usually have their separate sections where they sell some of the food items specially demanded by people from their own home area. These items are also usually supplied or obtained directly from their areas of origin.

The possible negative effect of migration on urban areas includes the strains it puts on existing urban services such as water supply, transportation, health facilities and general sanitation, housing and employment opportunities. Native-born urbanities may be eased out of jobs, as migrants are often willing to take on any job at relatively lower wages than these urbanities.

5.9. Effects of rural-urban migration on the migrants

Migration affords the opportunity for the migrants to acquire new skills and broaden their intellectual and social horizons. Returning migrants often stimulate cultural innovations and technological changes in their home communities. For an instance in Nigeria, it was the returning Irun-Ekiti migrant farmers from Ife and

Ibadan cocoa farms who introduced cocoa to their home district at the end of the 2nd World War. This phenomenon transformed the farming region into an important observation area for migrants from other areas including Igbira food producers from Kogi State in the North,, Hausa kola traders also from the North, Isoko oil palm exploiters from the Niger Delta and some Ibo labourers from Eastern Nigeria (Adegbola, 1972).

Similarly, the early adopters of rice cultivation in the Abakaliki area in Ebonyi State in the East were migrant farmers. The large and ever expanding food market of the Lagos metropolis has similarly been sustained by migrant farmers who were essentially tenants that moved into the Epe-Ikorodu axis of Lagos State to farm. This shows that in the past, rural-urban migration made farm labour to be available in the suburb urban areas and they affected the supply of food to the urban areas. Furthermore, the migrants often see themselves as more exposed than the people back home as they were later able to rub shoulders with their contemporaries in places of destinations.

5.10. Government policies influencing migration

Governments all over the world are often suspicious of the effects of massive migration into the urban areas particularly when such areas are few in number. Generally, the need to keep low, associated problems of urban employment, social services provision and urban crime rate to manageable levels, has often pushed governments to adopt some form of polices to influence migration. With specific reference to internal migration such policies usually fall into two categories, namely direct intervention and indirect measures.

Direct interventionist policies often aim at controlling or generally changing the direction of migration within a country whereas indirect measures often seek to solve other problems, which may ultimately affect internal migration. Since,

migration is mainly a response to unequal distribution of socio-economic opportunities or natural disasters, most governmental policies aimed at influencing migration are often closely linked to development programmes intended to address the imbalance. Most of such policies rely on the assumed economic rationality of the individuals and are operated through employment and income changes. The major strategies of development which government in developing countries have adopted in order to directly or indirectly influence migration include the following policies and programmes:

- Rural and agricultural development;
- Provision of social services including rural electrification, water supply, etc;
- Dispersed urbanization ;
- Decentralized urbanization and regional development ;
- Centralized urban development;
- Job or employment creation.

These strategies are not necessarily mutually exclusive. They may serve to encourage or discourage rural out-migration, encourage or discourage urban in-migration, discourage or channel migration to specific rural or urban locations, force or prohibit migration. Not much has been done to document the effects of these policies in many countries at least none of note in Nigeria. This is however not the subject of this study but an interesting topic for the future.

In each of these interventions, the livelihoods of the people are affected. In many cases the responses of the migrants or intending migrants are those of survival of themselves and families before any other consideration. In such circumstances when the goals of the government were not achieved, social ills, environmental degradation and poverty were often the resultant effects. How far do these mirror the situation in Nigeria with particular reference to Lagos? Where did the migrants to Lagos come from and what were their objectives or aspirations? How far have these objectives been achieved? What are the lifestyles of the migrants and the environmental effects of these on Lagos? What

are the coping strategies of the migrants and how far have their movements helped or affected their areas of origin and or indeed their families?

These issues are quite germane to sustainable development as migration impacts on a recursive basis the environment, livelihoods pattern and particularly poverty level. Areas or countries of similar characteristics can then learn or benefit from these scenarios and develop a road map that will chart sustainable development possibilities which other countries, communities or even multinationals can benefit from. This subject should merit a strong consideration in Environmental Impact Assessment

6) Research Methodology Adopted

The research approach to this study was in three main stages. These are:

(i) Review of available documents by national and international Institutions and organisations including Universities, Central Bank of Nigeria (CBN), National Bureau of Statistics (formerly FOS), Federal Ministry of Environment, United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), etc to obtain more data for this project and provide a foundation on which further investigations can be carried out.

(ii) The project is focussed on Lagos – the commercial nerve centre of the country as the starting point of a scoping study of the distribution and living conditions of migrants in their places of destination. A stakeholders' meeting was held involving among others relevant Ministries' officials and local governments. From this starting point, places of origin of the respondents (migrants in Lagos) were selected as obtained from the respondents in the scoping phase. Socio-economic and environmental investigations were then carried out in the identified places/areas.

(iii) Development of a migration map of Nigeria indicating the flow of migrants to the selected places of destination. Then, a sample of three places of origin of migrants were selected from three most common States, for the purpose of a more detailed data collection on the living standards, environmental situation, occupation, demography and infrastructures in these places of origin.

Lagos provides a classical case for studying migrants and the consequences of internal migration. It is the most cosmopolitan city in West Africa with an

estimated population of over 10 million persons inhabiting the metropolis alone (not the whole of Lagos State). Lagos is a melting pot and mini-Nigeria. It has all the ethnic groups fully represented albeit with the Yoruba as most prominent ethnic group (Fadayomi *et al*, 1992). The city has a long history from its pre-colonization origins through colonial administration to becoming the commercial nerve-centre of Nigeria. The city lies approximately between longitudes 2^0 24' and 3^0 42' and latitudes 6^0 22' and 6^0 52' along the Atlantic coastline just above the Gulf of Guinea (Figure 2).

Figure 2. Map of Nigeria showing the location of Lagos

6.1. Data Collection

The Stakeholders' meeting generated a lot of data on the basis of which some other data collection methodologies were fashioned. The meeting led to the choice of LGAs, the need for remote sensing/GIS on the chosen LGAs, etc. Government officials' views were also harvested.

Six trained enumerators administered an interview guide to 360 respondents drawn from six purposively selected Local Government Areas (LGAs) representing relatively high-income and low traffic (Eti-Osa and Ikoyi), relatively middle-income and traffic (Kosofe and Surulere) and relatively low-income, high traffic (Ajeromi/Ifelodun and Agege) sectors of the city. In each LGA, the street listings of the 1991 National Census were obtained from the headquarters of the LGAs and used to draw a random list of six streets. On each street, 10 respondents were selected at the rate of 1 person per house from the 10 houses randomly selected in each street. Only 350 interview guides were however analyzed given the dearth of relevant data from the outstanding 10 interview guides. The interview guides analyzed were spread as follows: low income - Ajeromi/Ifelodun 60 persons, Agege 60 persons; middle income - Kosofe 60 persons, Surulere 60 persons and high income - Eti-Osa 56 persons, Ikoyi 54

persons. The interview guides were then subjected to descriptive statistical analyses to draw out trends and patterns in the socio-economic, environmental and health variables determined in the study.

The study has generated primary data on:

1. Key factors (social, economic, cultural and political) which influence rural-urban migration in selected locations in Nigeria;
2. The indicators of poverty (social, health, income, education, including gross/net enrolment of pupils in primary, secondary and tertiary education disaggregated by gender, welfare and basic infrastructures)
3. Samples of food and water from selected places of origin and Lagos;
4. Demographic and socio-economic characteristics (e.g. housing, schools, employment opportunities, waste management, etc) of a sample of people selected from some places of origin and Lagos;
5. Geographic information on the sequential expansion of Lagos, population density and the state of the environment.

Additional primary data were obtained through participatory methods such as observation, role-playing, ranking and mapping at the various places of origin, selected from the data obtained in Lagos, focus group discussions (FGDs) with elders and chiefs in places of origin, etc.

6.2. Methods of Data Analysis

The data collected were analysed in three main ways. Firstly, on-field participatory analyses were conducted with some migrants in Lagos. Further analyses were carried out in their places of origin. A more systematic analysis of available quantitative data was concluded for data obtained from the Lagos survey. For instance, tables, figures and charts were used to present the nature of poverty and the demographic and socio-economic characteristics of the migrant and non-migrant families; the environmental impact analysis protocol was used to explore the environmental impacts of migration in both the places of origin and destination. Biological and chemical assays were carried out on the samples of food and water obtained from the selected places in Lagos. Similar analyses were also carried out on data and samples obtained from the selected places of orientation to know the levels environmental damage done to the street foods which are commonly consumed. Inferential statistical tools were used to test the five null hypotheses originally proposed in the project.

7) MAJOR FINDINGS

Studies have shown that people tend to be pulled to the areas of prosperity and pushed away from areas of decline (Braunvan, 2004, Adebayo and Aromolaran, 2005). Migrants are usually concerned with the benefits they hope to gain by moving and usually give less thought to the problems that they would face as a

result of migration. Some of these problems or benefits may impact more on the non-migrants left behind in the rural areas. Yet, this category of stakeholders in the rural-urban migration process is often not the focus, in most policy debates influencing the process. This study is an attempt to expose the opinion of this group on the process of rural-urban migration with a view to identifying 'new' benefits and problems that can be attributable to the process. The findings are presented in two main sections, namely the place of destination i.e. Lagos and the places of origin.

7.1 Place of Destination, Lagos

7.1.1. Preliminary Considerations on the rural-urban migration to Lagos

The results showed that over 80% of the migrants in Lagos Nigeria came from 11 States of the Federation (Figure 3). Of these, migrants from three (3) States, Ogun, Osun and Oyo States in Southwest Nigeria dominate with about 42.3% of the respondents. The first reason that readily comes to mind is proximity to Lagos. This factor has not got a sufficient mention in the literature as a reason for peoples' decision to migrate. Furthermore, as shown in Figure 4, about two-thirds of the migrants to Lagos stopped over in many locations (Figure 5) especially Ilorin (Kwara State); Ibadan (Oyo State), Benin (Edo State) and Sagamu (Ogun State) before finally moving on to Lagos. The import of this is that if the attractions that make people move to Lagos are available in the transition towns, the problems arising from immigration to Lagos would be greatly reduced.

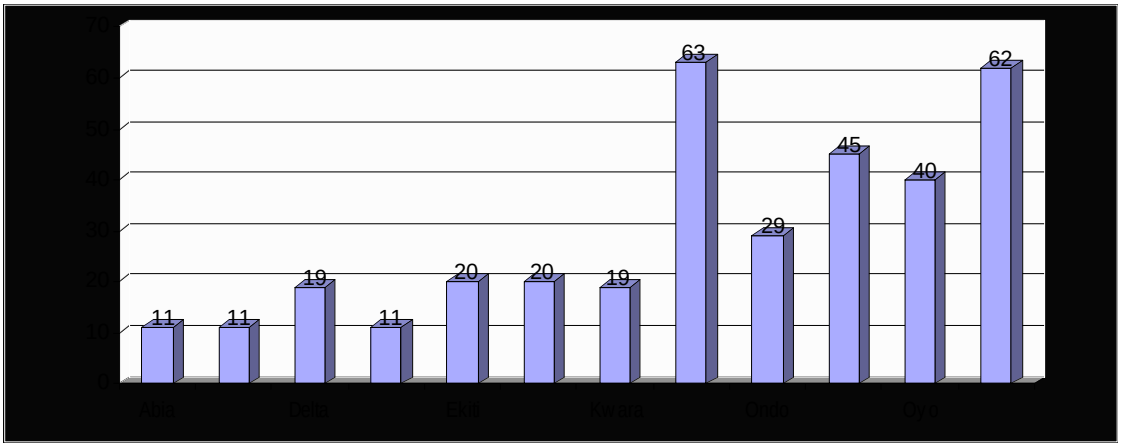


Figure 3. The States of origin of most migrants to Lagos

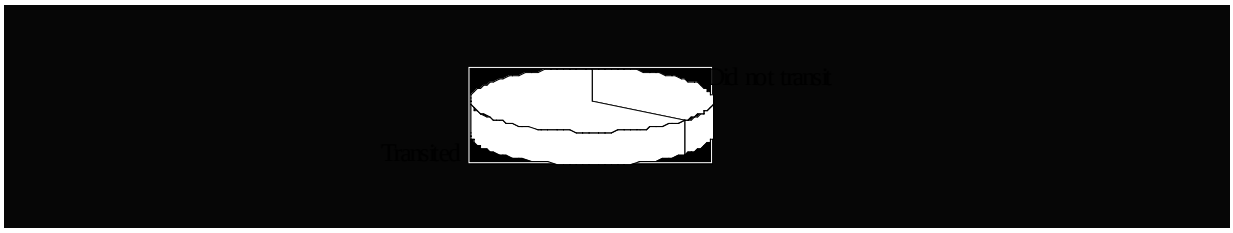


Figure 4. Proportion of migrants who transited through other town(s) before finally moving to Lagos

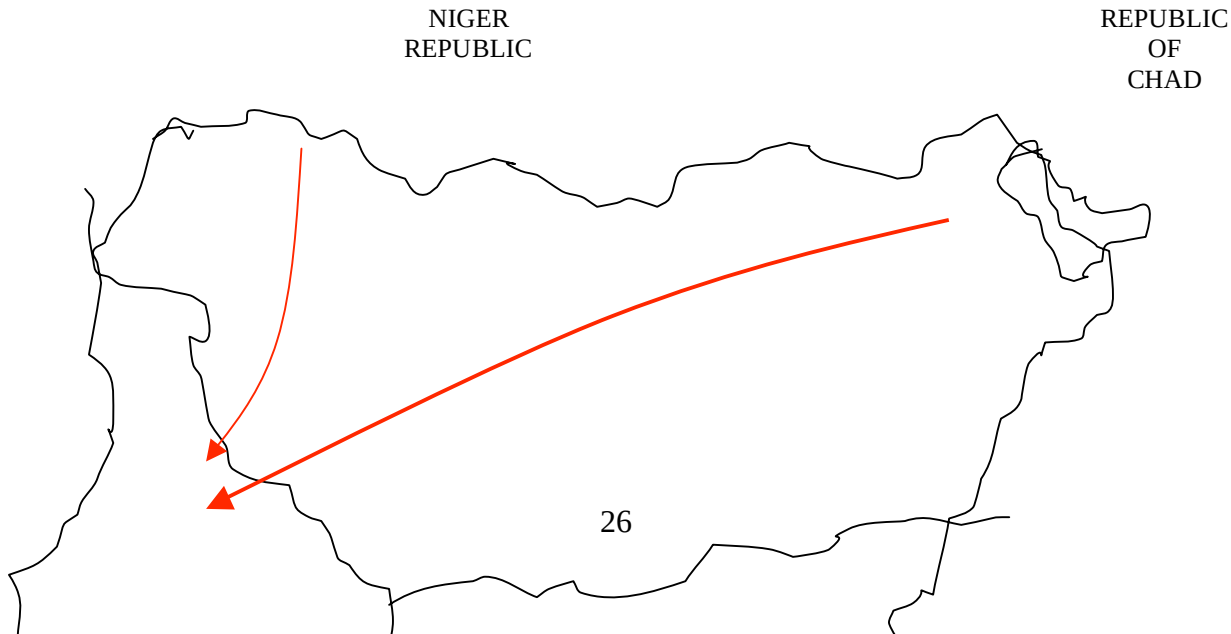
7.1.2. Poverty and Employment Status

This section examined changes in occupational status of migrants and their levels of incomes. It then compared the consumption patterns before and after migration.

Most of the respondents migrated to Lagos within the last 20 years (Fig 6).

Table 1 shows that over 60% of the respondents in the Lagos survey were students, unemployed or farmers before migrating to Lagos. Once in Lagos, farming was no longer an occupational choice, but the diversity of occupational prospects becomes higher and the proportions that engaged in the Civil service, Teaching and Business, etc increased. This finding suggests that efforts at improving the practice of agriculture to make it more attractive to the youths can not be found in continuous rural-urban migration but rather in stemming it and developing rural industrialization.

Over 80% earned incomes less than N5, 000 before moving to Lagos and more than 70% were earning incomes above N20, 000 after migrating to Lagos (Figure 7). In fact, the average earning per person before migrating to Lagos was N7, 027:50K as against N20, 795:75K while in Lagos. This finding lends credence to the argument that economic considerations are the overriding factors in the decision of rural people to migrate.



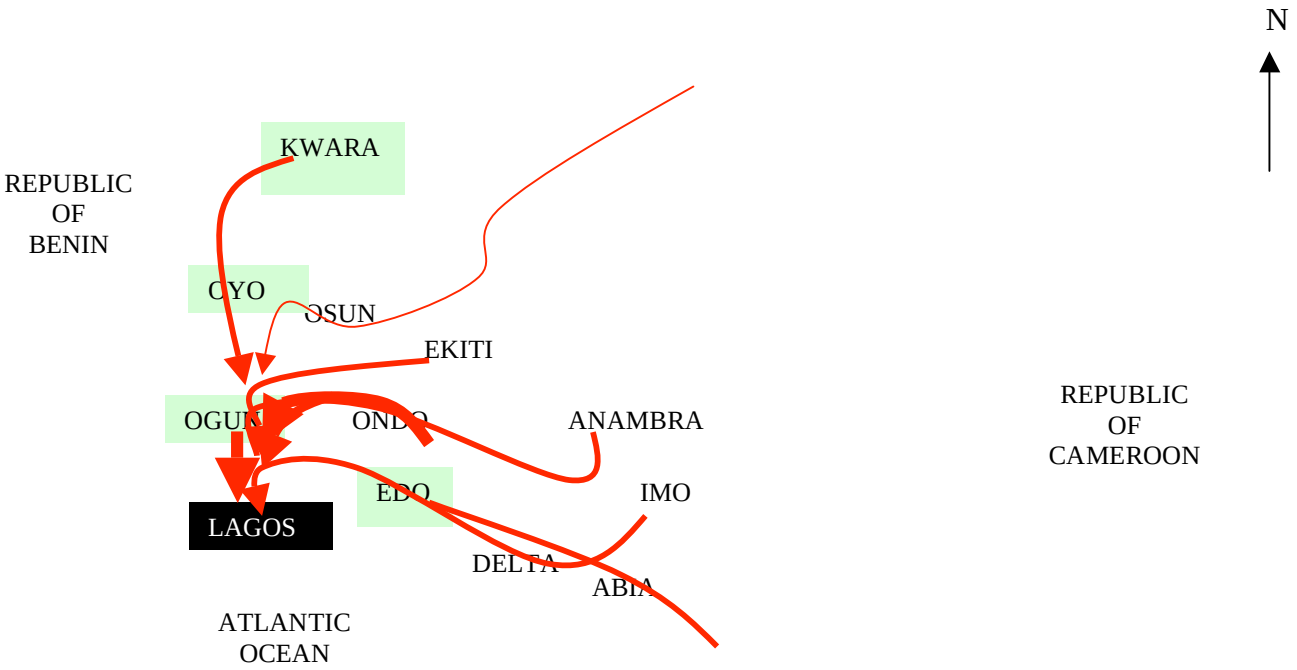


Figure 5. Map of Nigeria showing the States of origin and main routes of most migrants in Lagos

Transition States

Lagos – The place of destination

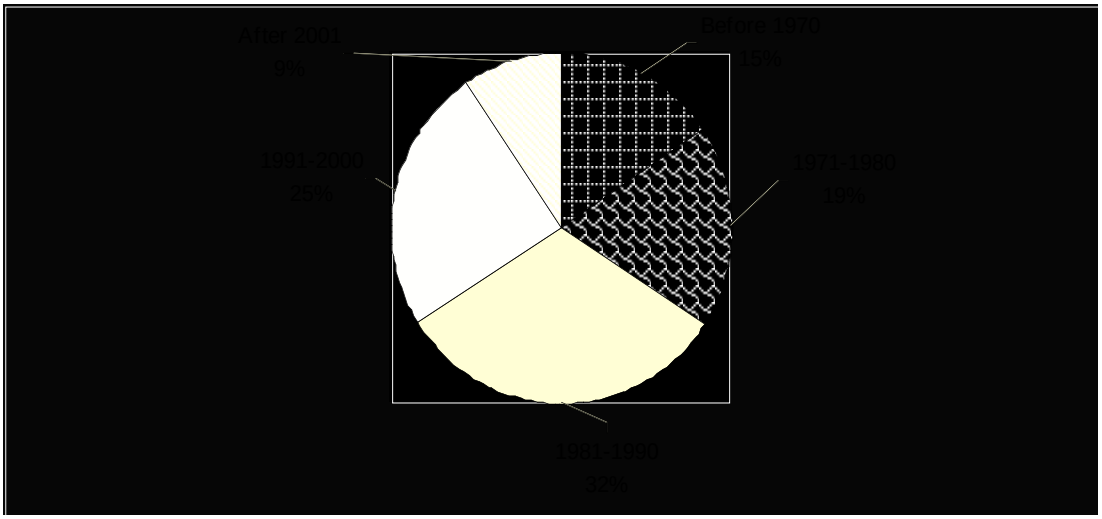


Figure 6. Distribution of respondents by the period of migration to Lagos

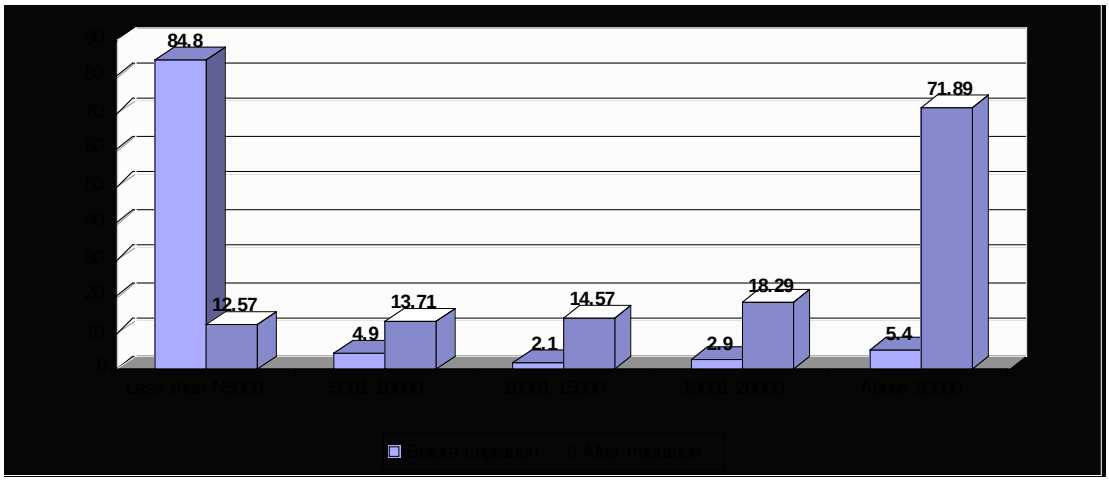


Figure 7. Migrants' income levels before and after migration to Lagos by Income brackets

From Table 2, it can be observed that the respondents consumed more of proteineous food items than carbohydrates. These were either in form of larger quantity of the items or increased frequency of consumption per week.

As shown in Figure 8, most of the respondents ate regularly at home and occasionally at restaurants.

Table 1. Major occupation s of respondents before and after migration

Occupation	Before migration	%	after migratio n	%
Student	125	36	14	4
Unemployed	47	13.4	6	1.7
Farming	44	12.6	0	0
Trading	27	7.7	56	16
Teaching	26	7.4	55	15.7
Business	15	4.3	31	8.9
Civil service	11	3.2	47	13.4
Apprentice	7	2	5	1.4

Banker	2	0.6	10	2.9
Security	0	0	10	2.9
Electrician	1	0.3	8	2.3
Factory work	0	0	7	2
Mechanic	1	0.3	6	1.7
Salesmanship	2	0.6	5	1.4
Transporters	2	0.2	5	1.4
Tailoring	0	0	4	1.1
Others	40	11.4	81	23.1
	350	100	350	99.9

Note: Others were those occupations that did not feature before migration but had less than 3 respondents after migration

Over three-quarters of the respondents felt that the socio-economic conditions of their counterparts at their places of origin would have changed from what it was when they left home (Figure 9) but might not be better than theirs. Despite this, however, 64% of the respondents did not want to return to their places of origin (Figure 10) and were not even considering moving to another town (Figure 11). In fact, most of them claimed that nothing would make them leave Lagos (Figure 12).

Table 2 Consumption level (kg/month) and frequency of consumption by respondents before and after migration

Item	Average Quantity consumed (kg/month)		No. of times taken per week	
			Places of origin	Lagos
	Places of origin	Lagos		
Rice	10.0	16.5	3	5
Garri	19.0	16.0	5	5
Beans	10.1	11.9	3	4
Cocoyam	4.2	1.8	1	1
Beef	7.7	11.0	5	4
Pork	1.2	2.0	1	0
Chicken	2.8	4.9	3	2
Fish	7.5	9.9	5	5
Eggs	1.4	3.0	2	3
Groundnut oil	1.6	3.0	3	4
Milk (lts.)	0.9	3.2	3	3
Bread	3.0	7.1	3	4
Salt/spices	0.8	2.9	7	8
Electricity (₦)	214.5	550.65	5	14
Water (lts)	869.0	1,108.9	5	6
Rent on Housing ₦)	1,252.55	8,995.31	5	26
Transportation(₦)	264.63	1702.33	4	5

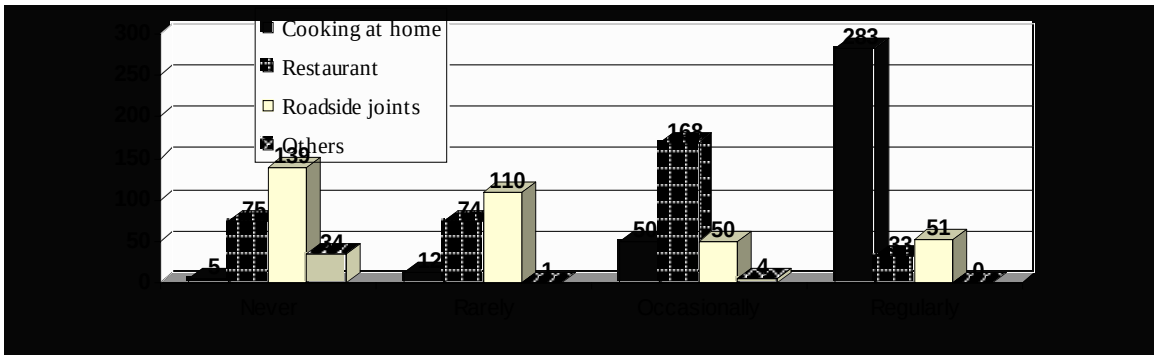


Figure 8. Migrants' normal eating patterns in Lagos

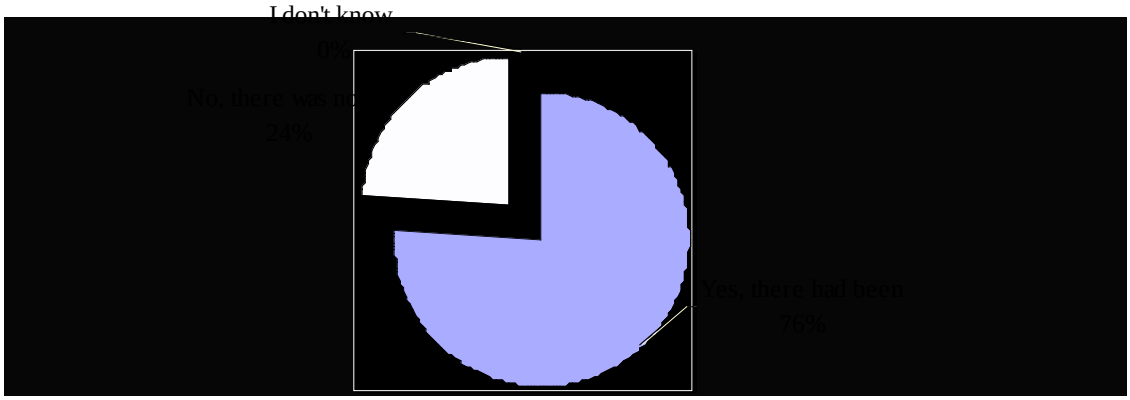


Figure 9. Perception of positive changes in the socio-economic characteristics of people at respondents' places of origin

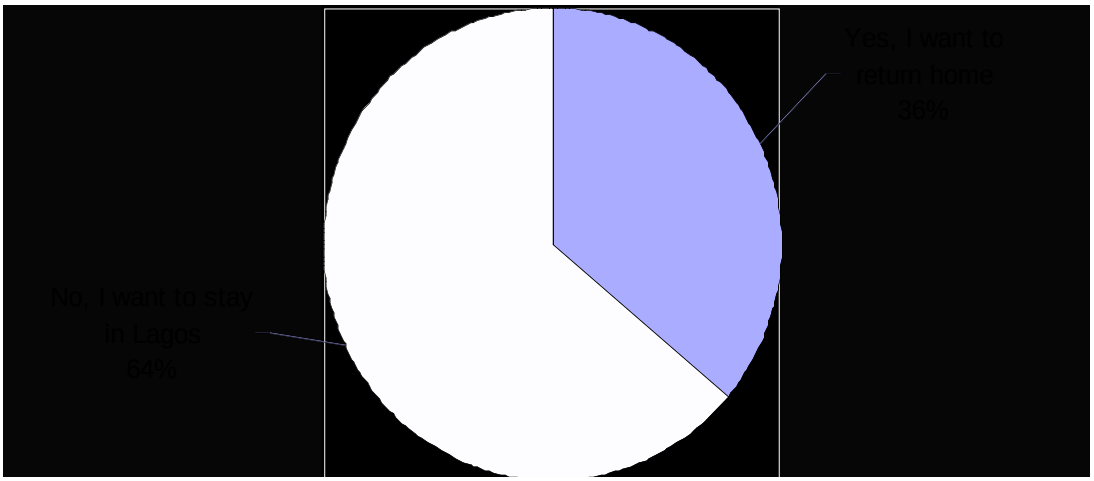


Figure 10. Proportion of respondents who felt like returning to their places of origin

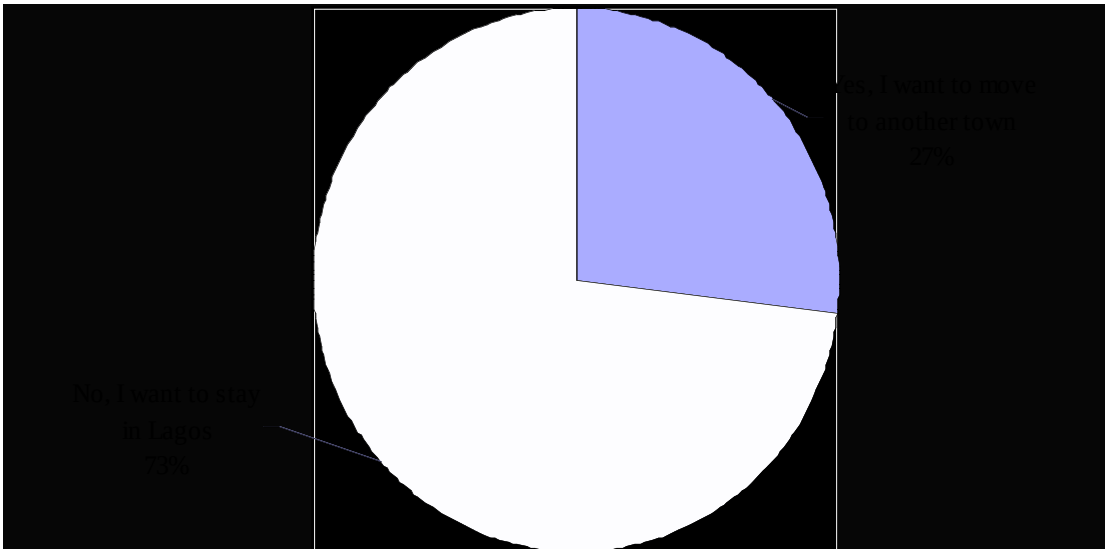


Figure 11. Proportion of respondents who felt like moving to another town

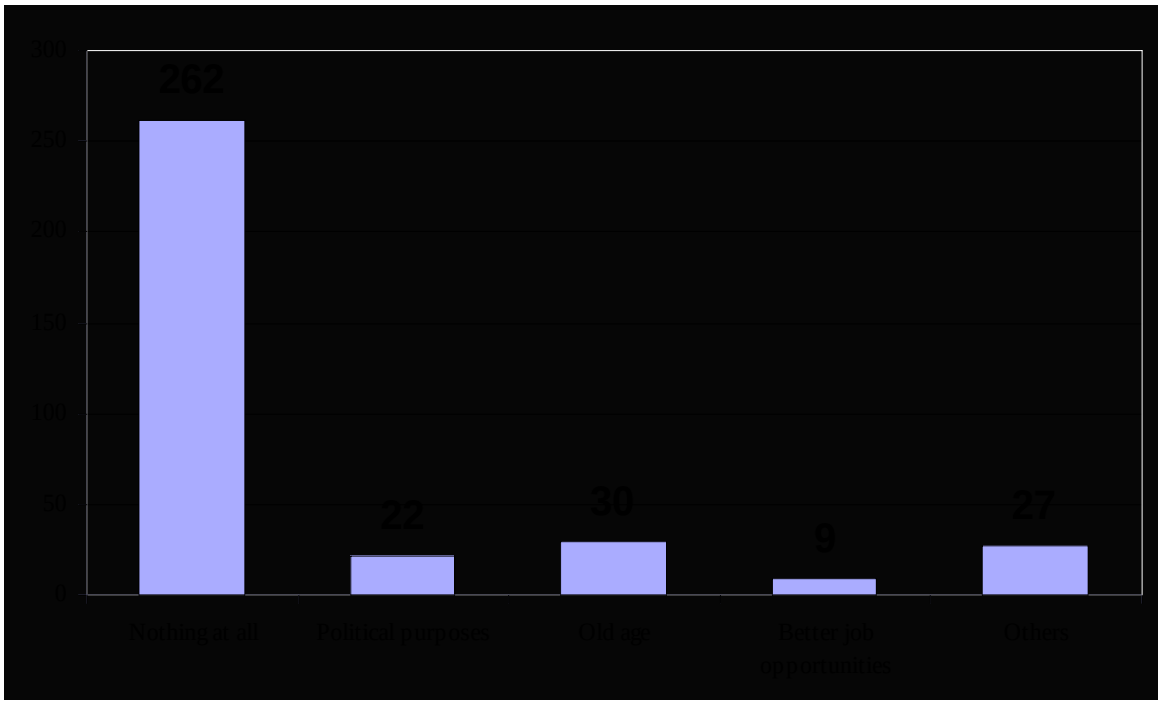


Figure 12. Factors that respondents' felt would make them return to their places of origin

7.1.3 Development and Environmental Issues in Lagos: A Remote Sensing and GIS Approach

Given the high rate of rural-urban migration to Lagos, it has turned to one of the world's fastest growing metropolitan areas in terms of population. UN projections on Lagos population even had to be adjusted upwards from 4.5million in 1980 to 13.5million in 1996, despite the fact that many of the world's Less Developing Countries' (LDCs) cities' population projections had to be scaled down in the face of operating realities. The population growth has been accompanied by a large urban sprawl despite the physical barriers of wetlands and \water around the metropolis. A major characteristic of the urban sprawl is the highly uncoordinated fashion of its growth as more people migrate to and settle in Lagos in a random and unplanned manner.

This uncoordinated growth has consequently resulted into: a mosaic of shanties/ blighted areas in many older areas of the city; a mosaic of disjointed, badly serviced areas in terms of urban infrastructures such as roads, schools, health centres, electricity, water, etc. It appears that Lagos parades the highest number of uncompleted buildings among major cities in the world today which in many cases serve as places of abode to the migrants. Of greater importance is the high rate of the urban sprawl, the massive cases of property encroachment and unplanned changes to other land use types in the City. This massive sprawl will continue to be difficult to understand given its incremental occurrence unless it is weighed along with the rate of immigration to the city and the need for an understanding of productive environmental sustainability in Lagos.

Data from satellites have been used in this section to illustrate the rates at which such human induced changes have been occurring in Lagos and how they can serve as an input into the urban management decision making process. This

section is an attempt at mapping the urban sprawl in the present Agege, Surulere, Ajeromi/ Ifelodun and Eti-Osa LGAs from 1962 to 2000 to capture the LGAs covered and the bulk of the period migrants moved to Lagos. By this the study was able to assess the urban sprawl in the LGA's over a long period.

The study concentration is on four of the LGAs covered in the survey (Fig. 13). These are: Agege, Surulere, Ajeromi/ Ifelodun and Eti-Osa LGAs. The choice of the LGAs was made to represent a typical population density profile in the city and the density of housing, in the low income areas (Agege and Ajeromi-Ifelodun), middle income areas of Surulere and high income areas of Eti-Osa LGA.

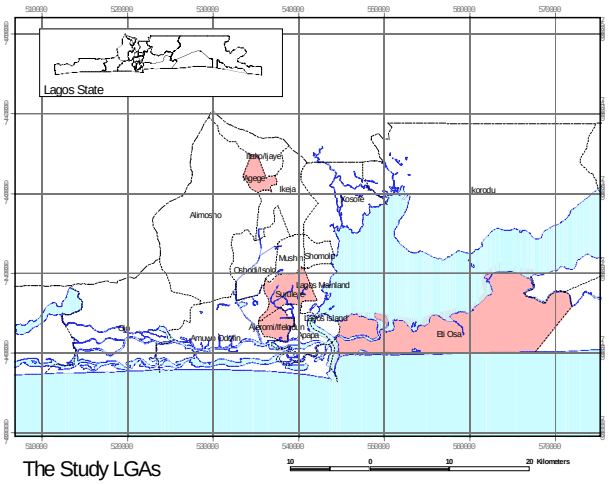


Figure 13. Lagos State (in set) and the Study LGAs

The projected population density for 2000 from 1991 census in the LGAs at 2.8% is given in table 3 below

Table 3. Projected population density (2000) in selected LGAs in Lagos

LGA	Area(Km^2)	Population Density 2000

		(persons/km^2
Agege	11.17	48,090
Surulere	22.95	25,889
Ajeromi/ Ifelodun	11.90	64,057
Eti-Osa	159.01	1,272

Methodology

- All map and image processing were done using Arc View 3.3 as well as the image and spatial analyst extensions
- The administrative area boundary polygons were digitized.
- 1962 data sets were scanned and geo-referenced to UTM Zone 31 Grid (Figures 14 and 15).
- The data equally served as the base map
- On screen digitizing was made to extract all features (built up and non built up categories) within the LGA's of interest.
- The Landsat ETM data were geo-referenced using the scanned 1962 data and some current known points on the imagery. The multiple band data were pan sharpened and re-sampled to 15 metres The screen polygon extraction of the built up and non built up areas were also extracted from the image (Figures 16 and 17).
- All area calculations were done using Arc View software on LGA basis.
- In deriving the extent of the urban sprawl, the map products from 1962 and 2000 data sets were topographically overlaid to generate the areas and extent of change consequential to immigration to those parts of Lagos.

Results and discussion

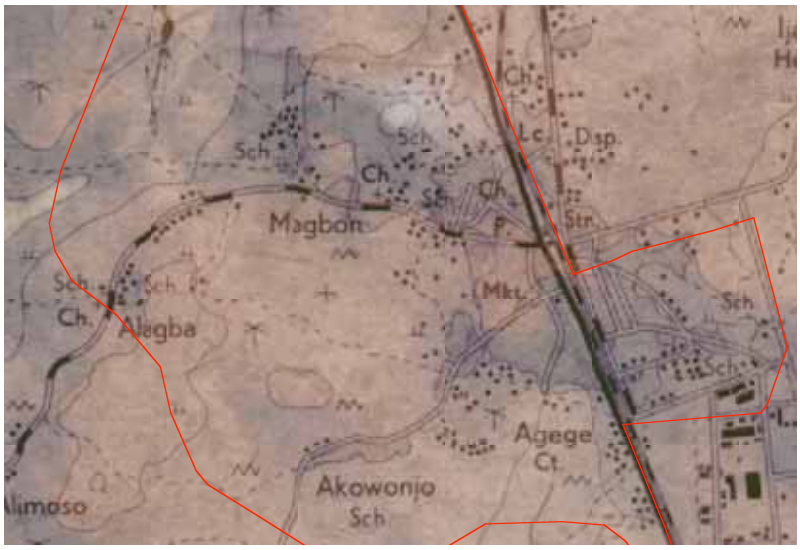


Figure 14. Scanned topographical Map Sheet of Agege

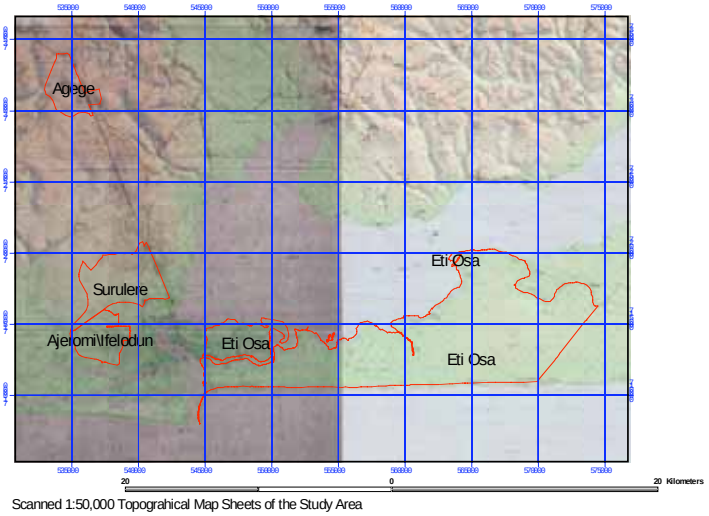


Figure 15. Scanned topographical Map Sheets of the Study LGAs

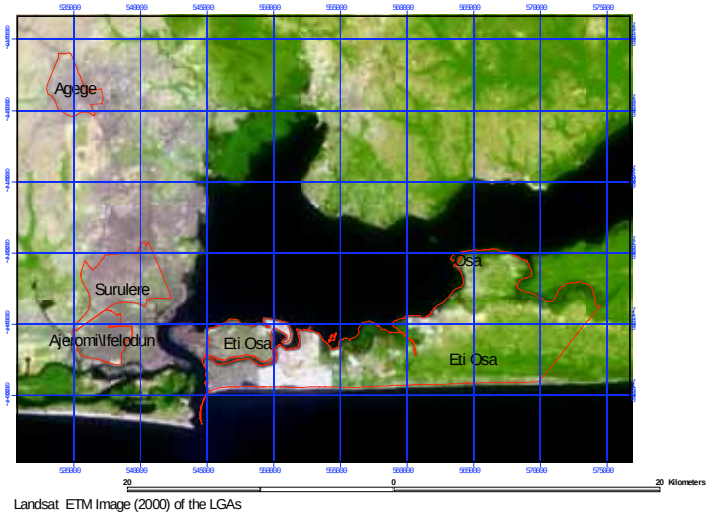


Figure 16. Landsat ETM Coverage of the LGAs

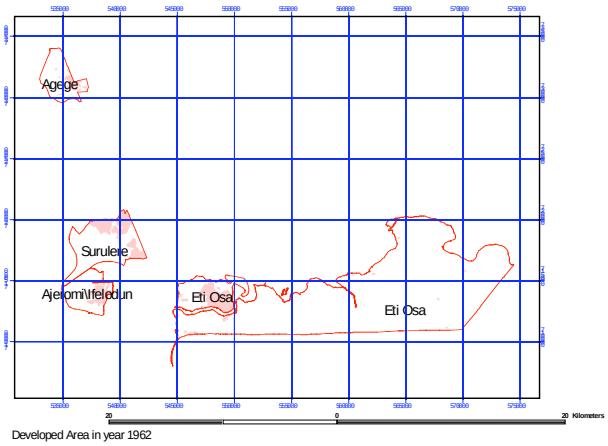


Figure 17. Developed Area in 1962

Table 4. Developed Areas in 1962

	Agege		Surulere		Ajeromi/Ifelodun		Eti-Osa	
	Ha	%	Ha	%	Ha	%	Ha	%
Developed	138.9	12.4	578.3	25.2	235.7	19.8	544.4	3.4
Undeveloped	978.4	87.6	1716.4	74.8	954.6	80.2	15357.3	96.6
TOTAL	1,117.3		2,294.7		1,190.3		15,901.7	

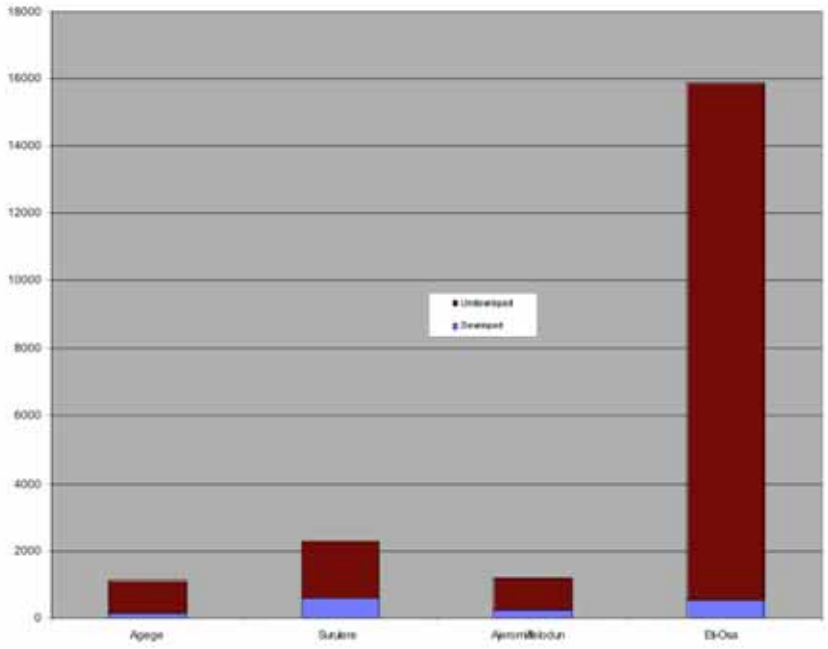


Figure 18. Developed and Undeveloped Areas in 1962 (ha)

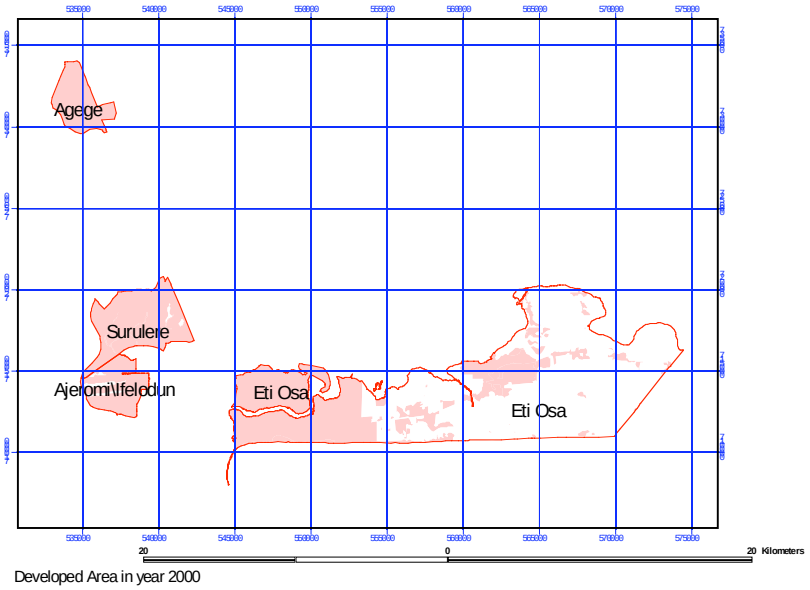


Figure 19. Developed Area in 2000

Table 5. Developed Areas in 2000

	Agege		Surulere		Ajeromi/Ifelodun		Eti-Osa	
	Ha	%	Ha	%	Ha	%	Ha	%
Developed	1,117.3	100.0	2,223.5	96.9	1086.6	91.3	5123.6	32.2
Undeveloped	0.0	0.0	71.2	3.1	103.7	8.7	10778.1	67.8
TOTAL	1,117.3		2,294.7		1,190.3		15,901.7	

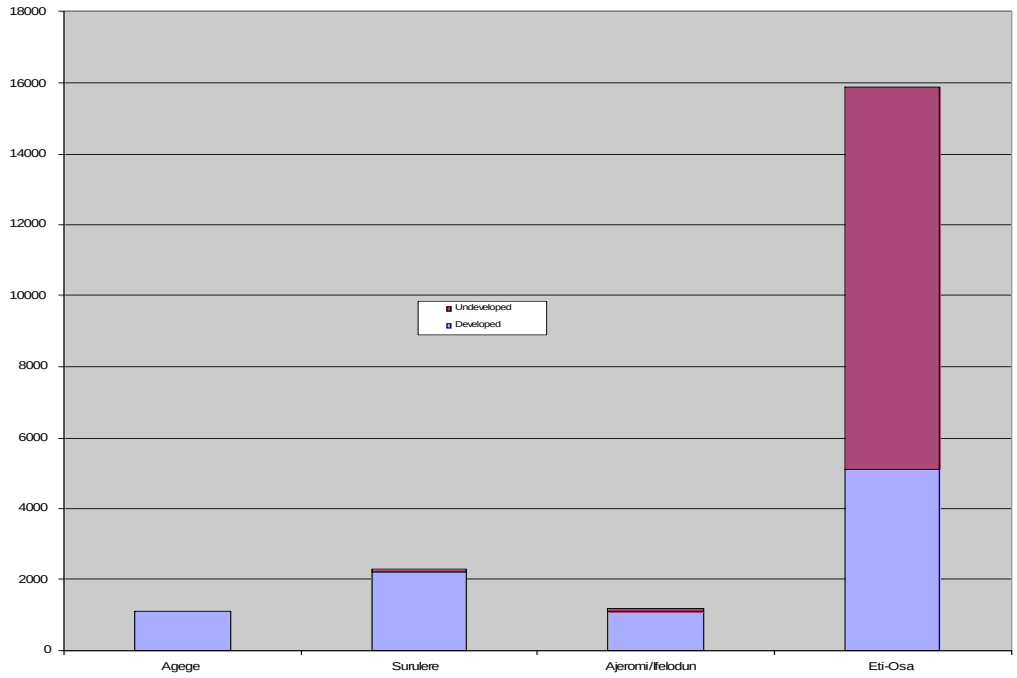


Figure 20. Developed and Undeveloped Areas (ha) in 2000

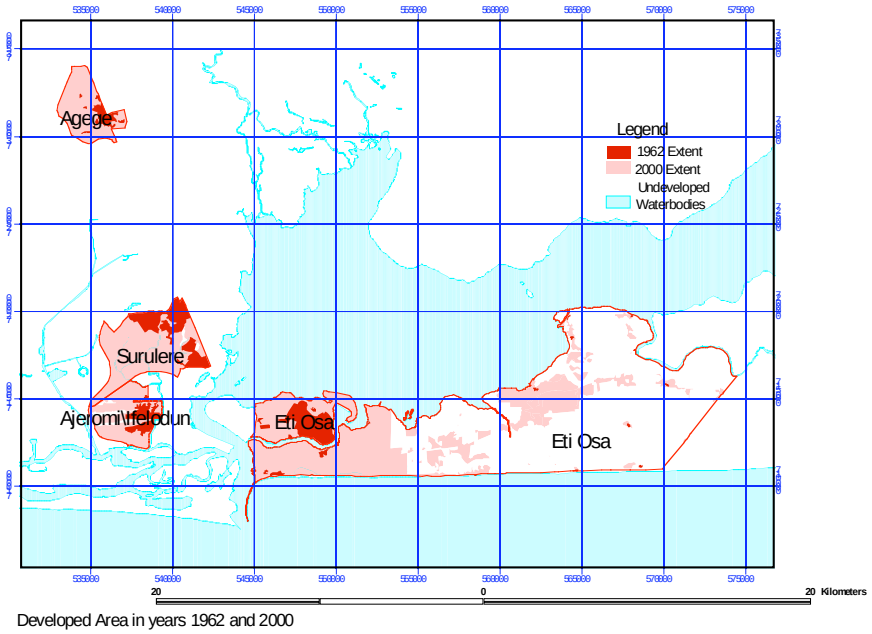


Figure 21. Developed Areas in 1962 and 2000 Compared

7.1.3.1. The Satellite imagery and GIS Implications for development

Agege LGA

Arising from high level of immigration, the LGA had been fully occupied with buildings even though many of then had not been completed. Challenges of infrastructural update was very feasible along with the background of mostly uncontrolled development patterns for an area of about 1,117.3 ha and a population density of 48,090 persons per sq. km. This attested to the influx of people to the LGA given its location as a major gateway to Lagos metropolis. The satellite image of 2000 that was available had been further compounded with higher population density four years after i.e. 2004/5 when the survey data were collected.

Surulere LGA

This is a medium population and traffic LGA which was almost totally developed and had the problems of infrastructure upgrade despite the fact that most house allocations were still government supervised.

It battles with a population density of about 25,000 persons per sq. km which had increased astronomically by 2004.

Ajeromi/Ifelodun LGA

During the survey this LGA was an emblem of environmental decay and high population density. The highest number of heaps of refuse were not only found there but also depicted a classical urban sprawl, a near totally built-up area. Major challenges were those of urban renewal and infrastructure maintenance and upgrade. The LGA has one of the highest population densities in the country at 64,057 persons per sq. km

Eti-Osa

The LGA is growing bigger in land area. About 628ha were from reclaimed lagoon water area and several from wetlands in the study period. Although only about 32% of the LGA was still developed in 2000, the high prices of such reclaimed area, however has prompted infrastructural development in the areas reclaimed as opposed to other areas. Given these economic factors, population density has been very low with attendant low pressure on infrastructure. Nevertheless, the area had turned to more of commercial rather than the residential design it was meant for. The LGA had therefore served as points of employment sources for the elites and far less for the unskilled or even the semi skilled migrants.

Furthermore, there were pockets of developments by individuals on marginal lands such as wetlands and high on marginal lands in non-government excised

areas which may be an indication of a big slum in the making. Already, several pockets of shanties were found in the LGA.

7.1.4. Environmental Consequences of rural-urban migration in Lagos

A large proportion of the respondents (42%) in Lagos lived in buildings with rooms facing each other often called in Nigeria as "face-me-I-face you houses" and flats (34%) as shown in Figure 22. Even though most of the respondents (50%) felt that in terms of general aesthetics, Lagos of 2003 was better than 1995, they were not happy about the state of decadence and poor maintenance of the environment e.g. poor drainage facilities (gutters), refuse dump sites, pervading smell, etc which often led to floods and bad roads (Table 6).

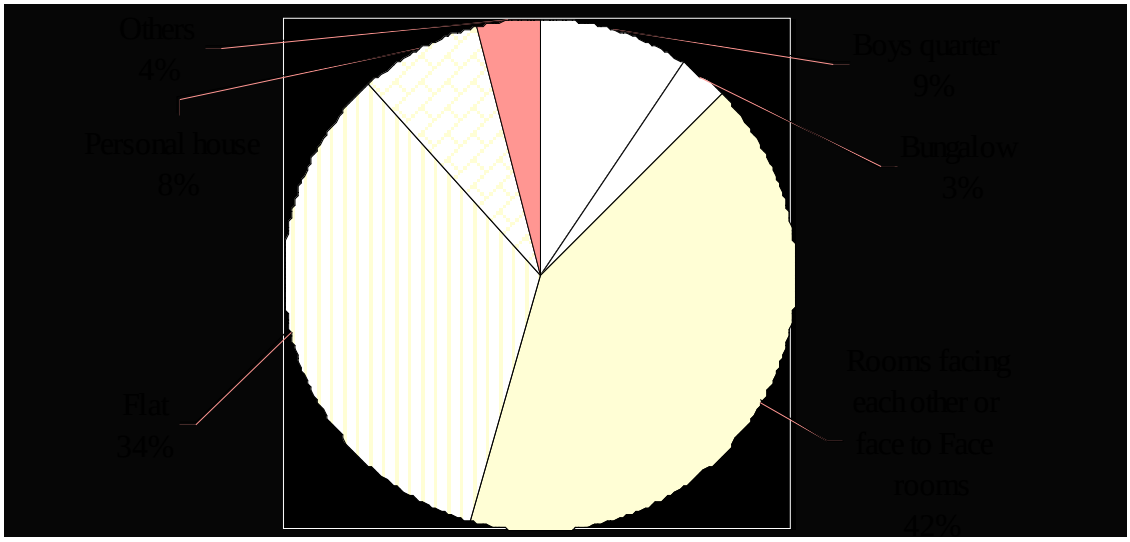


Figure 22. Types of housing the migrants live in Lagos

Table 6. Perception of environmental problems in Lagos between 1995 and 2003 given the influx of migrants (N = 350)

	general aesthetics	gutters	Smell
1995 better than 2003	38.0	42.0	41.7
2003 better than 1995	50.0	48.3	41.7
There is no difference	10.6	8.3	15.1
No response	1.4	1.4	1.8

As shown in Figure 23, about 62% of the respondents observed several dump sites in their areas of abode while 38% did not. This division was along the lines of relative income disparity of different locations from which the respondents were drawn. Even so, 51% of the respondents opined that there has been an increase in the number of dumpsites in their areas of abode in the last one year which may be attributable to increases in the number of people living in the area (Table 7). Even though, about 8 % of the respondents' claimed that the dump sites in their areas of abode were never evacuated (Table 8), almost 46% said that they made private arrangements to evacuate the dumps in their areas. The fact that over 27% of the respondents recognized and mentioned government as being responsible for evacuating waste dumps in their areas suggest that some public funds are committed to handling solid waste in Lagos which had not yielded much but needed to be intensified.

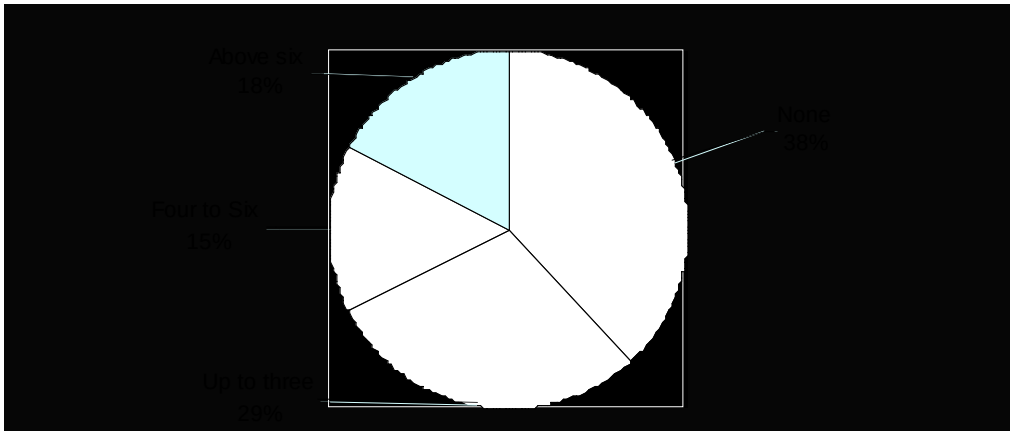


Figure 23. Number of waste dump sites, respondents observed in their areas of abode in Lagos

Table 7. Reasons adduced for increases in the number of dumpsites in their areas of abode

Reason	Frequency	Percent
Care free attitude of people	22	6.3
Increase in number of people	144	41.1
lack of government action	40	11.4
Don't Know	144	41.1
Total	350	100.0

Table 8. Methods of evacuation of waste dumps in respondents' areas of residence

Method	Frequency	Percent
Burning	3	0.9
By run off water	13	3.7
By the State government	29	8.3
By the Local government	67	19.1
By community effort	49	14.0
Not evacuated at all	29	8.3
Private	160	45.7
Total	350	100

7.1.5. Health consequences of rural-urban migration in Lagos

Respondents in this study perceived typhoid, depression, hypertension and headache as the most prevalent diseases that they cope with in Lagos compared to their places of orientation/origin (Figure 24). More respondents explained that they cope with these diseases by visiting the native doctor, and buying medicine in shops of choice in Lagos, but use the hospitals, herbs and roots and visit spiritual healers in their places of origin (Table 9).

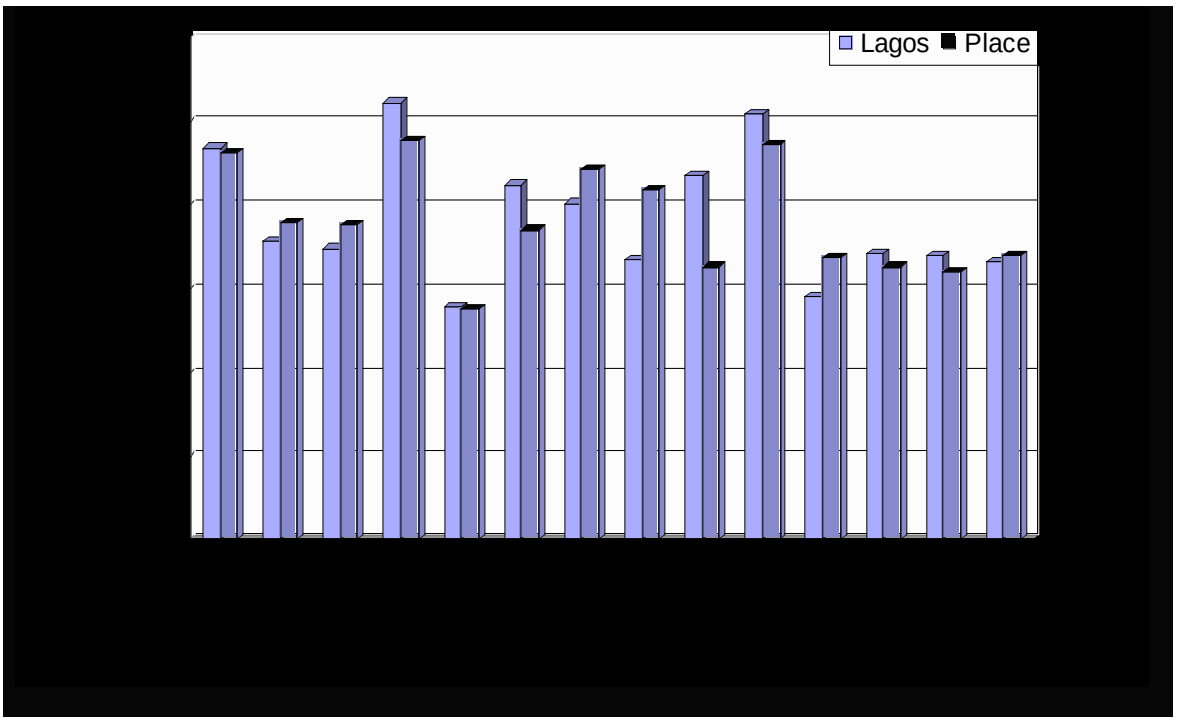


Figure 24. Migrants' perception of the prevalence of selected diseases in Lagos and their places of origin

Table 9. Sources of Treatment of Diseases normally used by respondents

Treatment type	Your place of origin	Lagos, where you live	Remark
Visit Native doctor	62.6	49.7	More common in Lagos
Herbs and roots	80.3	77.7	Less common in Lagos
Buy medicine at shops of choice	80.9	84.0	More common in Lagos
Go to hospital	80.6	77.7	Less common in Lagos
Visit my spiritual healers	56.3	50.0	Less common in Lagos

7.1.6. Assessment of the effects of environmental pollution on street food and water quality in Lagos

The objectives of this section of the study are to:

1. assess the quality of food being consumed by people,
2. assess the quality of drinking water in the study area, and
3. evaluate the effect of environmental pollution on food and water samples in the study area.

The study revealed that roasted plantain in low income and high population Kosofe LGA had the highest level of contaminants such as Lead (Pb), Cadmium (Cd), Zinc (Zn) and Iron (Fe). The lowest value was in high income and low population Eti-Osa LGA. The WHO guideline limits for drinking water quality are 0.001mg/L, 0.005mg/L,5.0mg/L and 0.3mg/L for Lead, Cadmium, Zinc and Iron respectively. The results of the physico-chemical characteristics of roasted plantain are shown on Table 11. In all the sample sites, the aerobic mesophilic organisms mould and *staphylococcus aureus* were present in all the samples (Table 11). The aerobic mesophilic organisms ranged between 680 CFU/g in V1 – 3 to 752 CFU/g in Ko – 3. Similarly, mould ranged between 40 cfu/g in V1 – 1 to 62 CFU/g in Ko – 1. *Staphylococcus aureus* occurrence was highest for Ko – 3 while no growth was observed for Vl – 1 and Vl-3. The results of the physico-chemical analysis as well as the microbiological analysis of domestic water samples are shown on Tables 13 and 14 respectively, for the three LGAs (Kosofe – KO, Suru-Lere – SU and Eti-Osa – Vl)

Table 10: Physico-Chemical Characteristics of Roasted Plantain: Lagos

General Description	VI – 1	VI – 3	SU - 1	SU – 3	KO – 1	KO - 2
Odour and Taste	Characteristics of the Product					
Moisture %	8.0	8.7	8.2	8.3	8.1	8.2
Total Ash %	2.2	2.5	2.2	2.3	2.3	2.1
Fat %	1.3	1.7	1.2	1.3	0.7	0.9
Crude Protein (%N x 6.25)	2.1	1.8	2.0	2.1	2.0	2.3
Lead (μg/g)	0.2	0.2	60.0	90.0	150.0	120.0
Cadmium (μg/g)	N. D	N. D	N. D	0.8	10.0	25.0
Zinc (μg/g)	N. D	N. D	N. D	N. D	2.0	7.0
Iron (μg/g)	0.4	0.3	11.2	10.9	15.0	12.0

N. D. means Not Detected

Table 11: Microbial Characteristics of Roasted Plantain: Lagos

Microbial Group	VI – 1	VI – 3	SU - 1	SU – 3	KO – 1	KO – 3
Aerobic Mesophylic Organisms	725	680	720	717	731	752
Mould [CFU/g]	40	51	53	57	62	58
Coliform [MPN/100g]	0	0	0	0	0	0
E coli [MPN/100g]	0	0	0	0	0	0
Staphyloccocus aureus CFU/g	0	8	4	3	9	11

The temperature of the water samples was slightly higher than the recommended in all the sites. This can be attributed to the relatively high ambient air temperature in the tropics as against the normal 20^{o}C in the temperate regions. The pH was also generally within the range recommended with the exception of Ko – 4 and SU – 4 that were slightly acidic. The acidification may probably be due to gaseous emissions fall out into major water bodies. This implies also that such water may have negative effects on man and his environment. The conductivity values lie within the limit recommended by WHO (1994) and this agree with the low dissolved solids values of the water samples since there is a direct correlation between conductivity and dissolved solids.

Alkalinity and chloride values in V1 – 4 were especially high. This may be due to soil formation around the area as well as the saline water from the ocean. Chloride has been found to be associated with high blood pressure as well as electrolyte imbalance in man. Generally, all the water samples had lead pollution. Levels of lead were higher than the acceptable values. This may be attributed to metal pipes, raw water source, storage tanks amongst others. The result of the microbiological analysis of water samples are presented on Table 13. All the water samples were contaminated with aerobic mesophilic organisms. Samples Ko – 1 Ko – 3 were heavily polluted with coliform which is an indication that the samples had faecal pollution. This suggests that associated health problems of such pollution may be prevalent in the sample areas.

Table 12: Physico-Chemical Analysis of Domestic Water Samples: Lagos

Parameter	V1-1	V1-2	V1-3	V1-4	V1-5	SU-1	SU-2	SU-3	SU-4	Ko-1	Ko-2	Ko
Temperature (°C)	26.8	28.9	26.4	27.0	27.2	26.4	26.8	26.9	26.8	26.7	27.2	26
pH	7.01	6.58	6.88	6.92	6.43	6.58	6.85	7.19	6.12	6.88	6.87	7.4
Conductivity (μScm^{-1})	182	114	165	173	450	283	164	163	113	166	162	16
Alkalinity (mg/L)	350	15	80	345	15	55	35	35	30	35	35	35
Chloride (mg/L)	11	27	10	280	128	28	11	19	20	19	20	19
Dissolved Solids (mg/L)	0.0002	0.0008	0.0012	0.0026	0.0006	0.0090	0.0008	0.0002	0.0031	0.0002	0.0002	0.0
Total Hardness (mg/L)	560	70	10	65	135	9	13	18	13	13	16	11
Lead (mg/L)	0.74	0.51	0.32	0.02	0.23	0.32	0.31	0.27	0.26	099	0.69	0.5
Iron (mg/L)	0.15	N. D	N. D	N. D	0.58	0.43	0.41	0.07	N. D	0.45	0.20	0.0
Nitrat (mg/L)	4.19	4.23	4.20	4.55	4.21	4.87	4.96	4.82	4.91	4.49	4.68	4.2

Table 13: Microbiological Characteristics of Domestic Water Samples: Lagos

Microbial	V1-	V1-	V1-	V1-	V1-	SU-	SU-	SU-	SU-	Ko-	Ko-	Ko-	Ko-	Ko-	WHO

Group	1	2	3	4	5	1	2	3	4	1	2	3	4	5	Standard
Aerobic Mesophilic Organisms (CFU/ml)	22	22	15	23	32	38	42	38	43	42	47	51	43	49	Zero
Mould (CFU/ml)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Zero
Coliform (MPN/100ml)	0	0	0	0	0	10	9	8	8	28	15	13	15	20	Zero
E. coli (MPN/100ml)	0	0	0	0	0	6	7	4	7	10	8	8	7	9	Zero

7.1.7 Lagos Government officials' Views and Plans

Officials of the State and Local Governments presented a picture that they were capable of solving the problems emanating from rapid rural urban migration in their various areas of jurisdiction. They all alluded to the fact that rural migrants were in socio-economic terms generally better off in Lagos than in their places of origin, even though they contributed to the environmental degradation of Lagos. The main attractions to the migrants were the economic opportunities available in Lagos as many unemployed people could get jobs in the metropolis shortly after arrival in Lagos. Selling is done at random and in any location given the population and hence the demand. However such marketing and the required places of abode were haphazard. In particular the officials of the State Ministry of Housing and the Urban Renewal Agency opined that it was difficult to control the emergence of poorly planned and constructed shops and houses which in many occasions have no approved plans. More often than not they had to result to destroying such places after giving repeated notices/warnings and at times long litigations. Most of such structures/houses without approved plans were in low income and high population LGAs such as Agege, Ajeromi, Mushin, Kosofe, etc.

As regards social and physical infrastructure inadequacy, the officials reported that it was difficult to provide to all areas particularly since people just built their houses in areas where the Governments had no plan to develop at that time people moved there. It was opined that even though the governments have plans to transform Lagos to a big city with excellent environmental scene they were constrained with limited finance given the pace of migration to Lagos and the associated problems.

The State government committed 5% of its 2003 annual budget to housing and urban renewal but this declined to 3.5% in 2004, although in magnitude it was higher. Given the rate of inflation in Nigeria and the increasing impact of rural urban migration on yearly basis, this was only a scratch on the back. The State government engaged in the construction of houses but these were basically for middle and high income earners. It must be stated that the infighting between the State and the Federal governments on the management, ownership and control of infrastructures in Lagos State would have lent its weight on the state of decadence of these infrastructures in Lagos. Some areas were designated as federal roads and some state roads. Cleaning, repair works and clearing of refuse were so divided to the extent that many roads were submerged with refuse and many public places/areas not catered for.

Most of the he Local government chairmen spoken with agreed that it was their responsibility to evacuate refuse but opined that the people needed to cooperate for the success of such a task. A degree of reorientation and psychological changes are required and this is often compounded with new migrants to their localities who either because of their level of poverty or their previous practices back home were used to dumping wastes at their backyards. They concluded that clearing of refuse should be a joint responsibility of the State and the Local governments given the enormous costs involved in making Lagos clean.
About 65% of the officials indicated that they observed more people moving into their areas after festivities, such as early in the year, January or after the end of academic sessions. These periods should be targeted and proper steps put in place to minimize any negative impacts.

The State officials proposed that the level of environmental decadence in the state should qualify Lagos State to benefit from the 13% environmental or ecological fund which many oil producing States in Nigeria are getting. This they argued would enable them to construct roads and drainages, build bridges and provide portable water to their communities.

7.2. PLACES OF ORIGIN

7.2.1. Socio-Economic Issues

7.2.1.1 Description of respondents in the places of origin

As shown in Table 14, most of the respondents in the places of origin were male (65.6%). Those less than 45 years old were 69.4%, married with one wife (62.8%)

and had at least primary school education (88.3%). This finding concurs with those of Adebayo and Aromolaran (2005), except for education where they found over 30% of their respondents did not have formal education. The results are also comparable with those of the sample drawn in Lagos metropolis where most of the respondents were married with one wife (Okuneye et al, 2004).

As reported earlier, the major occupations of the migrants in their places of origin were artisan, farming, trading and teaching. In fact, 46.2% of the respondents in the places of origin had farming or trading as their minor occupations (Table 14) and over 80% earned less than an average of N5, 000 per month from their major and minor occupations. Also, many of them had spent between 1 and 10 years in other places (Figure 25) seeking paid employment (46.1%) or higher education (22.8%) similar to migrants in Lagos which qualify them to be termed return migrants. This is more so when almost 90% claimed to have been to Lagos at least once (Figure 26). These occasional travels to Lagos were depicted in Figure 27 as pronounced in around 1980, 1990 and the period after 2000. As these periods coincided with periods of relative Civil Rule, second Republic (1979-83), third Republic (1990-92) and the fourth Republic (1999 to date), there is an inkling to suggest that migration to Lagos might be related to Civil Rule, among other factors.

Most of the respondents in places of origin lived in houses made of cement blocks and roofed with corrugated iron or asbestos where rooms are shared mostly by 2 or more persons (Table 15) in typical buildings where the rooms, in two parallel rows, face each other (face-to-face rooms). Over 50% have pit latrines even though almost 30% were using nearby bushes as toilet facilities. Most of the respondents at the places of origin lived in either rented houses or in their parents' (family) houses and a few had indoor toilet and indoor kitchen facilities. The proportion of respondents in places of origin who owned personal houses (13.3%) was comparable to those of migrants who owned personal houses in Lagos metropolis (8%) as shown above.

Table 14. Some socio-economic characteristics of respondents in the places of origin (N = 180)

Characteristics	Percentage (%)
Gender	65.6% Male
Age (years)	69.4% between 15 and 45 years old
Marital status	62.8% married with one wife
Highest educational qualification	24.4% Primary School Cert and 31.1% Secondary School Cert.
Occupation	27.2% Artisan, Farming 24.5%, 21.7% Trading and 18.3% Teaching

Income	80.6% Less than N5,000.00/month

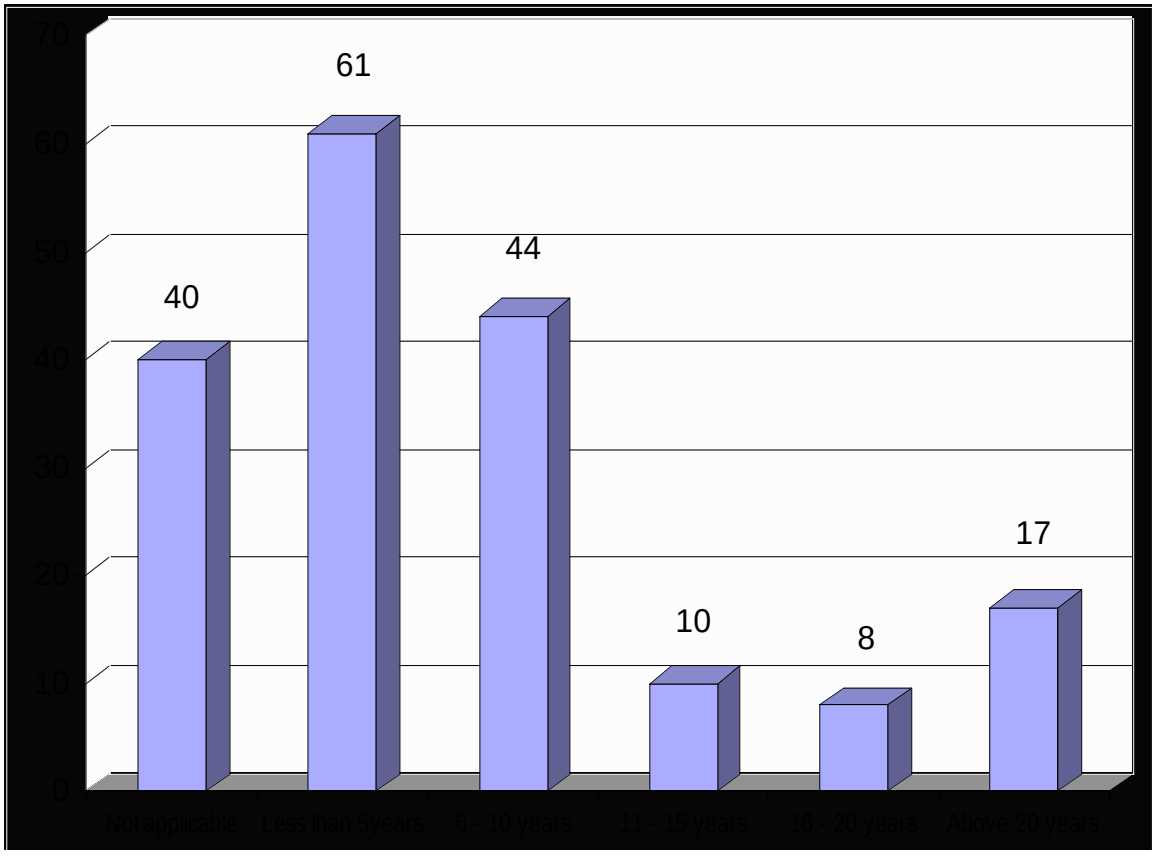


Figure 25 Length of time spent out of town/village by respondents in places of origin

Table 15 Description of the house types and living situations of respondents in places of origin

Variables	Percentage (%)
House type	48.9% made of bocks
Number of people sharing room	53.3% less than 2 persons per room
Toilet type	51.1% pit latrine
Living condition	28.3% were Living in rented houses; 26.1% were living in family houses

Table 16 Main reasons given by respondents at places of origin for travelling out of town

Reason	Frequency	Percentage (%)
Job	83	46.1
Higher Education	41	22.8
Followed Relatives	12	6.7
Apprentice	13	7.2
Enjoy social amenities	8	4.4
Born there	6	3.3
Marriage	2	1.1
Visit a relation	4	2.2
Others	11	6.1

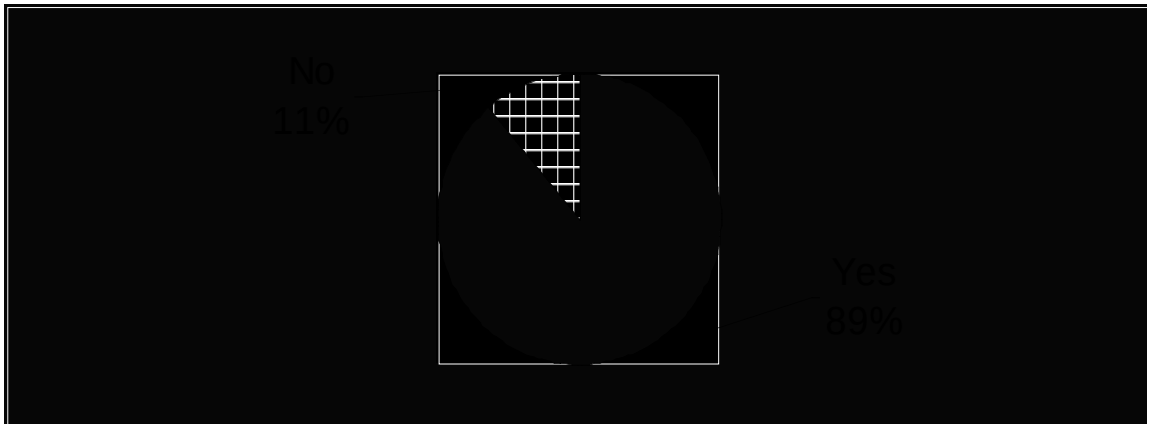


Figure 26. Proportion of respondents from places of origin who had been to Lagos

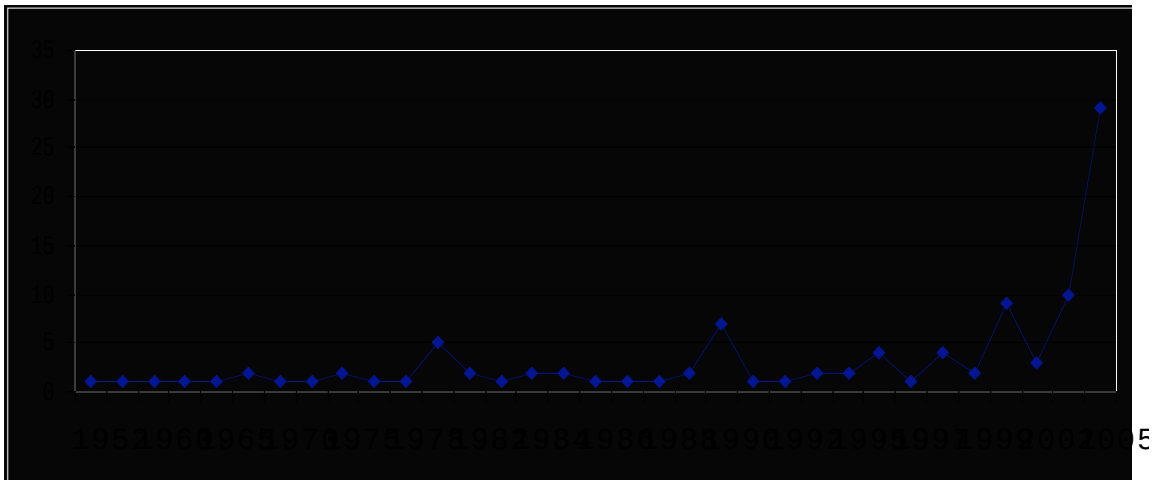


Figure 27. The trend of journeys to Lagos by respondents in the places of origin

7.2.1.2. Non migrants' opinions on migrants and migration

About half of the respondents in the places of origin were heads of households. The respondents pointed out that there were more adult migrants in their families than young migrants (Figure 28). Given our definition of adults as persons more than 18 years old, this finding does not conflict with the already established fact in literature that the relatively younger members of rural societies tend to migrate more than older ones. They also opined that the commonest place that migrants moved to is Lagos (Table 21) usually in search of employment and further educational opportunities (Table 22. This suggests a confirmation of the earlier findings in the Lagos survey that migrants to Lagos came mainly from the States and LGAs sampled for this survey. Other cities that migrants moved to are Ibadan and Abuja.

Table 17 Major and minor occupations of respondents from selected places of origin (N = 180)

Occupation	Major	Minor
Artisan	27.2	2.8
Trading	21.7	20.6
Teaching	18.3	1.1
Farming	8.9	25.6
Professional	6.1	0.0
Driving	6.1	5.6
Public Servant	5.0	0.0
Student	2.2	0.6
Contractor	1.7	1.1
Herbalist	1.1	1.1
Others	3.9	2.8

None	0.0	38.9

As expected, most of the respondents in the places of origin were making more money from their major occupation than from their minor occupations (Table 18). Nearly all the respondents (about 90%) earned less than N25, 000 from either their major and minor occupations.

Table 18 Income from major and minor occupations of respondents from selected places of origin (N = 180)

Income per Month (N)	From major occupation (%)	From minor occupation (%)
Less than N5,000.00	52.2	80.6
5,000.01 – 25,000.00	36.1	18.3
25, 000.01 – 50,000.00	10.6	1.1
Above 50,000.00	1.1	0.0

Table 19 Main reasons given by respondents at places of origin for travelling out of town

Reason	Frequency	Percent
Job	83	46.1
Higher Education	41	22.8
Followed Relatives	12	6.7
Apprentice	13	7.2
Enjoy social amenities	8	4.4
Born there	6	3.3
Marriage	2	1.1
Visit a relation	4	2.2

Not applicable	11	6.1

Table 20 Description of the house types and living situations of respondents in places of origin

House type	Frequency	Percent
Thatched	4	2.2
Mud House	29	16.1
Cement Block	88	48.9
Corrugated iron sheets	32	17.8
Asbestos roof sheets	24	13.3
Number of people sharing room		
2 persons	96	53.3
Up to 4 persons	58	32.2
Up to 6 persons	23	12.8
More than 6 persons	3	1.7
Toilet type		
None	1	0.6
Bush	51	28.3
Pit latrine	92	51.1
Water Closet	35	19.4
Others	1	0.6
Living condition		
personal house	24	13.3
rented house	51	28.3
Parents'/family house	47	26.1
Have indoor toilet	25	13.9
Have indoor kitchen	33	18.3

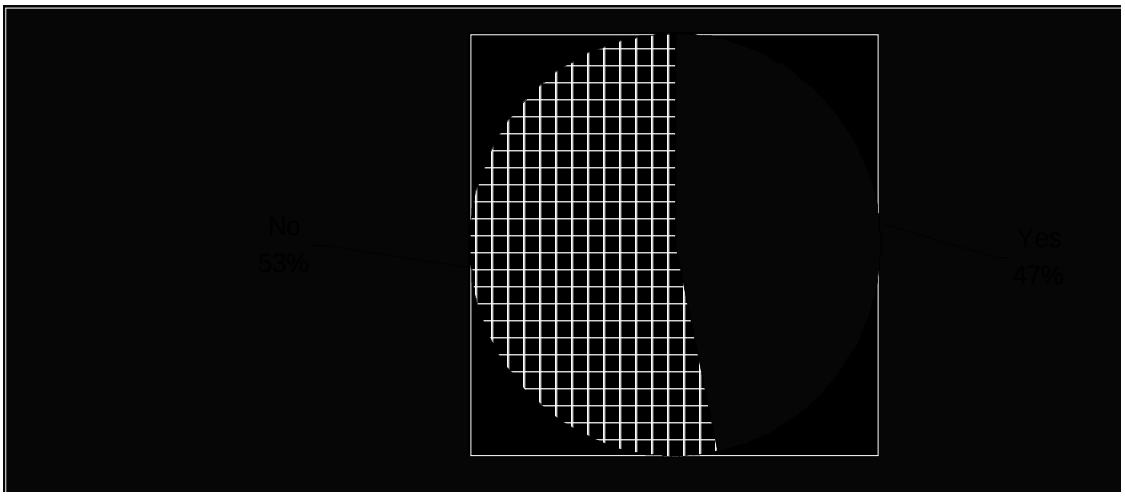


Figure 29. Family headship among respondents in places of origin

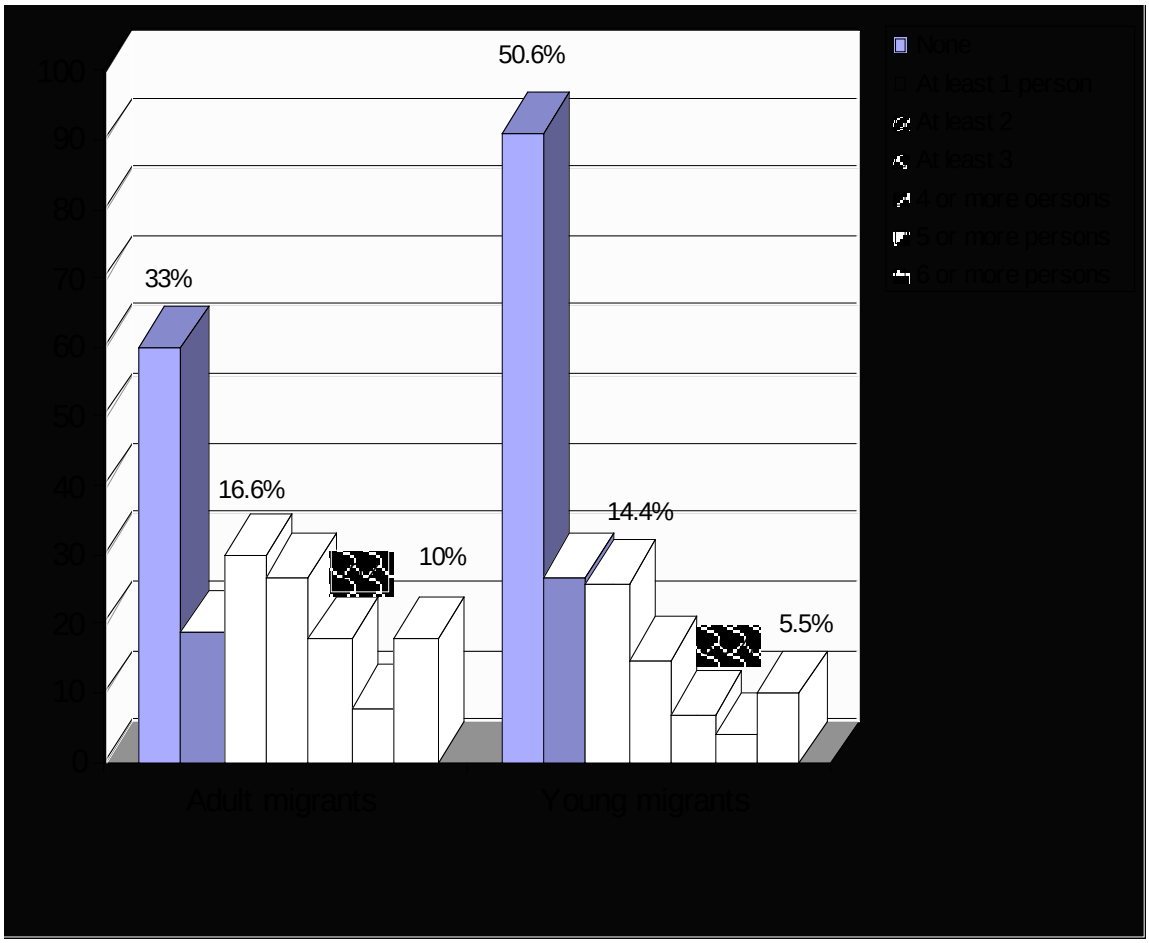


Figure 30 Number of Households with either adult or youth migrants.
Note: About 33% of the households had no adult migrants while 50.6% had no youth migrants.

Table 21. Major places that migrants move to as reported by respondents in the places of origin

Place	Frequency	Percent
Lagos	89	49.4
Ibadan	17	9.4
Abuja	7	3.9
Oyo	3	1.7
School	3	1.7
Northern Nigeria	5	2.8
Eastern Nigeria	2	1.1
Overseas	2	1.1
Others	12	6.7
No response	40	22.2

Table 22. Non-migrants' perception of the reasons why people migrate

	Frequency	Percent
Look for Job	85	48..3
Education	53	29.4
Marriage	4	2.2
Social Amenities	4	2.2
Apprentice	2	1.1
Join relations	2	1.1
Business	1	0.6
Pastoral Job	1	0.6
Take care of family	1	0.6
To join their family	1	0.6
Don't know	27	12.8

Over half of the respondents in the places of origin claimed that migrants are better off than them in socio-economic terms; however only about 30% stated that they obtained assistance from migrants. The average amount received from migrants was N2, 132.73K which was last received by 12.1% of the respondents in 2005. The amount received from migrants in Lagos (N3, 428.57K)

was higher than the collective average remittance from migrants generally. This amount was received by 13.3% of the respondents in 2005. Conversely, 18% of the respondents claimed to send food to the migrants. The worth of food sent to migrants in cities generally averaged N1, 878.93 while the average worth of food sent to migrants in Lagos was worth N3, 091.27. The results in Tables 23 and 24 indicate a net inflow of remittances to the rural locations from cities. This may explain why rural-urban migration persists in human societies. Partly arising from this, more than half of the respondents were planning to leave the village/ town with 35% of them planning to move to Lagos. When compared with the finding in the Lagos survey where the migrants said they were planning to bring more of their relations, there would likely be a greater influx of migrants into Lagos in the near future for which adequate and conscientious plans must be put in place.

Table 23 The perception of respondents in places of origin on the socio-economic status of migrants (N = 180)

Issues	
Are migrants better off in socio-economic terms?	56.7% Yes
Do you receive assistance from migrants?	30.6% Yes
Average amount received from migrants (Naira per month)	2,132.73
When last was assistance received from migrants?	12.1% in 2005
Average amount received from migrants in Lagos (naira/month)	3,428.57
When last was assistance received from migrants in Lagos?	13.3% in 2005
Do respondents give food to migrants in cities?	18.1% Yes
Average worth of food given to migrants in cities (naira/month)	1,878.93
When last was food given to migrants in cities?	9.4% in 2005
Average worth of food given to migrants in Lagos (naira/month)	3,091.27
When last was food given to migrants in Lagos?	5.6% in 2005

Table 24 Comparative Analysis of benefits Received by Migrants and Non-Migrants in Naira (N)

Valued Items	All Migrants	Lagos migrants
Cash Received by Non-Migrants from (N)	2, 132:73	3, 428:57
Food Sent by Non-Migrants to (N)	1, 878:93	3, 091:27
Net Benefits to rural Household (N/month)	253:38	337:30
Yearly Net benefits Per rural Household (N)	3, 045:6	4, 047:6

7.2.2. Consumption and Expenditure patterns of Respondents in the places of origin

Table 25 shows the consumption and expenditure pattern of respondents in places of origin. When compared with similar information obtained from respondents in Lagos metropolis (Okuneye, et al., 2004), some disparities exist between the perception of consumption and expenditure of these items. Generally, the respondents in the places of origin appeared to consume and spend more on food than non-food items, that is, their Marginal Propensity to Consume (MPC) food is higher.

7.2.3. Environmental and Health problems in the places of origin

Respondents in the places of origin reported that malaria, headache, typhoid and cough were the prevalent diseases in their places of residence (Figure 31). These conditions were also reported in the Lagos study. The Lagos survey however, also showed that diarrhoea, dysentery, depression, cholera, stroke, diabetes and tuberculosis were common in Lagos. These findings suggest that migrants in Lagos suffer more disease conditions than in their places origin.

In terms of the treatment options in common use, herbs and roots, medical drugs and hospitals were reported to be in common use in the places of origin. The preferred choices in the Lagos survey were exactly the same.

About half of the respondents in the places of origin indicated that in terms of general aesthetics, their towns/villages were better in 1995 than 2004, but that the drainages/gutters were better in 2004 than in 1995 (Table 26). This finding

contrasts vividly with that of the Lagos survey. The respondents in Lagos perceived Lagos as better in 2003 than in 1995 for general aesthetics and gutters, even though, they too were not so consenting in terms of smell and misty nights.

7.2.3.1. Living conditions in places of origin

Most of the respondents in the places of origin (83.9%) ate regularly at home (Table 27). Only about 30% said they ate occasionally at restaurants and roadside joints and almost 95% did not eat anywhere else. This result is similar to that reported in Okuneye, et al (2004) on the Lagos survey.

Table 25. Consumption and expenditure patterns of households in the places of origin

Item	Average Quantity consumed (Units/month)	Price (Naira)	No. of times taken per week
Rice	9.85	483.82	4
Garri	7.64	231.71	4
Beans	11.31	335.90	3
Yam	28.40	301.42	6
Beef	190.83	254.81	2
Pork	7.07	12.94	1
Chicken	15.46	82.10	6
Fish	178.04	304.07	6
Eggs (number)	7.14	73.56	2
Vegetables(bundles)	30.57	52.04	4
Margarine	1.26	18.82	1
Butter	1.56	18.24	1
Fruits	15.43	22.21	2
Milk	51.81	123.19	2
Electricity	214.07	336.74	71
Gas	180.17	16.36	6
Rent on Housing	285.64	334.79	1
Transportation	305.57	410.39	77

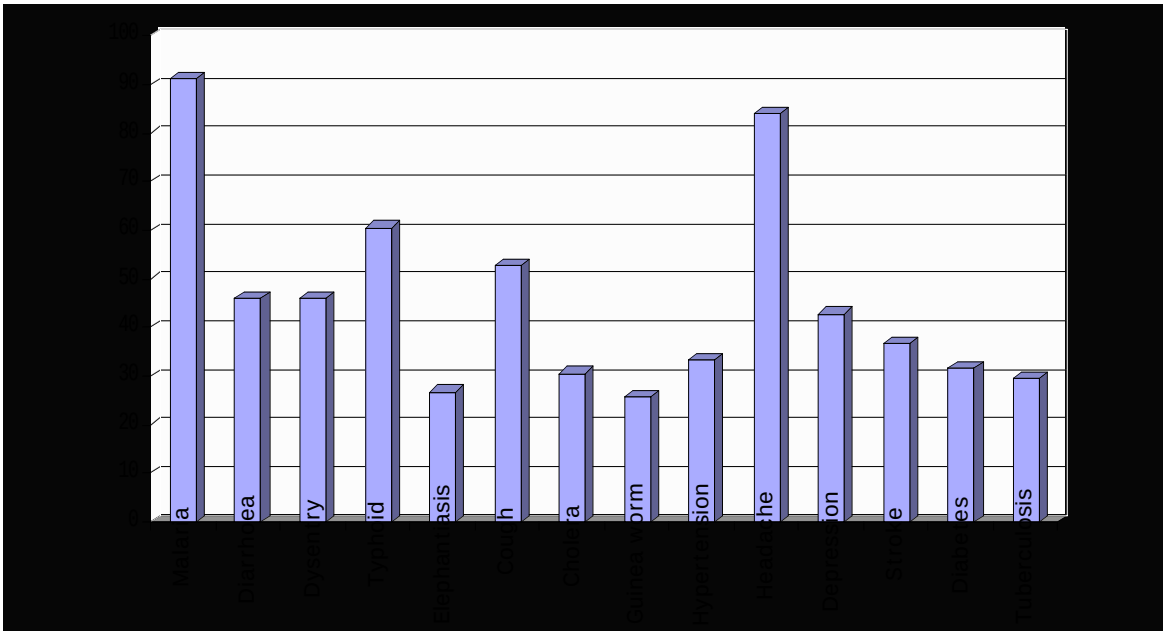


Figure 31 Non-migrants' perception of the prevalence of various diseases in the places of origin

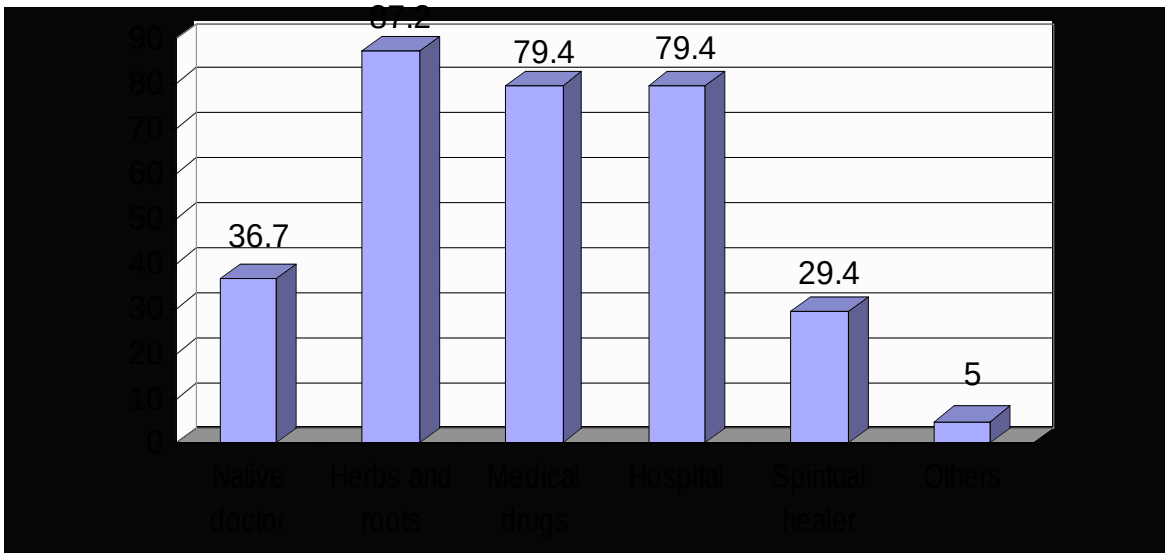


Figure 32 Frequency of use of treatment option for diseases in places of origin

Table 26. Perception of environmental problems in the places of origin between 1995 and 2004 in Percentages (%) (N = 180)

Perception	General aesthetics	Gutters	Smell (odour)
1995 better than 2004	50.6	25.0	25.6
2004 better than 1995	33.9	48.4	31.1
There is no difference	10.0	16.7	21.1
No response	5.6	10.0	22.3

Table 27. Regularity (%) of use of various eating patterns amongst respondents in the places of origin (N = 180)

Eating pattern	Never	Rarely	Occasionally	Regularly
Cook at home	1.2	4.4	10.6	83.9
Restaurant	44.0	19.4	31.1	5.6
Roadside joint	32.2	27.2	27.2	13.4

The state of development and the living conditions in the places of origin varied significantly. As shown in Table 28, about 38% of the respondents in the places of origin observed between 1-10 new houses in their areas of abode since 2000 and over 80% observed many people moving into their areas of abode recently and noted that house rent had increased in the last one year with average rent doubling between 2004 and 2005. Some respondents also noted that waste dump sites had increased in the last one year around their areas of abode due mainly to lack of control and increase in the number of people resident in the area. However, unlike the migrants in Lagos, where government was responsible for evacuating waste dumps (Adebayo, et al, 2005), the waste dumps in the places of origin were evacuated by burning, community efforts and runoff water (Table 28) suggesting that environmental problems may arise in the rural as in urban areas where changes in population dynamics are not monitored or used to influence the management of domestic wastes.

In terms of community facilities, most of the respondents in the places of origin had access to electricity facilities, bus/taxi services, tarred roads, primary and secondary school and the health centre even though these facilities particularly electricity and water were haphazardly provided. Furthermore, less than a third of the respondents in the places of origin confirmed the presence of tertiary institutions, industries, cinema, hotel, supermarket and incinerators (Table 29).

Nevertheless, more than half of the respondents were planning to leave the village/town (Figure 33) with 35% planning to move to Lagos (Figure 34) which suggests a greater influx of migrants into Lagos in the near future for which adequate and conscientious plans are required.

Table 28 Perception on development in places of origin

Item		
Number of new houses observed in the area since 2000		38.3% 1 – 10 houses
Had there been many people moving into your Place of abode recently?		85% Yes
Has the rent increased in the last one year?		81.7% Yes
Average house rent in 2004 (naira/month)		N380.78
Average house rent in 2005 (naira/month)		N625.59
Average number of dump sites in the area		2.53
Had the dump sites increased over the last one year?		45.6% Yes
Main reasons for increase in waste dump sites:		
Lack of control and increases in number of people		48.4%
How were these waste dumps evacuated?	Burning	41.7%
	Community effort	13.9%
	Run off water	12.8%
	Not evacuated at all	10.6%

Table 29. Proportion of Respondents Ascertaining the presence of Facilities in places of origin (N = 180)

Facilities	Percent*
Drainage	42.2
Playing ground	68.9
Primary school	82.2
Secondary school	73.9
Tertiary institution	31.1
Health centre	66.1
Cottage hospital	53.9
Bus/taxi	85.0
Pipe borne water	54.4
Electricity	83.3
Industries	23.9
Cinema home	21.7
Hotel	33.3
Restaurant	47.8
Supermarket	26.7
Stores/micro shops	50.6
Incinerator	8.9

* Multiple percentages. These serve as an indicator of the level of presence/availability of these facilities/Services in places of origin.

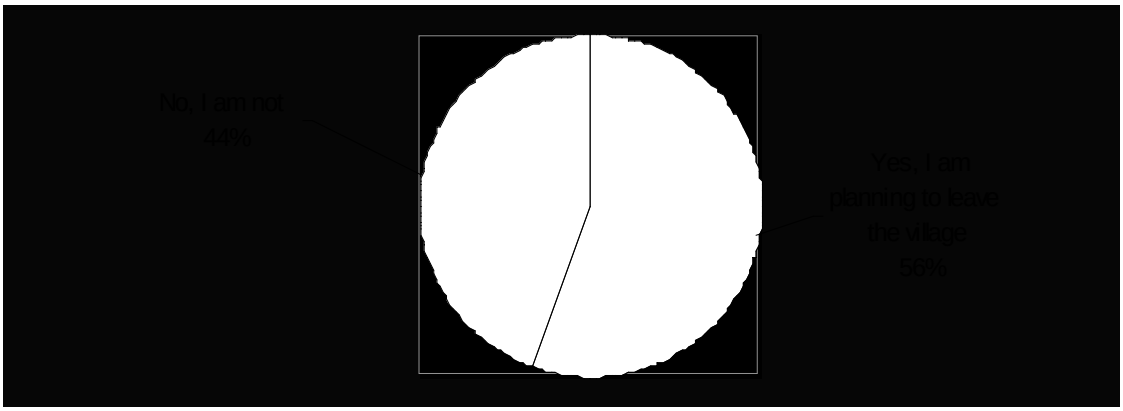


Figure 33 Proportion of respondents in the places of origin who are planning to move out of the village

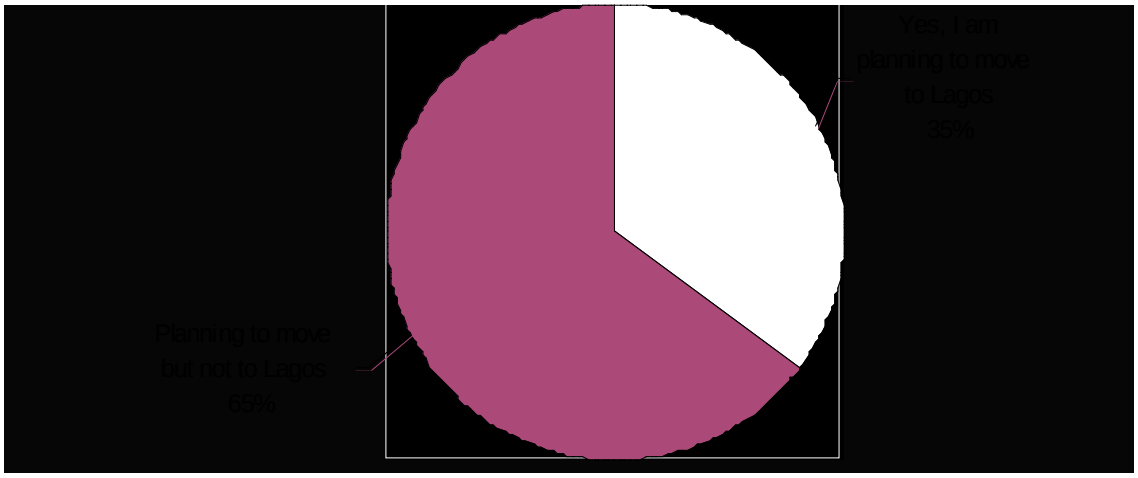


Figure 34 Proportion of respondents in the places of origin who are planning to move to Lagos

7.2.4. Environmental impacts on Domestic Water and Street Foods

The importance of domestic water in the health of the people cannot be overemphasised. The quality and safety of water and street foods can be largely influenced by the environmental factors dominant in an area.
The importance of street foods especially among workers has been reiterated in previous sections. Street vended foods can contribute significantly to food security of those involved in its production, particularly, suppliers of raw produce,

food processors, vendors and consumers (DFID, Undated). Despite its growing importance, it is a sector that has rarely been the focus of strategic research initiative to determine the importance and potential hazards of street vended food. The first phase of the study on street vended roasted plantain in Lagos implied adverse health consequences on consumers and this prompted this comparable study in migrants' states of origin.

Street vended roasted maize (*Zea mays*) was much more common in the places of origin of the migrants than roasted plantain. This was analysed since it was available in all the states investigated.

The study therefore attempted to investigate the qualities of street vended food items and water samples being consumed by people as well as the effect of environmental pollution on food and water samples in the places of origin of the migrants as a basis of comparison to the situation in Lagos. The three States chosen for the socio-economic analysis namely, Ogun, Oyo and Oshun States were used for the section. Three LGAs were also selected in each of the states with 3 sample locations. Street vended roasted maize and water samples were collected as composites from each of the sample locations. The samples were then analysed for physico-chemical as well as microbiological parameters.

Results and Discussion

The results of physico-chemical analysis of roasted maize showed that the food quality of product was not significantly affected adversely in terms of nutrient content. However, there were variations in levels of heavy metals in the product at the different sampling locations. Results are presented in tables 30 and 31.

Table 30: Physico-Chemical and microbiological Characteristics of roasted maize in three South Western States of Nigeria. (Mean Values)

State	Moisture %	Total Ash %	Fat %	Crude Protein %	Lead µg/g	Iron µg/g	Total Counts cfu/ml	Bacteria Isolated	Moulds Isolated
Ogun Location 1	11.6	3.1	3.9	8.7	0.045	11.58	**$1.31x10^4$**	*Klebsiella sp, Staphylococcus aureaus*	*Rhizopus stolonifer, Asperpergillus. niger, Penincillium spp*
Location 2	11.2	**2.9**	3.8	9.1	0.051	12.65	**$1.35x10^4$**	*S.aureaus, Proteus spp*	*Mucor mucedo,* Yeast, *Rhizopus sp*
Location 3	12.1	**2.8**	3.6	9.0	0.055	13.17	**$1.32x10^2$**	*S. aureaus*	*nil*
Oyo Location 1	11.8	**2.6**	3.5	**8.7**	0.038	9.55	**$1.7x10^3$**	*S.aureaus, Klebsiella sp*	*Rhizopus stolonifer*
Location 2	12.4	**2.6**	3.7	9.1	0.031	11.65	**$1.63x10^3$**	*S.aureaus, Proteus spp*	*Aspergillus niger,* Yeast
Location	12.1	**2.3**	3.3	**8.4**	0.04	11.5	**$1.58x10^4$**	*S.aureaus, Proteus sp*	Yeast

3					9	8			
Oshun Location 1	12.4	**2.9**	3.7	9.3	0.020	8.45	**1.51x10⁴**	S. aureaus	Rhiz. stolonifer, Penincillium sp.
Location 2	12.8	**2.8**	3.8	9.5	0.028	14.51	**2.1x10⁴**	Escherichia coli, S. aureaus	Rhiz stolonifer, Penincillium sp
Location 3	11.9	**2.6**	3.5	9.2	0.061	13.55	**2.0x10⁴**	Klebsiella sp, Micrococcus sp	A. niger, Yeast
Acceptabe Value	12-15 15	3	3-5	9-10			NIL	NIL	NIL

Table 31: Physico-chemical and microbiological Characteristics of domestic water in three south western states of Nigeria (Mean values)

State	Temp°C	pH	E/C µS/cm	Chloride mg/L	Alkalinity mg/L	Lead mg/L	Iron mg/L	Total Solids mg/L	Total Hardness mg/L	Coliform count cfu/ml
Ogun										
Location 1	24	7.48	41	13	**205**	**0.85**	0.15	**160**	38	**11**
Loation2	**27**	6.59	**620**	61	**100**	**0.32**	N.D	**180**	218	Sterile
Location3	**26**	7.39	53	11	**227**	**0.21**	N.D	**150**	49	**0.3**
Oyo										

Location1	**28**	7.49	**1235**	16	**570**	**0.62**	N.D	**70**	**622**	Sterile
Location2	**26**	7.23	**722**	137	**185**	**0.45**	N.D	**50**	275	**20**
Location3	**27**	6.70	**203**	173	**93**	**89**	0.02	**120**	45	**180**
Oshun										
Location1	**29**	7.59	**629**	14	**32**	**63**	0.04	**40**	106	**23**
Location2	**27**	**8.67**	**423**	67	**350**	**0.9**	0.01	**60**	220	**240**
Location 3	**26**	**8.52**	87	13	**95**	**10.2**	0.03	**90**	160	**25**
WHO Limit	25	6.5-8.5	150	250	30	0.001	0.3	_	500	0

There were however no definite pattern of variation amongst the states. However, within states, pollutants' levels seem to be higher in the urban areas than the rural areas in the three states.

Values of Lead in roasted maize ranged between 0.02µg/g and 0.061µg/g in all the sample locations; range of iron in same was between 8.45 and 14.51µg/g. Comparison of chemical pollutants (especially heavy metals) in the states with those of Lagos state showed that levels were considerably higher in the latter than the former. This may be attributed to higher vehicular traffic densities at Lagos than at the states of origin. This may be due to lead levels in Nigerian gasoline which has been reported to contain 0.4 to 0.8g/L (which is among the highest in the world) (Ogunsola et al, 1994a). Rankin et al (2005) also reported

that the emissions are reflected in the contamination of Nigerian dusts, plants and foods.

Total coliform count ranged between $1.32x10^2$cfu/ml and 2.10cfu/ml. Sources of pollutants likely to be processing method and atmospheric exposure since the pollutant have been documented to present in atmosphere (Ndiokwere, 1984). Some of the microorganisms that were isolated and identified include *Klebsiella sp Staphylococcus aureuas, Rhizopus stolonifer*, *Aspergillus niger, Penincillium spp, Proteus spp, Mucor mucedo,* Yeast, *Escherichia coli, Micrococcus spp*. There were variations in results of microbiological examination of roasted maize is in contrast to those of Lagos study. More species were identified and isolated at the states of origin than those of Lagos. This is an indication of less hygiene especially, environmental health. E. coli for instance is associated with feacal pollution and S.aureus is an indication of pollution arising from indiscriminate disposal of phlegm and sputum. By implication, personal and environmental hygiene is lacking or minimal at the states of origin.

Results of physico-chemical and microbiological analyses of water samples are presented in Table 16. Temperature ranged between 24^oC and 29^0Che sample locations. pH values in all locations fall within the WHO limit (6.5 – 8.5). Electrical conductivity values were above the WHO guidelines limit in almost all locations; this however indicates the presence of dissolved ions in the water samples. The trend was similar for chloride, alkalinity and hardness. Lead was present in all the

water samples at toxic levels (≥0.001) while the presence of iron was at trace levels in all samples.

Bamgbose et al (2001) reported that chemical changes or processes occurring along pipelines are factors that affect water quality.

All the samples (except two, one from Ogun and Oyo) were feacally contaminated as expressed by the presence of coliform in the samples.

Reasons for high values for chloride, alkalinity, may be alluded to the geological factors of the aquifers since most of the samples were from underground water sources. Furthermore, coliform count suggests faecal contamination through seepage of septic tanks to water aquifers. Sangodoyin(1993) reported that unsanitary mode of disposal of wastes, such as defecation in streams and the dumping of refuse in pits, rivers and drainage channels as seen in most Nigerian urban settlements, could be expected to affect surface and groundwater quality. The degree of contamination will depend on the efficiency of waste disposal methods, safety on land use patterns, density of disposal systems in an area, composition of waste and a number of other site-specific information.

Adverse effects of Lead include impairment of hearing ability, interference with the red blood cell formation leading to anaemia, renal failure, increased frequency of miscarriage and still births (Goyer, 1991). Pollution sources include those from emissions from leaded gasoline. Ajayi & Kamson (1983) reported that the emissions are reflected in contamination of Nigerian dusts, plants and foods

(Ndiokwere, 1984; Nriagu, 1992; Odukoya & Ajayi, 1987).It was however difficult to establish whether the high levels were waste impacted or from storage vessels. Proximity to septic tanks leachates has also been reported to be responsible. Almost all pollution indices in water are higher in the samples from states of origin than Lagos. This may be attributed to improved quality of domestic/commercial water supplies resulting from governmental agencies campaigns on the need for hygiene and water sanitation in Nigerian cities. It also implies that government and its agencies should attend to the problem of unavailability of potable water in rural areas; this also applies to other basic infrastructures which in most cases attract people to urban areas.

Conclusions and Prescriptive Issues

Worldwide, rural-urban migration has been a thing of concern to policy makers, development partners and researchers over the years. It is a major source of increased population and population pressure in many cities throughout the world. Such population dynamics often carry along tremendous impacts on the environment particularly in situations where infrastructures are not maintained or improved upon in resonance with the rate of population increases. An examination of the associated implications of such population dynamics on the environment, the migrants and the people in their areas of origin will throw light on the way consequences of (rapid) rural-urban migration and the way forward. As a pointer to the attendant problems and possible window of escape, this study examined the reasons, impacts and consequences of rural-urban migration on Lagos, a commercial nerve centre and a former capital city of Nigeria.

The study revealed that socio-economic factors, such as, better employment and educational opportunities, etc were the main reasons for people to migrate to Lagos. In fact unemployment fell seven fold among the migrants while in Lagos as compared with before leaving their places of origin. The living conditions were not considered as too as an important factor for migrating to Lagos. The level of poverty in the rural areas is a major factor driving migration to

Lagos. Moreover, it was found that once in Lagos, the diversity of occupational prospects becomes larger while none practised farming on getting to Lagos. This finding suggests that efforts at improving the practice of agriculture to make it more attractive can stem the direction of rural-urban migration in Nigeria. Similarly rural industrialization needs to be addressed to reduce the drudgery of agriculture and make the young ones to take up agriculture and remain in the rural areas.

Hence the hypothesis that the decision of a person to migrate is not dependent on the existing living situation in the place of origin should subsist.

The study showed that migrants were better off economically in Lagos at least nominally, when compared with before migration. The average earning per person before migrating to Lagos was N7, 027:50K as against N20, 795:75K while in Lagos. Even though inflation may not exactly permit one on one comparison of the Naira given the time value of money, migrants were better off than before going to Lagos. Hence the second hypothesis of there is no significant difference in the migrants' levels of income before and after migration, could be rejected.

It was clear from the study that the migrants were better off in terms of socio-economic characteristics as their living conditions were better than in their places of origin. This further corroborates the rejection of the earlier hypothesis and the rejection as well the third hypothesis that there is no significant difference in major socio-economic characteristics of migrants and their non-migrants counterparts.

Apart from the general observation, the perception of the respondents and particularly the remote sensing carried out mainly in Lagos, showed clearly that there had been substantial changes in the developmental phases of Lagos. In three of the four LGAs covered, there were 100% built up areas as against the low population and high income areas of Eti-Osa LGA where even though there had been some changes the built up areas were just about 50% when compared with 1960s and 1970s. In places of origin the development has not been as rapid in the last 20 years as that of Lagos where migrants focussed on. Despite the emigration from the rural areas the environmental situations did not improve but rather was worse than before as presented by the respondents. Some of the reasons that can be adduced for this phenomenon include the rate of growth in population and the usual neglect of the rural areas in many developing countries. It should be stated that the case of Lagos was also not better as far more people demand for the limited infrastructures than

they can cope with. The analyses of the samples of food and domestic water revealed lots of contaminations of hazardous materials which are very deadly. These contaminations arose from the environmental pollution which partly arose from the high population density and traffic in Lagos. Even though there were some differences in the environmental problems between the two areas they would not be significant. The fact that over 27% of the respondents recognized and mentioned government as being responsible for evacuating waste dumps in their areas suggest that some public funds were committed to handling solid waste in Lagos. Some scholars have argued that these funds can be better used if the waste problems of cities are not aggravated by migration. Furthermore, appropriate environmental economic instruments should have been invoked to minimise the negative impacts as these would stimulate the government, industries and the usual polluters.

The study revealed that almost all the roasted plantain and water samples analysed had one form of contamination or the other. This may explain the increased morbidity of diseases such as cancer, respiratory tract diseases, gastro – intestinal diseases amongst others especially amongst the low income earners. However, improved packaging and storage is recommended for the roasted plantain to protect the product from environmental bacterial contaminants. Alternative processing techniques should also be worked upon to avoid or at least, reduce heavy metal pollution of the product and consequently, the associated hazards to health. It is suggested that the quality of water samples be enhanced by using carbon/sand filters with ultra-violet irradiation to improve on portability. Further studies on endemic diseases/health problems of respondents may likely elucidate more information on the implications of environmental pollution on health.

This study opines that In order to address the environmental and health problems faced in Lagos and other cities with high inflow of migrants, efforts to improve the socio-economic situations of rural areas and transit towns should receive greater attention. The study therefore recommends that functional facilities such as pipe borne water, tertiary institutions, and industries should be provided in the identified towns and the rural areas. Agro-allied industries must be set up in the area to reduce rural-urban migration in order to provide job opportunity for the people of the rural areas. The state of environmental degradation in Lagos is worrisome and this calls for a public private sector participation strategy in the management of cities. With such a strategy well formulated a monitoring and evaluation structure needs to be put in place to ensure compliance with the rules and regulations that will make the environment sustainable.

REFERENCES

Adebayo, K. (2002): "Simulation models of the adoption process in smallholder farming systems in Nigeria." Seminar paper presented at the Department of International and Rural Development, University of Reading, Reading, United Kingdom on Tuesday, 11th June, 2002.

Adebayo, K. and Aromolaran A. K. (2005): "Perception of rural-urban migration by non-migrants in three rural communities". Paper presented at the 14th Annual Congress of the Nigerian Rural Sociological Association held at the Olabisi Onabanjo University College of Agricultural Sciences, Yewa Campus, Ayetoro, Ogun State, Nigeria between 7th and 10th November, 2005

Adebayo, K, Opeolu, B. O, Badru, B and Okuneye, P. A. (2005): "Socio-economic, environmental and health consequences of rural-urban migration in Lagos, Nigeria". Paper presented at the 2nd National Conference of the Nigerian Society for Environmental management (NISEM) held at the University of Agriculture, Abeokuta between Tuesday 6 and Thursday 8th September, 2005

Adegbola, O. (1972): "The impact of migration on the rural economy of Osun division western Nigeria". Unpublished Ph.D. Thesis. Department of Geography, University of Ibadan.

Ademoroti,C. M. A. (1996): Water and Water Pollution Standard Methods for Water and effluent Analysis. Foludex Press, Ibadan Pp. 20 – 155.

Aigbokan, B. E. (1998). *Poverty, growth and inequality in Nigeria. A case study*. Final Report presented at the AERC Workshop, Nairobi, Kenya.

Ajayi, A. and Kamson, O.E. (1983): Determination of Lead in roadside dust in Lagos city by atomic absorption spectrophotometry. Environ Int. 9: 397 – 400.

Bakhit, A.H.M.A. (1991). "The subsistence crisis and migration in Sahelian Zone of the Sudan". *African Geo Journal* 25 (1): 39-45.

Bamgbose, O, Arowolo, T.A. and Odukoya, O. (2001): Comparison of drinking water quality in Abeokuta Township with WHO Standsrds. Water Resources-Journal of the Nigerian Association of Hydrogeologists (NAH). 12:37-44

Braun van, J. (2004) "Towards a renewed focus on rural development" *Agriculture and Rural Development* 11(2) 4-6

Brink, J.H. (1991): "The effect of emigration of husbands on the status of their wives(s). An Egyptian Case." *Geo Journal* 23 (3): 201-211.

CBN/The World Bank (1999). *Nigeria's Development Prospects: Poverty assessment and Alleviation Study*. Research Department, Central Bank of Nigeria, Abuja/The World Bank, Washington, D. C.

DFID (Undated): Improving the safety of street-vended foods in Ghana (R 7493).

Crop post harvest programme. Newsletter. 2pp.

Doughty, A. (1979). "Rural-urban and urban-rural migration pattern in a Columbia habitat." *Geo Journal*. 17 (1): 133-147.

Escobar, T. and Collar, J. (1987). "Migration impact on the change of family farm structure in Korea." *Journal of Rural Development*. 16 (1) 102-120.

Fadayomi, T. O., Titilola, S. O., Oni, B and Fapohunda, O. J. (1992). *Migration Development and Urbanization Policies in Sub-Saharan Africa*. CODESRIA, Darkar

FAO. 2002. Feeding an increasingly urban world. World Food Summit five years later, 10-13 June 2002.

FOS (1999). *Poverty Profile for Nigeria: 1980-1996*. federal Office of Statistics, Abuja

Goyer, R.A. (1991): Toxic effects of metals. In: Amdur, M.V., Douli, J., Klansman, C.D.(Eds), Caserrett and Doull's Toxicology: The Basic Science of Poisons. 4th Edition. Pergamon Press, New York. Pp 623-680.

Guyer, G. and Murray, H. (1988): *Movement of men from areas and its consequences: Migration from rural to urban centres.* Hensman Publisher. 315p.

Okuneye, P. A. (2001): The Rising Cost of Food, Food Insecurity in Nigeria and its Implications for Poverty Reduction." *Economic and Financial Review. An International Journal of Economic and Financial Review.* Vo. 39 (4): pp 88-110

Okuneye, P. A. (2004): "Food Insecurity: Causes and Solutions" An Invited Paper presented at the African Citizen's Forum, 2004 held at Glover Memorial Hall, Marina, Lagos between May 25th and 27th, 2004

Okuneye, P. A., Adebayo, k., Opeolu, O. B. and Badru, I (2004): "Rural-Urban Migration, Poverty and Sustainable Environment: The Case of Lagos, Nigeria" Progress Report Submitted to PRIPODE/CICRED, France

Mabawonku A .F, (1973). "Impact of Rural-Urban Migration in the Economy of selected Rural communities in western Nigeria" . An unpublished M.Sc. dissertation, Department of Agric. Econs. University of Ibadan, pp 55 – 60.

Mabogunje A. I (1967). "Migration Policy and Regional Development in Nigeria" *Nigerian Journal of Economics and Social Studies* Vol. 12, No. 12 pp. 20

Ndiokwere, C.C. (1984): Astudy of heavy metal pollution from motor vehicle emissions and its effect on roadside soil, vegetation and crops in Nigeria. Environmental Pollution Series Pp 35-42.

Nriagu, J.O. (1992): Toxic metal pollution in Africa Sci. Total Environ 121: 1-37

Odukoya, O.O. and Ajayi, S.O. (1987): Trace heavy metals in Nigerian Fish: lead and cadmium. Nig J. Nutri. Sci. 8: 105-113.

Odumosu, O. Aluko, S. A and Adepoju (1976) *Problems of Migration in Nigeria* Proceedings of the third National Seminar / workshop in problems of migration in Nigeria, Obafemi Awolowo university, Ife, Ile- Ife. Pp. 37 – 51.

Ogunsola, O.J, Oluwole, A.F, Osubiojo, I.O, Durosinmi, M.A, Fatusi,A.O and Ruck,W (1994a): Environmental Impact of Vehicular traffic in Nigeria. Health Aspects. Sci Total Environ. 146/147: 111-116.

Ogwumike, F.O. (2001). "An appraisal of poverty and poverty reduction strategies in Nigeria." *CBN Economic and Financial Review*. Vol. 39, No. 4, pp. 45-71

Okojie, C. E., Anyanwu, J. C., Ogwumike, F. O. and Alayande, B. A. (1999). *Poverty in Nigeria: An Analysis of Gender Issues, Access to Social Services and Labour Markets.* AERC Report.

Okuneye, P. A., Adebayo, k., Opeolu, O. B. and Badru, I (2004): "Rural-Urban Migration, Poverty and Sustainable Environment: The Case of Lagos, Nigeria" Progress Report Submitted to PRIPODE/CICRED, France

Olayide, S. O. (1976). *Economic Survey of Nigeria: 1960-1975*. Aromolaran Publishing Company Ltd.

Olusanya P. O. (1969). *Socio – Economic aspect of Rural – Urban Migration in western Nigeria.* Nigeria Institute of Social and Economic Research, Ibadan.

Oliveira-roca, M. (1990). "The selectivity of rural-urban labour migration: the case of Croatia." *Rural Development Journal* 20 (107/108): 51-62

Preston, D. A. (1969): "Rural Emigration in Andean America". *Human Organization.* pp. 279 - 286.

Rankin, C.W, Nriagu, J.O, Aggarwal, J.K, Arowolo, T.A, Adebayo, K and Flegal, A. R. (2005): Lead Contamination in Cocoa and Cocoa Products: Isotopic Evidence of global Contamination. Environmental Pespectives. 113(10): 1344-1348.

Sangodoyin, A.Y. (1993): Considerations on contamination of groundwater by waste disposal systems in Nigeria. Environmental Technology. 14: 957-964.

Shen-Jianfa, A. (1995). "Rural development and rural-urban migration in China 1890-1990." *Geo-forum*. 26 (4): 395-409.

The World Bank (1995): *The Social Impact of Adjustment Operations*. OUP.
The World Bank (1996a). *Taking Action for Poverty Reduction in Sub Saharan Africa*, The World Bank, Washington, D. C.

The World Bank (1996b): *Nigeria: Poverty in the Midst of Plenty. The Challenges of Growth with Inclusion. A World Bank assessment.*

Udo , R.K.(1970). "Migration in Nigeria" Nigeria Magazine Vol. 13, pp. 616 – 620.

UN (1967): *UN World urbanization Trends 1920-1960.* The United Nations, Washington DC.

Waldron, H.A. (1993): Health Effects of Environmental Chemicals. Pollution: Causes, Effects and Control. R.M. Harrison (Ed.). 2nd Edition, Royal Society of Chemistry. Cambridge.

- APPENDICES: other documents prepared or collected for the PRIPODE programme such as questionnaires, maps, statistical tables

Annexe 1

UNIVERSITY OF AGRICULTURE, ABEOKUTA
RURAL-URBAN MIGRATION, POVERTY AND SUSTAINABLE ENVIRONMENT: THE CASE OF LAGOS, NIGERIA

INTERVIEW GUIDE FOR POLICY MAKERS AND IMPLEMENTORS IN LAGOS METROPOLIS

Date of interview……

A. Background information on respondent

1. Name (Optional)……
2. Designation …….
3. Office Address …….
4. Age……years
5. Gender ( ) Male ( ) Female
6. What is your highest educational qualification? .....
7. How will you describe the rural-urban migration situation in Lagos?

……
……

8. Is there any connection between rural –urban migration and poverty situation in Lagos metropolis?

……
……

9. Is there a connection between rural-urban migration and the management of the environment in Lagos?

……
……

B. Determinants of poverty in Lagos metropolis

10. What type of house do migrants predominantly live in Lagos?

( ) Face me Face you building ( ) Boys quarter ( ) Flat ( ) Bungalow

( ) Duplex ( ) Personal House

11. Were remittances from relations an important source of income for migrants in Lagos? ( ) Yes ( ) No

12. Will you say that migrants' earnings in Lagos are sufficient for then?

( ) Yes ( ) No

13. If no, how much more would they need to live conveniently in Lagos.

……..Naira

14. How do you think they cope without this additional money?

……
……

C. Environmental impacts of migration in both the places of orientation and destination

15. Please, state the type of illnesses common among migrants in Lagos
    i. Malaria
    ii. Water borne diseases
    iii. Cough
    iv. Cholera
    v. Stress related
    vi. Diabetes
    vii. Tuberculosis
    v. Others (specify) …….
16. What treatment types do you think they normally apply?
    i. Visit Native doctor
    ii. Herbs and roots
    iii. Buy medicine at shops of choice
    iv. Go to a hospital
    v. Others (specify) ……..

17. How would you describe migrants' normal eating pattern? Tick as appropriate

	Cook at home	Eat in restaurant	Eat at roadside joints	Others (specify)
Regularly				
Occasionally				
Rarely				
Never				

18. What is your perception of environmental problems in Lagos between 1995 and 2003 given the influx of migrants

( ) 1995 better than 2003 ( ) 2003 better than 1995 ( ) there is no difference

( ) Any other (specify)

19. What is the most common cause of death among the migrant population in Lagos?
    i. Malaria
    ii. Water borne diseases
    iii. Cough
    iv. Cholera
    v. Stress related
    vi. Diabetes
    vii. Tuberculosis
    v. Others (specify) …….

20. Has the rent increased in the last one year in the Lagos metropolis?

( ) Yes ( ) No

21. If yes, state the average rate of increase

( ) Less than 50% ( ) 51 – 100% ( ) 101 – 150% ( ) 151 – 200% ( ) Over 200%

22. Have the dump sites increased over the last one year in the metropolis?

( ) Yes ( ) No

23. If Yes , what accounted for this?

    ( ) Increase in number of people ( ) Lack of government action

    ( ) Any other (specify)…….

24. How are these waste dumps evacuated?
( ) Not evacuated at all ( ) By erosion ( ) By community effort
( ) By the Local Government (By the State government

D. Changes in assets owned by migrants in the Lagos metropolis

25. Do you think there have been changes in the socio-economic characteristics of migrants in Lagos in the last 10 years? ( ) Yes ( ) No
26. Please, describe these changes
    ……
    ……
27. How will you describe the livelihood activities of migrant and non-migrant families in the metropolis?
    ……
    ……
28. What specifically do you think migrants gain by moving to Lagos?
    a.……b……

……
c……
29. Do you think more people can be accommodated in Lagos in the nearest future?
( ) Yes ( ) No
30. What factors will make migrants go back to their place of orientation.
( ) If they get the same job
( ) If amenities are put there
( ) If they can be paid similar income not minding any other job
( ) If there is good housing scheme
( ) If their families so desires

APPENDIX 2
UNIVERSITY OF AGRICULTURE, ABEOKUTA
RURAL-URBAN MIGRATION, POVERTY AND SUSTAINABLE ENVIRONMENT: THE CASE OF LAGOS, NIGERIA
QUESTIONNAIRE FOR INHABITANTS OF PLACES OF ORIGIN

Date of interview……State……

A. Demographic and socio-economic characteristics of non-migrant

1. Name (Optional)……
2. Town/Village……...… LGA…….. …….
3. Age……years
4. Gender ( ) Male ( ) Female
5. Have you ever lived outside your LGA? ( ) Yes ( ) No
6. If yes, where and for how long ……
7. What were you doing outside your LGA?

( ) To get a good job ( ) To enjoy some social amenities not available in my community ( ) To obtain higher educational qualifications ( ) I followed my relation Others (specify)…….…….

8. Have you ever been to Lagos? ( ) Yes ( ) No If yes, when? ……..
9. State your major occupation …….……
10. State your other minor occupation…….
11. State your income from your major occupation….…… Naira/month
12. State your income from your minor occupations……Naira/month
13. Marital Status

( ) Living with parents ( ) Living with relations ( ) Single

( ) Married (one wife) ( ) Married (2 or more wives) ( ) Separated

( ) Divorced ( ) Widow/widower

14. What type of house were you living in?

( ) Thatched roofed house ( ) House with corrugated iron sheet ( ) Mud house

( ) Block/brick house ( ) House with asbestos ( ) Others (specify)…….....

15. What type of toilet were you using?

( ) Bush ( ) Pit latrine ( ) Water closet ( ) Any other specify)……

16. How many of you were living in a room? ...……...…..persons
17. Are you a head of family unit? ( ) Yes ( ) No
18. What is your position in the family?

( ) 1st born ( ) last born ( ) Others (specify) ……..

19. Household membership

	Male	Female

Number of adults (above 18 years old)		
Number of children (less than 18 years old)		

20. Number of years spent in the formal school system …..... years

21. What is your highest educational qualification? .....

B. Opinion on migrants

22. How many of your family members left village/town in the last 3 years?

Adults…….. Youth……

23. Where do they normally go? ……

24. What do you think are the reasons for their migration?

( ) To pursue education ( ) To look for job ( ) To enjoy social amenities

( ) To join parents ( ) Others (specify) ……..

25. Do you think those that migrated to other places are better than you?

( ) Yes ( ) No

C. Determination of poverty in places of origin

26. Consumption/Expenditure Patterns

Item	Average Quantity consumed (kg/month)	Unit price	No. of times taken per week
Rice			
Garri			
Beans			

Item	Average Quantity consumed (kg/month)	Unit price	No. of times taken per week
Rice			
Garri			
Cocoyam			
Yam			
Beef			
Pork			
Chicken			
Fish			
Eggs			
Vegetables			
Banana			
Apple			
Biscuits			
Margarine			
Butter			
Groundnut oil			
Palm oil			
Gala			
Fruits			
Honey			
Milk			
Salad			
Sugar			
Bread			
Salt/spices			
Fuel			
Electricity			
Water			
Gas			
Rent on Housing			

Item	Average Quantity consumed (kg/month)	Unit price	No. of times taken per week
Rice			
Garri			
Transportation			
Others (specify)			

27. Were any of your relations sending money to you? ( ) Yes ( ) No, If yes,

	Amount (Naira/month)	When last
From outside this town		
From Lagos		

28. Are you receiving food items from your relations? ( ) Yes ( ) No

	Worth of food (Naira/month)	When last
From outside this town		
From Lagos		

29. Will you say your earnings are sufficient for you? ( ) Yes ( ) No

30. If no, how much more do you need. ……..Naira/month

31. How do you cope without this additional money?

……

……

D. Environmental impacts of migration in the places of origin

32. Please, rank (1^{st}, 2^{nd}, 3^{rd}, etc.) the type of illnesses common in your place of residence

Illness	Rank
Malaria	
Diarrhoea	
Dysentery	
Typhoid	
Elephantiasis	
Cough	
Cholera	
Guinea worm	
Hypertension	
Headache	
Depression	
Stroke	
Diabetes	

Tuberculosis	

33. Please, rank (1st, 2nd, 3rd, etc.) the treatment types you normally apply?

Treatment type	Rank
Visit Native doctor	
Herbs and roots	
Buy medicine at shops of choice	
Go to a hospital	
Visit my spiritual healers	
Others (specify)	

34. How would you describe your normal eating pattern? Tick as appropriate

	Cook at home	Eat in restaurant	Eat at roadside joints	Others (specify)
Regularly				
Occasionally				
Rarely				
Never				

35. What is your perception of environmental problems in this town between 1995 and 2004

Perception	General aesthetics	Gutters	Smell (odour)	Misty nights
1995 better than 2004				
2004 better than 1995				
There is no difference				
Any other (specify)				

36. If you have lost any relation recently in this town, please, indicate the cause of death

Cause	Tick (√)
Malaria	
Diarrhoea	
Dysentery	
Typhoid	
Elephantiasis	
Cough	
Cholera	
Guinea worm	

Hypertension	
Headache	
Depression	
Stroke	
Diabetes	
Tuberculosis	
Others Specify	

37. How many new houses have been built in your area since 2000?

( ) None ( ) Between 1 and 10 ( ) Between 11 and 20 ( ) Between 21 and 50

( ) Over 50

38. Have there been many people moving into this area recently? ( ) Yes ( ) No

39. Has the rent increased in the last one year? ( ) Yes ( ) No

If yes, how much were you paying Last year .....Naira/month

This year……Naira/month

40. How many waste dump sites can you observe in your area of abode? .....

41. Have the dump sites increased over the last one year? ( ) Yes ( ) No

42. If yes, what accounted for this?

( ) Increase in number of people

( ) Lack of government action

( ) Carefree attitude of people

( ) Any other (specify)…….

43. How are these waste dumps evacuated?

( ) Not evacuated at all ( ) By run off water ( ) Community effort ( ) Private businesses ( ) By the Local Government ( ) By the State government ( ) Burning

( ) Any other specify

E. Ownership of assets

44. Please indicate the assets owned by you?

Item	Ownership	
	Yes	No
Housing - Personal house - Rented House - Family house - Metal/asbestos roofing sheet - Out door toilet - Indoor toilet - Indoor kitchen - Outdoor kitchen - Indoor water system		
Personal effects owned a. Radio b. Sound system c. Television d. CD player e. bicycle f. motorcycle g. Car h. Others (specify)		
Neighbourhood i. Functional drainage system j. Playing ground for children k. Primary School l. Secondary School m. Tertiary Institution n. Health centre o. Cottage Hospital p. Means of transport (Bus/Taxi) q. Pipe borne water r. Water from river/stream s. Tarred road t. Electricity u. Industries v. Cinema House w. Hotel x. Restaurant y. Local market z. Central Market aa. Supermarket bb. Stores cc. Incinerator - Others (Specify)		

45. Do you feel like

a. Moving out of this town/village? ( ) Yes ( ) No

b. Going to Lagos? ( ) Yes ( ) No

46. Please, explain your answer in (46) above

……

……

47. Rank (1^{st}, 2^{nd}, 3^{rd} etc) the factors that will make you to move out of this town?

( ) If I get a better job

( ) For better amenities

( ) If there is better housing facility

( ) If my family so desires

( ) If I lose my job in this village/town

( ) If there is a crisis in this town/village

( ) Any other (specify)……..

48. What factors will make you to remain in this village/town

a……..

b……..

49. Are there any other comments relevant to rural-urban migration you wish to raise?

……

Thank you