

**HOUSEHOLD RESPONSE TO URBAN ENCROACHMENT ON RURAL  
HINTERLAND IN OGBOMOSO URBAN FRINGE**

ADEBOYEJO A.Thompson and ABOLADE Olajoke  
Department of Urban and Regional Planning  
Ladoke Akintola University of Technology Ogbomosho, Nigeria

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## **1 INTRODUCTION**

The negativities associated with rapid urbanization, particularly the environmental consequences within the city and peri-urban areas, are some of the most documented issues in urban environmental research (World Bank 1997; Bartone C. J. Bernstein J et al 1994). Whether it is the studies focusing on mega-cities (Shahab 2001 in India) or medium and small sized urban places (LM Van den Berg et al 2003, UNDP, 2000; Jenkins 2003) there is consensus of opinion in the literature on urbanization processes and the associated consequences. For example, it has been noted that though, there are few mega cities (cities with 10 million inhabitants or more) in Africa, urbanization process, unlike in Asia and Europe is taking place in the absence of significant industrial expansion (kwasi, 2004 ). Furthermore, the process finds expression majorly in outward expansion of the built up area and conversion of prime agricultural lands into residential and industrial uses (Brennan, 1999, Kwasi, 2004)

Documented impact of city expansion on the hinterland range from encroachment on agricultural land (Jaiyebo 2003; Adriana 2003, USDA,2001, ) and land speculation (Adriana 2003) with its diverse implications on farming practices and food security (LM Van den Berg et al 2003), to pollution of the peri-urban areas where urban wastes are deposited (Hardoy, et al (2001, UNCHS, 1996, Redman 1999, Bruce et al. 2002), again, with the implications on environmental quality and by extension population morbidity (Kates and Parris, 2003, McMichael,2000 )

Undoubtedly, the urban hinterland receive the direct impact of urban expansion with enormous stress on the natural resources as ecological footprints ( Rees and Wackernagel, 1994, Rees, 1996, Chambers et al. 2001). Further, as observed by (kwasi, 2004) the conversion of

farmlands and watersheds for residential purposes have negative consequences on food security, water supply as well as the health of the people, both in the cities and in the peri-urban areas.

In developing Countries generally and Nigeria in particular, given the increasing pace of urbanization, the diversification and intensification of underlying processes, the impact of city expansion is bound to increase in scope and severity particularly in the hinterland areas of the small and medium sized cities. While research attention has continued to be riveted on the environmental consequences of urbanization and, the ecological footprints of cities, the responses of households and communities in the city hinterland to the onslaught of urban expansion is yet to be examined in academic research. This is the main goal of this study. The need to understand how communities and households respond to the impact of city encroachment on rural hinterland is of both scientific and practical importance.

- 1 First, it is observed that, the analysis of interaction between man and the environment had been partial to the extent that man's role in the relationship is reduced to that of modifier of environmental variables and a passive recipient of consequences of urban encroachment. It is argued here that, households and communities respond to adversities mediated by urban encroachment, howbeit at different levels of success. The need to evaluate the response of households is to identify objects of positive policy and formulate programmes aimed at strengthening households and communities to be able to cope well with inevitable consequences of city growth. It is also to further understand or expand the frontiers of knowledge of the dynamics of population - environment linkage.
- 2 While the parameters of city impact on the hinterland have near universal features, differences in regional ecosystems, variations in urban population size and rate of growth ensure the fundamental nature, scope and severity of environmental problems differ from place to place and changes overtime, and that there cannot be universal or stock solution. Consequently, there is the need for a tailor made, city specific environmental strategy based on diversity and enormity of problem and, the structure and functioning of existing institutional frameworks.
- 3 Further, it is noted that most research on environmental impact of urbanization have been carried out mainly at the national level (UN, 2003,, Brockherhoff, 2000, Cariboi,2002, El-Sharks et al., 1993, World Bank, 2002 ). The problem with national data is aptly summarized by Torrey(2006) thus “..national data is too coarse for the environmental

improvement of urban areas” he therefore suggested that, “.data and research at the local level need be developed to provide the local governments with the information they need to make decisions”

- 4 Also it has been argued that, in order to understand the impact of new urbanization on the environment and people, it is crucial to examine these processes in medium and small cities and not restrict our inquiries to the largest and most often over studied megacities (Redman et al. 2004)

## **2 AIM AND OBJECTIVES**

This study focuses on the response of inhabitants of urban hinterland to city encroachment on farmlands in the peri-urban areas of Ogbomoso, a pre-colonial but rapidly urbanizing community.

The Objectives of the study include:

- i Determination of the rate, pattern and direction of city development between 1914 and 2007
- ii Estimation of the rate of city growth and the quantum of rural farmland absorbed by city expansion between 1914 and 2007
- iii Evaluation of the environmental impact of growth of the city
- iv Analysis of households and community response to city encroachment

## **3 METHODOLOGY**

The methodology employed for this research is a multi-stage approach. The first stage involves determination of the rate, pattern and direction of growth of Ogbomoso between 1914 and 2007 using Geographical Information system (GIS). The data required for this stage is the vegetation and land use map of Ogbomoso for different time periods. The earliest land use maps of the city were those for 1914 and 1949, which were obtained from the Nigerian Baptist Theological Seminary as compiled by the Missionaries. Land use maps for the periods 1978 and 1995 were derived from the following imageries: Landsat MSS Imagery (1976 – 1978). SPOT XS Landsat TM (1993 – 1995), ERS – S SAR (1993 – 1995). They were obtained from the Ministry of Agriculture and Natural Resources. The 2003 map, which was an update of 1995

land use map, was extracted from Akinbola (2004) and then through fieldwork, the 2003 map was updated this year 2007 to produce the current land use map. The maps were digitized using Arc view 3.2. Although maps are obtained for very irregular periods, their outputs are sufficient enough to analyse changes in city spread and examine the implications of city growth on the rural hinterland. The maps produced from the first stage were examined and the areas of the city, where growth rate is most dramatic are identified. The impact of city growth on rural hinterland was discussed.

In the second stage, the study combines households (359) and (18) communities in Ogbomoso urban fringe as units of analysis. The choice of the communities was purposive, being those at the city frontier, and with established organic linkage with the city. For purpose of questionnaire administration, the settlements were categorized into three, based on observed direction of rapid city expansion, population size, and, the distance of communities to the city center, with the underlying assumption that, the nearer the city, the greatest the impact of urban encroachment and the more pronounced the response of households and communities. Table 1 shows the three categories of settlements, their population size and number of questionnaires administered in each settlement. In all, a total of 359 questionnaires were administered in the 18 communities as shown in Table 1.

The third stage of the study involved one FGD session in five communities, which as observed from analysis of stages one and two have some of the most dramatic impact of urban encroachment. This was conducted among community elders, as a surrogate of life course model to investigate the changing economic base of the communities as well as the responses of households to impact of urban encroachment.

Table 1 Characteristics of selected settlements and distribution of questionnaire

| LGA            | SETTLEMENT                        | CATEGORY/POP SIZE | NO OF QUESTIONNAIRE |
|----------------|-----------------------------------|-------------------|---------------------|
| Ogbomoso North | Aduin*, Ile-ewe*, Igbo sayi*, Oke | A                 | 21 each             |
|                | Paku*, Kuye*                      | B/                | 16                  |
|                | Ikose*                            | B/188             | 16                  |
|                | Eyeba<br>Aje Ikose                | B/372             | 20                  |
| Ogbomoso South | Ayedaade*, Suusun*, SaanuAje*     | A/                | 21 each             |
|                | Safejo*                           | B                 | 18                  |
|                | Arinkinkin*                       | B                 | 17                  |
|                | Owolaake                          | B/793             | 20                  |
| Surulere       | Ladokun                           | C/274             | 18                  |
|                | Aroje                             | A/415             | 22                  |
|                | Abaa                              | A/206             | 16                  |
| Oriire L.G.A   | Iluju*                            | B/                | 20                  |

\* Population figure not available for settlement alone but group of settlements.

#### 4 THE URBANIZATION OF OGBOMOSO

Ogbomoso is a pre-colonial urban center and the second largest city, both in terms of population and spatial extent, in Oyo State, Nigeria. The city is located at a distance of about 100km north of Ibadan, the Oyo state capital and about 80km from both Ilorin and Osogbo, respectively the Kwara and Osun State capital. (see figure 1). It is one of the main gateways to the northern part of Nigeria from the Yoruba land. It is bounded by river Ora to the east, while no major physical barrier is encountered to the north, west and south. It develops laterally towards the north and south along Ibadan-Ilorin road. The city is surrounded by a number of villages and medium sized towns such as Ikoyi, Odo-Oba and Iressa Apa which all have organic linkage with it, but at distances considered far enough to be out of range of influence of expansion of Ogbomoso.

The city of Ogbomoso is one of such numerous Yoruba settlements, South-West of Nigeria, where urbanism as a way of life predates European Colonization of the country. Like the origin and development of most Yoruba settlements in the early 18<sup>th</sup> century, the city emerged from the activities of five different waves of migrants, who settled in different areas of the present city. It was the last wave of migrants, led by Soun Ogunlola, who as a result of

warring prowess, subjugated and pacified the separately developing villages and hamlets in the surrounding areas into a large settlement that is known today as Ogbomosho

The initial impetus for the growth of the city was provided by torrential influx of refugees from the internecine wars in Yoruba land in the early 19<sup>th</sup> Century, and of those fleeing from the Fulani Jihadists who over run most of the Northern towns including Ilorin which was about 80km away from Ogbomosho. Ogbomosho successfully repelled the Fulani warriors and this victory further attracted other fleeing refugees to the town. By the end of the 19<sup>th</sup> century, a continuously built up compact settlement had evolved from the scattered hamlets covering an extensive area of land. Table 2 shows the population size of the city between 1855 and 2006

**Table 2: Population of Ogbomosho 1855 to 2006**

| <b>Year</b> | <b>Population</b>                         |
|-------------|---|
| 1855        | 40,000 *                                  |
| 1911        | 80,000 *                                  |
| 1921        | 84,000 *                                  |
| 1931        | 86,200 *                                  |
| 1952        | 136,535 <sup>2</sup>                      |
| 1963        | 227,471 <sup>2</sup>                      |
| 1977        | 321,411 <sup>3</sup>                      |
| 1985        | 391,608 <sup>3</sup>                      |
| 1995        | 501,291 <sup>3</sup>                      |
| 1991        | 166,034 <sup>2</sup> 553,331 <sup>3</sup> |
| 2000        | 691,035 <sup>3</sup>                      |
| 2006        | 801,389 <sup>3</sup>                      |

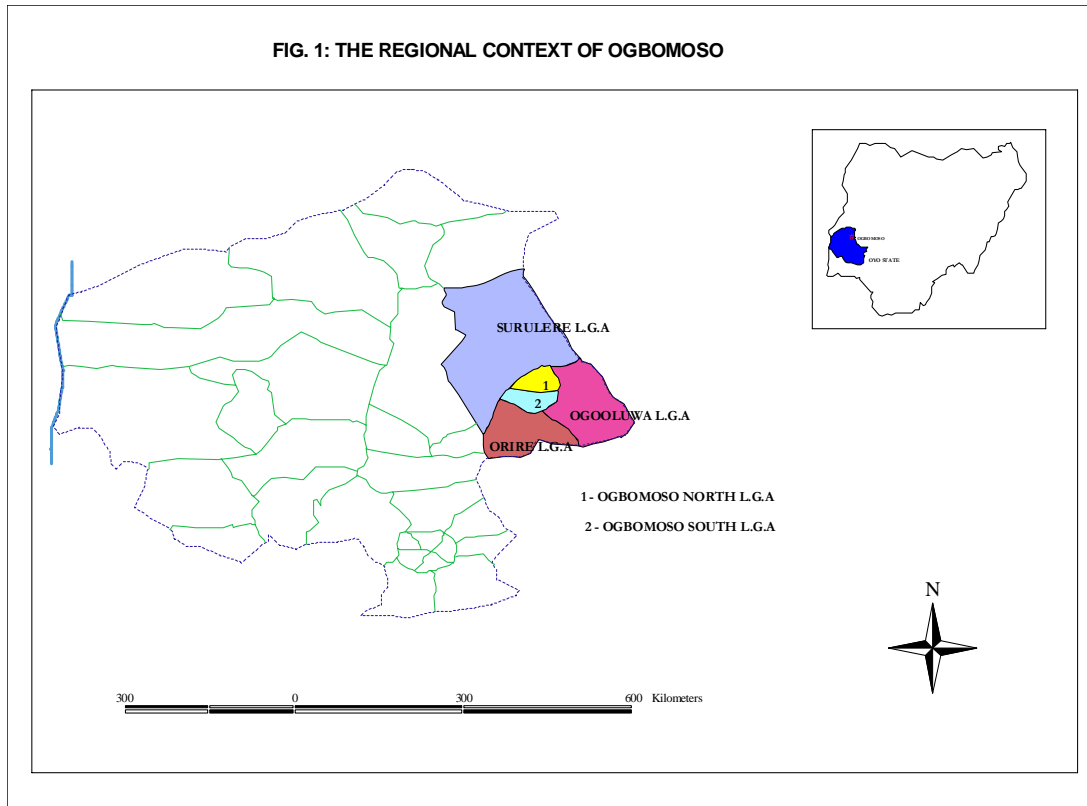
\* Estimated figure as provided by Missionaries

<sup>2</sup> Census figure

<sup>3</sup> Projected figure based on 1963 census at the rate of 2.5%

A quantitative description of the town as made by Henry Townsed of the Church Missionary Society in 1855, shows that Ogbomosho had a population of about 40,000 people by this period. While the 1952 census puts the population of the town at 136,535, about ten years later, in 1963, this figure had increased to 227,471. Although the 1991 Census puts the population of the town at 166,034 (a very controversial figure), today, the population of the town may be conservatively put at about 800,000.

FIG. 1: THE REGIONAL CONTEXT OF OGBOMOSO



Although, river Ora is a limiting factor to the development of the town towards the east, it is obvious that an important factor governing the growth and spatial structure of Ogbomosho is the Ilorin-Ibadan Federal (trunk A) road, the alignment of which ensures a north-south spatial structure, and the division of the town into two local government areas (Ogbomosho North and Ogbomosho South) for purpose of political administration. The over 10km section of the Ilorin-Ibadan road is an important Central Business District (CBD) in the city. In this stretch are located: major motor parks (Osogbo, Ibadan and Ilorin motor parks) and other activity centers such as Baptist Medical Centre, the State General Hospital, the Baptist Theological Seminary and the state University – Ladoké Akintola University of Technology. Important roads and streets radiate from or terminate along this high way. Apart from this highway, other CBD in the town include: Oja-Igbo where the King’s palace and Ogbomosho central mosque are located.



## 5 THE PATTERN AND RATE OF URBAN ENCROACHMENT

Figure 2 shows the pattern of city expansion and encroachment into rural hinterlands in six different periods. The estimated built up areas of the city and the amount of rural land engulfed in between the periods are summarized in Table 2.

**Table 2: City limit and Spatial Changes 1914 – 2007**

| Year         | Built-up Area in hectares | Amount of land Engulfed hect | Rate of Expansion % | Average Annual Rate % |
|--------------|---------------------------|------------------------------|---------------------|-----------------------|
| 1914         | 139.2                     |                              |                     |                       |
| 1949         | 207.2                     | 680                          | 48.84               | 1.4                   |
| 1978         | 960.2                     | 753.0                        | 363.43              | 12.5                  |
| 1995         | 19,090                    | 948.8                        | 98.81               | 5.8                   |
| 2003         | 2,748.8                   | 839.8                        | 43.99               | 4.4                   |
| 2007         | 3,129.0                   | 380.0                        | 13.82               | 3.46                  |
| <b>Total</b> | 3,129.0                   | 2,989.0                      | 2.15 o/oo           |                       |

In 1914, the built-up area of the city was the traditional unplanned area, comprising of Oke-Elerin, Masifa, Ijeru, Isale-Afon among others, with estimated built up size of about 140 hectares. This however increased by about 49% to 210 hec in 1949 and to 960 hec, 1,910hec, 2,750hec and 3129 hec respectively in 1978, 1995, 2003. and 2007

City outward expansion and consequent encroachment upon rural land was imperceptible with just about 70hectares of farm land engulfed over about 35 years period (1914 to 1949), the rate was phenomenal between 1950 and 1978 (363.4%), as 750 km<sup>2</sup> of rural hinterland had been engulfed. This represents more than thrice the 1949 size of the city. The cumulative amount of rural land engulfed by 2007 was 2,989 hectares

The population of Ogbomosho was and to a large extent still agrarian. The areas surrounding the city in each successive period shown constituted the farmland. Consequent upon socio- economic and political development within the town and as an important city in the south-west geopolitical zone, the period between 1949 and 1978 witnessed dramatic changes in the city landscape.

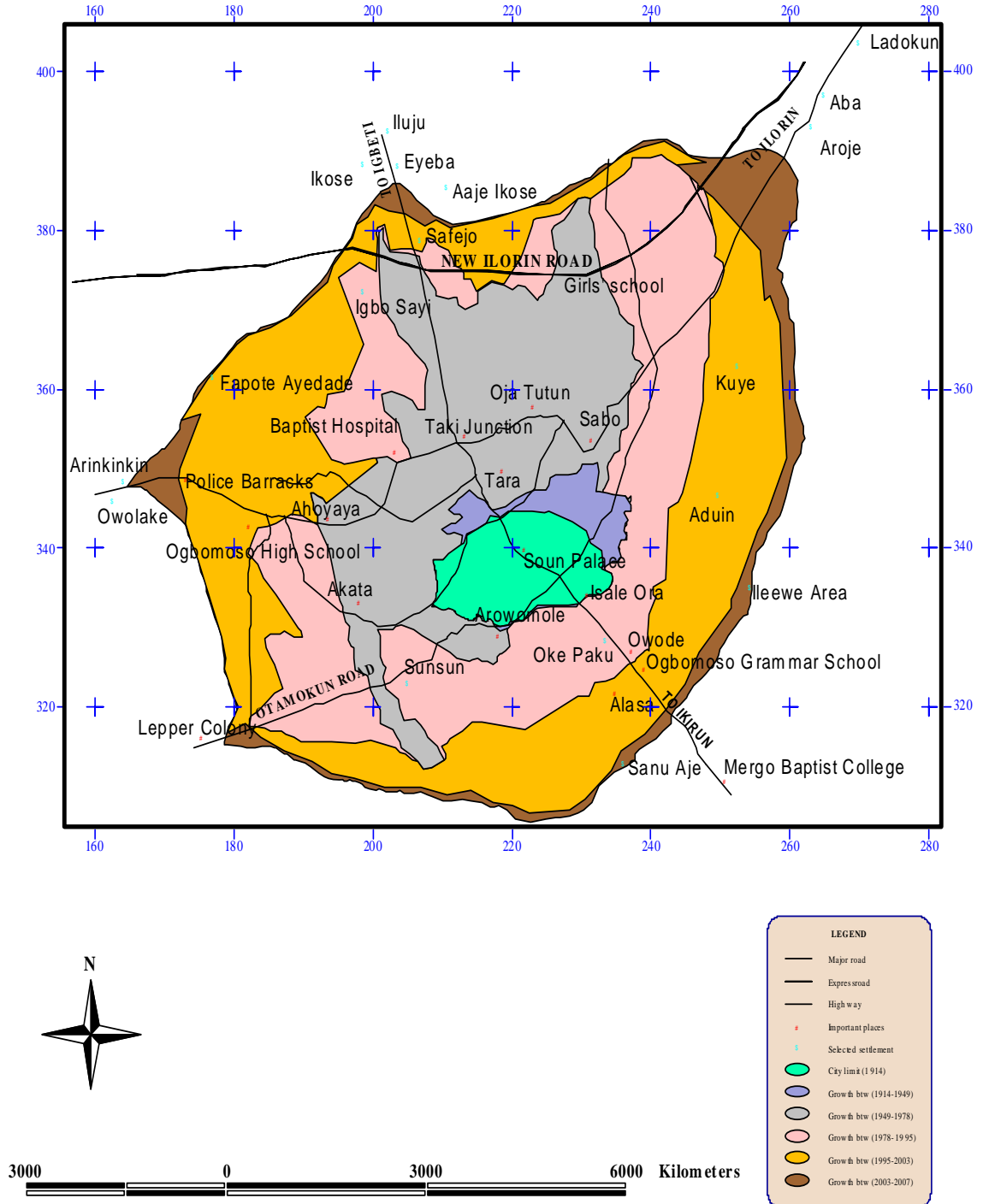
Significant growth factors in the colonial era, were the establishment of the Baptist Theological Seminary, Baptist Hospital and, the construction of the Ibadan Ilorin highway which runs through the city, linking the South and Northern part of the Country.

In the early independence era, more land area were acquired for educational, commercial, health and other public uses. Specifically, educational institutions served as growth points as they opened up new areas, forcing farmers to land further into the hinterland.

The current most important growth factor is the establishment of the State University – Ladoko Akintola University of Technology in 1990. With the increasing rate of student admission and staff strength, the outward expansion of the city in this area has been phenomenal, as hitherto low or dead socio-economic activities have been resuscitated and elevated.

The primary casualty of this phenomenal city expansion is the farmland, and farmers, in the hinterland, where socio-economic activities are either land based or land related. The questions are: have the farming households and communities been passive recipients of urban encroachment malaise: How have they responded? what is the level and variations in response pattern?. These are some of the issues examined in the discussion that follow

**Fig. 2: OGBOMOSO CITY EXPANSION 1914 - 2007**



## SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS.

### 6.1 Age- Sex distribution of Respondents

The Age distribution of respondents varied though, but a modal value of 50 and mean of 53 show that they are largely matured and thus relevant as a surrogate of life course model approach to population-environment relationship. The different ages are grouped and related to sex distribution as shown in Table 3. The table shows that most of the respondents were male (58.4%) who were majorly within the 41 – 50 years age group (41%). Also significant proportion of the male respondents were in the 51 – 60 years (29%) and 61 – 70 years (16%) age groups.

Table 3 Age – Sex Distribution

| Age Group         | Sex        |             |            |             |             |           |
|-------------------|------------|-------------|------------|-------------|-------------|-----------|
|                   | Male       |             | Female     |             | Total       |           |
|                   | No         | %           | No         | %           | No          | %         |
| 25 – 40<br>Col. % | 15<br>7.2  | 46.9        | 17<br>11.5 | 53.1        | 32<br>9.0   |           |
| 41 – 50<br>Col. % | 86<br>41.3 | 57.3        | 64<br>43.2 | 42.7        | 150<br>42.1 |           |
| 51 – 60<br>Col. % | 60<br>28.8 | 64.5        | 33<br>22.3 | 35.5        | 93<br>26.1  |           |
| 61 – 70<br>Col. % | 33<br>15.0 | 54.1        | 28<br>18.9 | 45.9        | 61<br>17.1  |           |
| 71 – 93<br>Col. % | 14<br>6.7  | 70.0        | 6<br>4.1   | 30.0        | 20<br>5.6   |           |
| <b>TOTAL</b>      | <b>208</b> | <b>58.4</b> | <b>148</b> | <b>41.6</b> | <b>356</b>  | <b>00</b> |

P = 0.00

### 6.2 Education and Income of Respondents

A careful examination of Table 4 reveals that respondents' educational and annual income is a mix of rural and urban socio-economic features. However, the predominance of ruralness is evident in the fact that most respondents had no formal education (35.2%) and were mainly in the low income group with majority earning below N20,000 (32.8%) per annum. There were significant proportion of educated elites with secondary school certificate (15.8%) which constitute the bulk (23%) of those in the high income group of N61 – N100,000 per annum. With a P-value of 0.0, there is a significant relationship between the level of education and income of respondents.

**Table 4: Educational Status and Annual Income**

| Education                  | Income Annual |             |            |             |             |            | Total       |
|----------------------------|---------------|-------------|------------|-------------|-------------|------------|-------------|
|                            | N/R           | <20,000     | 21 – 34000 | 31 – 40,000 | 41 – 60,000 | 61 – 100   |             |
| No Formal                  | 1<br>22.5     | 49<br>41.5  | 37<br>31.4 | 6<br>5.1    | 10<br>8.5   | 11<br>3.3  | 118<br>35.2 |
| Incomplete Primary         | 5<br>62.5     | 13<br>28.9  | 9<br>20.0  | 8<br>17.8   | 7<br>15.6   | 7<br>15.6  | 45<br>13.5  |
| Primary Complete           | 1<br>12.5     | 14<br>31.8  | 10<br>22.7 | 7<br>15.9   | 5<br>11.4   | 8<br>18.2  | 44<br>13.1  |
| Incomplete Secondary       | -             | 11<br>33.3  | 7<br>21.2  | 2<br>6.1    | 8<br>24.2   | 5<br>15.2  | 33<br>9.9   |
| Secondary Complete         | -             | 15<br>28.3  | 13<br>24.5 | 7<br>13.2   | 6<br>11.3   | 12<br>22.6 | 53<br>15.8  |
| Teacher's College/NCE/Poly | -             | 6<br>20.0   | 7<br>23.3  | 5<br>16.7   | 6<br>20.0   | 6<br>20.0  | 30<br>9.0   |
| University                 | 1<br>12.5     | 2<br>18.2   | -          | 3<br>27.3   | 1<br>9.1    | 4<br>7.5   | 11<br>3.3   |
| TOTAL                      | 8<br>2.4      | 110<br>32.8 | 38<br>11.3 | 43<br>12.8  | 4.3<br>12.8 | 53<br>15.8 | 335         |

P = 0.00

**6.3 Marital Status and Occupation of Residents**

Table 5 reveals that the bulk of the respondents were married (78%), followed by those widowed (11.8%). Also farming (32.7%) Petty trading (31%) and artisanship (17.7%) were the major occupation. There were also significant concentration of Civil Servants (8.7%) and retired public servants (4.5%). The bulk of the married respondents were either farmers (36.4%) or petty traders (36.4%).

**Table 5: Marital Status and Occupation of Residents**

| Marital Status | Unem Ployed | Occupation   |               |               |            |           | Total       |
|----------------|-------------|--------------|---------------|---------------|------------|-----------|-------------|
|                |             | Farming      | Petty Trading | Civil Servant | Artisan    | Retired   |             |
| Single         | 2<br>8.7    | 4<br>17.4    | 6<br>26.1     | 3<br>13.0     | 7<br>30.4  | 1<br>4.3  | 23<br>6.5   |
| Married        | 9<br>3.2    | 101<br>36.4  | 101<br>36.4   | 25<br>9.0     | 51<br>18.3 | 11<br>4.0 | 278<br>78.3 |
| Separated      | -           | 2<br>33.3    | 2<br>33.3     | 1<br>16.6     | 1<br>16.6  | -         | 6<br>1.7    |
| Widowed        | 6<br>14.3   | 10<br>23.8   | 18<br>42.9    | 1<br>2.4      | 3<br>7.1   | 4<br>9.5  | 42<br>11.8  |
| Divorced       | -           | 1<br>20.0    | 3<br>60.0     | 1<br>20.0     | -          | -         | 5<br>1.4    |
| TOTAL          | 18<br>5.1   | 1.16<br>32.7 | 110<br>31.0   | 31<br>8.7     | 63<br>17.7 | 16<br>4.5 | 355<br>100  |

P = 0.10

#### 6.4 Nativity and length of stay

Results of analysis show that the bulk of the respondents were natives (70.29%) of the various communities and had lived all their lives in these settlements. Though most of the non indigenes had stayed for between 5 and 10 years (64.%) significant proportion had stayed for various periods; 11 – 20 years (14.6%); 21 – 30 years (16.9% and over 30 years (4.5%). This implies that the respondents were knowledgeable enough about the local circumstances with respect to dynamics of environmental and socio-economic conditions.

### 7 RESPONSES TO EFFECTS OF URBAN ENCROACHMENT

The imperatives of planning and policy formulations suggest the need to examine the effects and responses to urban encroachment within the spatial framework of administrative units that cover the households and communities considered in this study. Nevertheless, specific community reports are highlighted for immediate remedial action.

The effects of urban encroachment and responses of households and communities to these are investigated on: agricultural land with implications on biodiversity and the local ecosystem; farming and related practices, land ownership, housing and health among others. The

report of FGD in five communities and administered questionnaires form the bases of analysis and discussions here.

### **7.1 Response to incursion on agricultural land**

A major effect of urban encroachment on the rural hinterland in the study area is incursion on, and, deprivation of farmers of, fertile agricultural land leading to shortage of nearby farm land, which forced farmers further away to distant land. Reports of FGD shows that the areas bordering the city of Ogbomoso were once vibrant agricultural land, with various cash and food crops such as colanut, locus bean, cocoa, mangoes, yam, cassava, etc. planted, but now have all been taken over by residential development. In Aroje community, one of the peri-urban settlements along Ogbomoso-Ilorin road, the elders reported that: the area now built up was once basically farmlands, where cocoa, colanut, mangoes were planted. Pointing to few colanut trees that are remnants of once thriving plantation, an elder lamented *“houses have taken over what used to be big cocoa and colanut farms and farmers have been forced to move further into distant places”* Similarly in Adwin area of Ogbomoso north, one of the areas with most rapid incursion, an elder who was one of the first people to settle in the area in the year 2000, said *“Everywhere was used as farmlands, there were only three buildings partially completed but occupied, as at then, but today there are about 220 buildings excluding unroofed houses”*.

With the exception of those in Ikose community, which is 8 km from the city, all the participants were unanimous in claiming that there was reduction in farmland available for cultivation. This may be because of distance decay effects of encroachment on Ikose. The instinctive responses of the predominantly agrarian population to incursion on agricultural land was to move further away from the settlements for farming activities, with the implications of this on farm size, type of crops planted and the general well-being of the people. These are some of the issues investigated next

### **7.2 Response to changing economic base of communities**

One fundamental implication of the above observation is changing economic base of communities (in a way as to mimic the effects of climate change) around the city and that of the city itself, from cash crop production to trading economy and food crop production. Evidences in

communities as Aroje, Okepaku and Ile-ewe as reported above point to the fact that colanut, tobacco, locust beans and cocoa were widely grown by farmers in these areas. These have however been simplified and reduced currently to food crop production. Within the city for instance there are only two of the numerous cocoa beans merchants who obtained their produce from Ajaawa area in Ogo Oluwa L.G.A in the southern part of the city. Traces of once lucrative tobacco business are now seen in buildings once used as tobacco offices but now converted to shops, and, the naming of an area of the town, “Ile-ewe” –“meaning house of leaves”, after tobacco leaves, in obvious reference to an area which once served as center for the collection of tobacco from farmers. The area is now characterized by informal activities and residential development.

### **7.3 Response of increase in distance of farm land**

The inevitable outcome of sale of farmlands usually around built up areas of communities in the urban fringe for purpose of residential development is the need for farmers to cultivate distant lands. A participant in the FCD at Owolaake settlement declared *“there is no land for farming again. In the past, you come out of the house and start farming, now you have to move far away before you can farm, usually trekking”* another elder lamented *“all the huts (referring to land around huts) have become buildings no more land around, except far places, because the population is increasing”*. Speaking in the same vein, another participant at Ikose said *“we used to farm nearby land, but now farm has moved further. Because of distance, we go to farm early in the morning and come back in the evening, just to eat and sleep.”*

Further investigations reveal that, on average, distance of farm is about 3 km, though some go as far as 6 to 8 km. Since the farmlands are in most cases not along established transport route removing possibility of vehicular transport, most farmers go to farm trekking (54.2%) with 28.8% and 3.4% riding bicycle and motorcycle respectively.



#### 7.4 Reduction in farm size in distant land in response to shortage of nearby farmland

Against the observation that farming is the main source of income of respondents (37.1%), further result shows that well over 60% had been in farming business for more than 50 years and could actually recount their farming experiences. On the question of whether size of farmland has increased overtime 29.5 per cent answered in the negative while 18.1 per cent claimed there was actually increase in farm size. Most of the recorded cases of increase in farm sizes were from households in Surulere and Ogbomoso South who were able to pay for hired labourers. The presence of a farm settlement in Owolaake is noteworthy. Table 6 compares the farm sizes when farmer started farming about 50 years ago and current farm sizes. Observations from the table are:

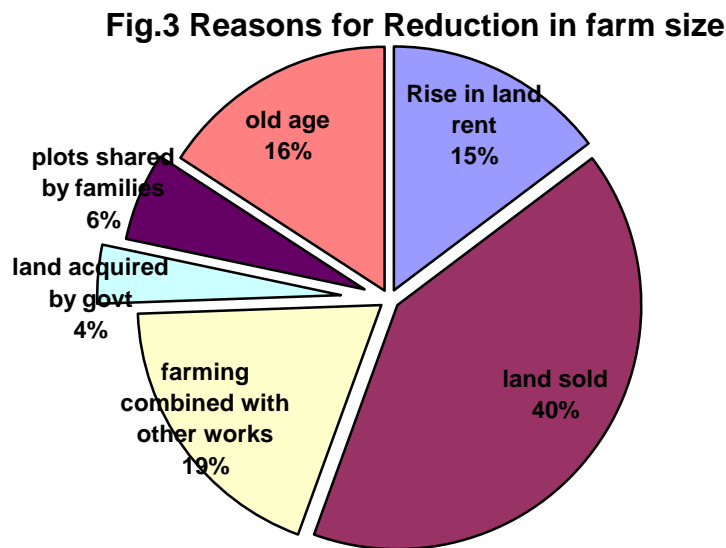
**Table 6: Variations in sizes of farmland and proportion of farmers in the past and now.**

| Size of farm in acres | North       |             | South       |             | Surulere    |             | Oriire     |            | Total No of farmers |        |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|---------------------|--------|
|                       | % then      | % now       | % then      | % now       | % then      | % now       | % then     | % now      | no then             | No now |
| <1.0                  | 72.3        | 84.6        | 72.6        | 89.0        | 57.6        | 59.0        | 71.4       | 77.8       | 181                 | 242    |
| 1.1-2                 | 13.9        | 10.9        | 17.8        | 8.5         | 6.1         | 15.4        | 7.1        | 5.6        | 35                  | 31     |
| 2.1 –3                | 8.8         | 3.2         | 8.2         | 2.4         | 27.3        | 12.8        | 14.3       | 16.7       | 29                  | 15     |
| 3.1 – 6               | 1.5         | 1.3         | 1.4         | -           | 6.1         | 2.6         | -          | -          | 5                   | 3      |
| > 6                   | 5.0         | -           | -           | -           | 3.0         | 10.3        | 7.1        | -          | 7                   | 4      |
| Total no              | 137         | 156         | 73          | 82          | 33          | 39          | 14         | 18         | 257                 | 295    |
| <b>Total %</b>        | <b>53.3</b> | <b>52.9</b> | <b>28.4</b> | <b>27.8</b> | <b>12.8</b> | <b>13.2</b> | <b>5.4</b> | <b>6.1</b> |                     |        |

- (a) There is a decrease in farm sizes
- (b) The number of farmers cultivating over 6 acres decreased from 7 to 4 (43%) and those cultivating 3.1 – 6 acres, 2.1 – 3 and 1.1 – 2 acres decreased by 40%, 48% and 11%
- (c) The above observation is most pronounced in Ogbomoso North, South and Oriire local government areas. These are the areas with most rapid incursion (see fig.2)
- (d) The only exception is in Surulere local government where the proportion of farmers in the large-size farm category increased from 3.0 to 10.3%.
- (e) Perhaps as a response to increasing shortage of land, and rising cost, farmers are reducing the size of their farmland, even though absolute number of farmers are

increasing. This may be in response to recent programmes, cassava revolution in particular, aimed at promotion of agricultural activities by the current Obasanjo administration.

On why there is a decrease in farm size, figure 3 illustrate .the response pattern, with sale of parts of land (40.5%) being the most important reason, followed by the fact that, farmers now combine other works with farming (18.8%) old age 15.8% and increase in price of land (14.8%).



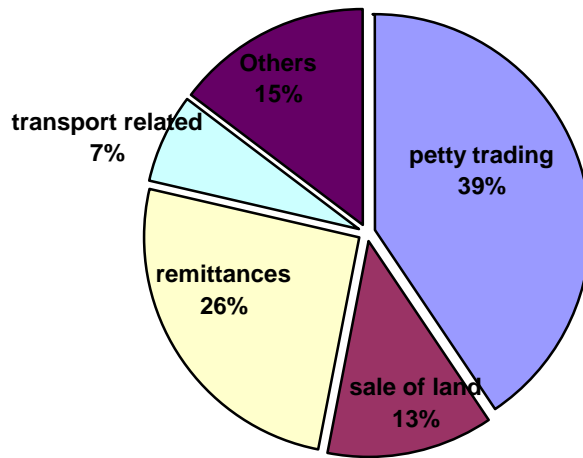
### 7.5 Occupational diversification in response to declining fortune of farming

The combined influence of increasing shortage of farmland and rising cost of living including farming inputs of farming activities is low productivity. The imperatives of sustenance have thus compelled occupational diversification within the possibilities offered by available capital in the case of trading and transport related business or other accessible physical and social assets.

On why farmers seek complimentary sources of income to farming, an elder in Arinkinkin settlement promptly replied, “*Ona kan o woja*” meaning “more than one road lead to the market” or in context, there should not be only one way to the market”. In order words, the inadequacy of any one means of survival, particularly farming is fundamental. While some

farmers were known in the past to have maintained large families and sponsored children to school even up to the university from farm proceeds, the same is not possible today, given the fact that, in some cases, total proceeds from farm is just less if not more than cost of farm input

**Fig.4 Secondary sources of Income to Farmers**



As shown in Figure 4, petty trading (40.4%) was the most important secondary source of income to farmers, followed by remittance from children (25.7%). Other works combined with farming were artisanal works such as crafts (14.7%) and sale /resale of landed property (12.5%).

Table 7 shows that the above observation holds in Ogbomosho North and Surulere Local government area. In Oriire local government, remittance from children (37.5%) was the most important source of income to respondents and as an elder observed *“we cannot farm around here as we used to do, any person wishing to farm must go far, that is why some of us are not working, but depend on whatever our children send for feeding”*

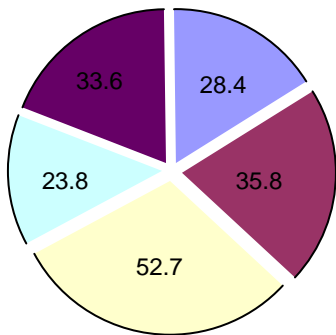
**TABLE 7: Variations in importance of other income sources combines with farming**

| L.G.A    | Petty trading | Sale of landed property. | Remittances | Transport related business | Others (gifts) | TOTAL      |
|----------|---------------|--------------------------|-------------|----------------------------|----------------|------------|
| North    | 34<br>47.2    | 5<br>6.9                 | 17<br>23.6  | 5<br>6.9                   | 11<br>15.3     | 72<br>52.9 |
| South    | 11<br>27.5    | 12<br>30.0               | 9<br>22.5   | 3<br>7.5                   | 5<br>12.5      | 40<br>29.4 |
| Surulere | 8<br>50.0     | -<br>-                   | 6<br>37.5   | 1<br>6.3                   | 1<br>6.3       | 16<br>11.8 |
| Oriire   | 2<br>25.0     | -<br>-                   | 3<br>37.5   | 0                          | 3<br>37.5      | 8<br>5.9   |
| Total    | 55<br>40.4    | 17<br>12.5               | 35<br>25.7  | 9<br>6.6                   | 20<br>14.7     | 136        |

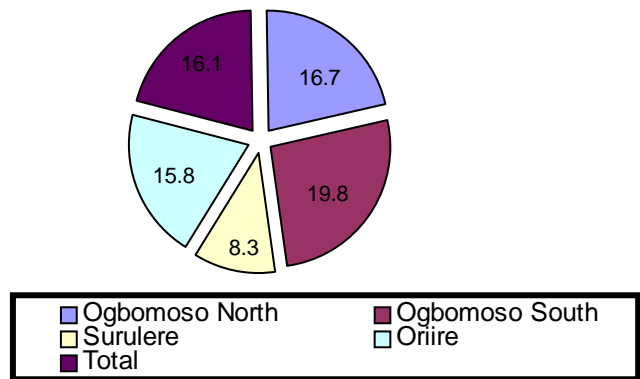
**7.6 Change in occupation from farming in response to decline fortune of farming.**

While as observed earlier some respondents combined farming with other business in response to growing unprofitability of farming, some have completely abandoned farming. For instance, of the 188 or 33.6 who claimed farming was their first ever occupation, only 52 or 16.1% currently farm.. Figure 5a and 5b show the decrease in proportion of farmers in the four local government areas.

**Fig.5a % of Respondents were farmers**



**Fig 5b % of Respondents who current farm**



Further analysis reveals that proportion of petty traders rose from 21.7% to 32.3 % while that of the unemployed increased from 2.3% to 6.2%. This shows that farmers are increasingly leaving farming for petty trading, that is, change in occupation from agriculture, where food and cash crops were the main articles to basically trading economy. Should this trend persist, the economic base of the communities will change from being the food basket of the region to trading economy, where articles of trade will be products of industrial cities. the increasing number of unemployed has implications for security of lives and property and thus the livability of the hitherto relatively peaceful communities. It is concluded that while more farmers have abandoned farming, number of petty traders and unemployed have increased.

### **7.7 Reasons for abandoning farming**

On why farmers continued to abandon farming, need to supplement income as a result of rising cost of living was mostly mentioned with 54 or 30.0%, while old age (29 or 16.10) and non-availability of farmland (4 or 2.2%) were next important in that order and high cost of farm input with (5 or 2.8%).

### **7.8 Response of divestment of landed property**

One major consequence of urban encroachment in the rural hinterland is increasing demand for landed property either as a result of land speculation or demand for land for purpose of development. Also improvement in socio-economic status of urban dwellers most often result in demand for landed property, usually at the urban fringe with cheaper land price, as a way of investment in immovable property. Pressed by the need to meet social and other economic exigencies, landed property owners in the urban fringe exchange their immovable assets for money, howbeit, from the less vantage positions of the economically depressed, socially and politically inferior platforms.

Results of analysis reveal that more and more households and communities are being divested of total land assets. On the highest number of acres of land ever possessed by the respondents, Table 8, shows the variations in response pattern by local government In all, the size of landed property owned by all the respondents declined from 258.67acres to 201.67 (about 22 percent) or mean decrease from 1.01 to 0.68)

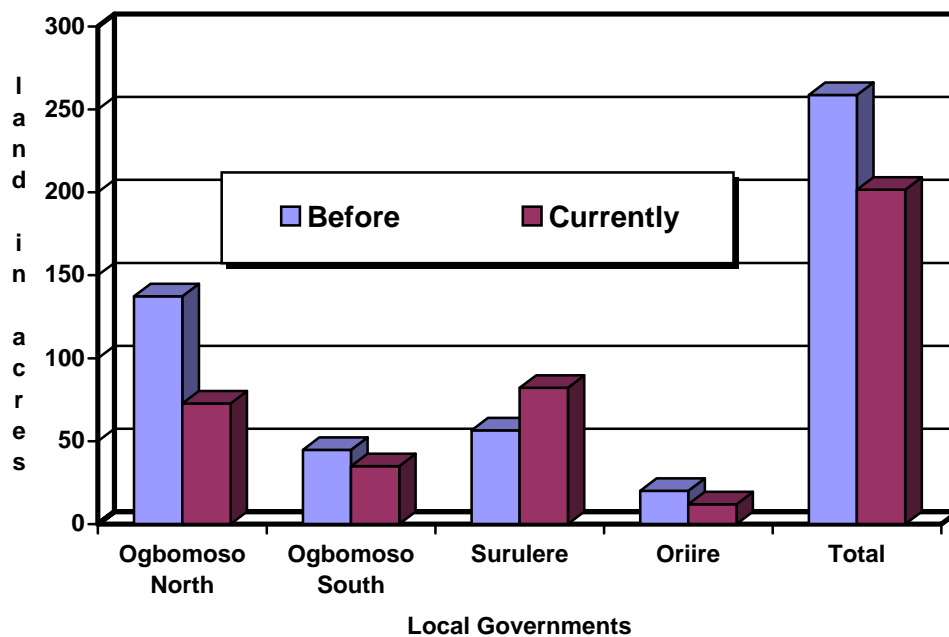
**Table 8: Variations in number of plots ever had and currently possessed by Local Government**

| Statistics        | North      |            | South     |             | Surulere  |           | Oriire    |           | Total      |            |
|-------------------|------------|------------|-----------|-------------|-----------|-----------|-----------|-----------|------------|------------|
|                   | Ever had   | Current    | before    | Now         | Before    | Now       | before    | now       | before     | now        |
| Mean no           | 1.01       | 0.47       | 0.61      | 0.43        | 1.71      | 2.11      | 1.42      | 0.65      | 1.01       | 0.68       |
| Range             | 12         | 7          | 4         | 3           | 8         | 20        | 10        | 3         | 12         | 20         |
| Variance          | 141.35     | 26.7       | 26.2      | 11.3        | 176.9     | 533.8     | 246.7     | 27.16     | 121.3      | 99.0       |
| Std Dev.          | 11.9       | 5.17       | 5.12      | <b>3.37</b> | 13.3      | 23.1      | 15.7      | 5.21      | 11.02      | 9.95       |
| Sum               | 137.33     | 72.8       | 44.8      | 35          | 56.5      | 82.2      | 20        | 12        | 258.67     | 201.67     |
| No of Respondents | <b>137</b> | <b>156</b> | <b>73</b> | <b>82</b>   | <b>33</b> | <b>39</b> | <b>14</b> | <b>18</b> | <b>257</b> | <b>295</b> |

The decrease is over 50% in Oriire and Ogbomoso North, that is from 8.57 to 3.8% and 6.01% to 2.80 % respectively, the only exception being Surulere where average landed property held in possession increased by 23% (from 1.71 to 2.11 ).

Figure 6 illustrate the variation and changes in total landed property of communities and households in the four local government areas. The figure compares the situation about 50 years ago and the current. The figure shows that apart from Surulere local government where total size of landed property increased from 56.5 to 82.2 acres, (45%); the size of landed property held by households and communities decrease from 137.3 to 72.8; 20 to 12 and 44.8 to 35 respectively in Ogbomoso North, Oriire and Ogbomoso South L.G.A. The figure presents a picture of greatly depleted assets held in possession by households in different local government areas and an implication of increasing vulnerability and landlessness, except of course where revenue accruing was invested in other profitable business which was not the case in most instances.

**Fig 6: Local Governments variations in total Landed property had by respondents before and currently**



Further analysis shows that more than 50% of inherited land had been sold. This is more so in Ogbomoso North, where urban expansion is most rapid. In Ogbomoso South, respondents who inherited various number of acres less than 6, had sold off everything.

While most respondents (64.1%) could not give specific reason for selling off inheritance, “pressure from people who wanted to buy” was most frequently mentioned (17.7%) followed by need to pay children school fees (10.6%), need to offset family debt (4.5%), doing other business (2.0%) and purchase of other property (1.0%) were other reasons for sale of landed property.

What the above implies are: first: since community and family lands are increasingly being held in possession by individuals, there is a possible move away from communal land holding to individual land holding in a society where land tenural system was communal in nature, with family land held in trust by family head. Part of the importance and respect of any Community or family head is derived from size of land held in trust (with ownership implication). The most respected head wield strong influence over his subjects and thus able to maintain law and order or at least exercise some form of control over the community or family

members. The removal of this source of authority implies removal of one of the instruments of societal cohesion, with the far reaching implications on structure and functioning of the society.

Secondly, accessibility to is more difficult while litigations over land and related disputes are more pronounced. The Facilitator of the FGD was simply told no, when he asked whether he could get a plot of land in four of the five communities where FGD was conducted. Also a participant in the FGD at Oke Aduin recalled how he *purchased the same plot twice from different group of family members who lay claim to it. In some other situations indigenes lay claim to one or two economic trees which are left by a developer long after selling the land*” The increase in number of landless adults is a logical consequence.

## **7.9 Response to rising cost of accommodation**

A major observation on impact of urban expansion is increasing demand for housing and resultant effect on rising price. For those whose income lag behind rent increase within the city, responses include readjustment of living conditions for cheaper and lower housing quality or smaller room apartments. In some cases it is the movement of people from the urban to peri-urban areas in search of cheaper accommodation. There seems to be consensus of opinion on the negative impact of city growth on house rent in different communities as about 87.5% of respondents answered in the affirmative that urban expansion has led to increase in house rent in all the local government areas.

Result of analysis shows that the bulk of the rent paying respondents (66.3%) had their first accommodation in the Ogbomoso urban before moving to their present residence in the peri-urban communities. Also majority, (35.66%) left the urban area between (1981- 90) about 20 years ago. On first accommodation, in their current domicile most rent paying respondents occupied just one room (43.1%) while 42.7% occupied two rooms. Very few occupied 3 rooms (5.2%) and 4 rooms (6.6%.) On the average, respondents paid just between ₦75 and N100.00 and in some cases a token just to establish their rent paying status. Others had rent free accommodation, where owner wanted company of people and hands in maintaining environmental sanitation within and around the building.

However, the bulk of respondents (81.0%) in the rent paying category have changed accommodation, twice (35.6%) up to thrice (16.7%) and even four times (6.7%). Most of the changes in accommodation took place between 1981-1990 (34.3%) in response to rising cost of



accommodation. Recent changes in accommodation were few, only 7.2% between 2001-2007, perhaps because, newer apartments were more expensive and new tenants in new residences pay more than old tenants in old dwellings.

Increase in family size was the most important reason (26.5%) why respondents changed accommodation, followed by rise in house rent (17.06%), change of occupation (11.5%) which compels relocation higher income. Increase in house rent is a logical outcome of pressure of population on existing housing stock.

Although most of the respondents were in owner occupied buildings 51.0% or in houses owned by relatives (17.4%). They were not impervious to rising cost of accommodation and general cost of living as they readjust living conditions to sublet parts of previously occupied buildings so as to increase income. However, additional households in traditional bungalows for instance amounts to higher occupancy ratio and additional stress on already poor facilities such as kitchen, bathroom and toilet, where these are available. The implications on environmental sanitation and health particularly in an environment poorly served with or without potable water and lacking waste disposal is obvious.

#### **7.10 Response to rising cost of healthcare**

Although measurement of impact of urbanization on human health in the hinterland is a little difficult since causal relationship cannot be established among disease aetiology and prevalence rates. It is however not difficult to associate certain health related issues with burden of urban incursion. It has been observed that, given the new contacts between animals and humans prompted by the spread of cities into former agrarian and undeveloped lands, it should not be surprising that there is a reemergence of old and the evolution of new infectious diseases, such as HIV, tuberculosis, yellow fever, lyme disease and dengue fever (Barrett et al. 1998). At the global level, this has been attributed to combined influence of global trade and mobility (McMichael, 2000). At the local level, pressure of population on housing and consequential increase in price, and rise in cost of living generally implies reduced expenditure on food and low calorie intake, leading to susceptibility to infectious and communicable diseases, which are often aggravated by poor environmental sanitation.

Of all the diseases respondents were asked to indicate whether they suffered from in the last six months, malaria with 42.6% was the most prevalent in all communities. Other reported

cases are: Typhoid (9.5%), Cholera (3.1%) and Diarrhoea (1.7%). On where respondents seek treatment, results show that such perceived cost saving measures as self medication was widely practiced (40 %), followed by medicine vendors (15%) and chemist shop (9%). Aa participant in the FGD at Owolaake was enthusiastic in educating the facilitators on common herbal remedies for malaria and measles as he prescribed juice from “Oruwo” leaves and “ewuro –bitter leave mixed with palm oil for malaria and measles respectively.

## **8 SUMMARY AND CONCLUSION**

City expansion in Ogbomoso between 1914 and 2007 has been phenomenal with a total of 2,890 hectares of rural land engulfed in about 90 years, giving total expansion rate of 2.15 per thousand in the period under consideration. Visible impact include surreptitious encroachment on fertile agricultural land, stress on the natural environment , with ominous implications for the economic base, socio-economic and demographic characteristics, health and well being of communities in the peri-urban areas

The Responses of households and communities in the rural hinterland to urban encroachment varied greatly, including such measurable variables as: , sale of landed property; rudimentary occupational diversification in particular, combination of farming; the main source of income, with in most cases, petty trading; reduction in scale of farming; increasing distance of farmlands and change from farming or its complete substitution for petty trading and low skilled jobs in the growing public sector in the urban area. Individual land holdings, is now widely practiced in response to changes in land tenure systems, from customary/community ownership and increase in number of landless adults. Also observable are readjustment of living conditions as rooms are rented out in previously owner occupied buildings. On rising cost of food stuff, residents are increasingly relying more on locally produced and largely carbohydrates farm products while essential non farm items are exchanged for farm products and are purchased in small quantities at a time to maintain three linear meals per day. Furthermore, expenditure profile is adjusted to minimize spending on health. In most cases, traditional medicine and self-medication, with doubtful efficacy are widely practiced, except in critical and emergency situations before the clinic or hospitals are consulted.

Although such psycho-social behaviours as aggression, depression, crime, prostitution, domestic violence, ritual practices, cultism etc are some of the deviant behaviours associated

with any significant agglomeration of human beings in different societies, the prevalence rate as well as varying form and sophistication as reported in some of the communities covered in peri-urban areas, may be linked, indirectly with frustrations arising from rising cost of living in the context of declining earning power and the need for individuals to meet societal expectations of “responsible and successful adult” or “progressive citizen”.

## **9 PLANNING AND POLICY ISSUES**

As objects of positive policy, it is suggested that:

- 1 Government should establish farm settlements at designated places at the urban fringes, particularly at Aroje and Abaa, and, that land should be allocated to farmers based on need as well as provision of other farm input subsidies and necessary services. This will revitalize economic activities at the urban fringes and progressively improve the standard of living of the people as well as serve as a check to prevent further spatial expansion of the city. At the same time this measure will encourage vertical rather than horizontal city expansion.
- 2 It is also strongly recommended that urban growth boundaries could be demarcated by adopting the use of green belt area around the city. This will not only enhance the aesthetic value of the environment but also serve to slow down the rate of urban spatial expansion.
- 3 Nevertheless, there is the need for layout design and close monitoring of development in areas around Adwin, Aroje, Abaa and Sunsun, to forestall development of slum and squatter settlements. In this vein, urban development planning and management should assume a metropolitan status, where an holistic approach to development control, urban planning and management are pursued within a city-wide framework.
- 4 There is the need for urgent provision of basic infrastructure, such as electricity and portable water at Adwin which is a fast growing slum. The need to closely monitor development along this area is important to prevent flagrant violation of development control measures.
- 5 The formalisation and reinvigoration of farmers association in the same way the government is promoting Community Development Associations within cities for the improvement of urban localities is suggested. Through the associations farmers can directly receive financial assistance and other farm input subsidies and other logistic support from government and extension workers. The fear of the union turning militant movements as was done in Western Nigeria when farmers revolted against government policy on agricultural prices in the popular “Agbekoya” – meaning, *farmers resist oppression* revolt is baseless. This is because it is only appropriate pricing of farm products that will ensure product availability.

## REFERENCES

- Adindu G. O. & Ogbonna E. F. (1998) "The Dilemma of Urban Expansion. A case study of Owerri," *Journal of the Nigerian Institute of Town Planners*, Vol. XI Oct 1998.
- Akinbola O. (2004) "An Assessment of the Effects of Urban Growth Incursion into rural Lands in Ogbomoso Oyo State , Nigeria "An Unpublished M.Sc. Thesis Obafemi Awolowo University Ile-Ife. Osun State.
- Barret, R., C.W. Kuwaza, T. McDade, and G.J. Armelagos, 1998. *Annual Review of Anthropology*, 27:247-241.
- Best R. (1970) "Regional conversion of Agricultural Land to Urban use in England And Wales (1945 – 1967)": *Institute of British Geographers. Transactions and papers 1970* Publication NO 4 G.
- Brennan, E.M. (1999) "Population, urbanization, environment and security: A summary of the issues". Washington D.C., Woodrow Wilson International Center for Scholars, 1999. p 4-14.
- Brockherhoff, M.P. "An urbanizing world". *Population Bulletin* 55(3): 3-44. 2000.
- Bruce, N., Prez-Padilla, R., and Albalak, R. "The health effects of indoor air pollution exposure in developing countries". Geneva, World Health Organization, 2002. 41 p. (Available: <http://www.who.int/peh/air/indoor/OEH02.5.pdf>, Accessed Fed. 10, 2003).
- Cariboni, D. Cities of the south on the verge of collapse. Inter Press Service wire service. (San Jose, California), April 2, 2002. p. 4.
- Chabra R. (1985) "India Environmental Degradation Urban Status Political Tension" Dreper Fund Report.
- Chambers, N., Simmons, C., and Wackernagel, M. Sharing nature's interest: Ecological footprint as an indicator of sustainability. London, Earthscan Publications, 2001. 185p.
- Dowall, D t and Giles Clark (1991). "Making Urban land markets works Draft paper prepared for the Urban Management programme Washington D.C. the world Bank.
- EL-Shakhs, S. and Amirahmadi, H. Population dynamics, urbanization, and the planning of large cities in the Arab world. In: Amirahkmadi, H. and El-Shakhs, S., eds. *Urban Development in the Muslim World*. New Brunswick, New Jersey, Center for Urban Policy Research, 1993. p. 233-252.
- Hardoy, J., Mitlin, D., and Satterthwaite, D. Environmental problems in an urbanizing world – Finding solutions for cities in Africa, Asia and Latin America. London, Earthscan Publications, 2001. 448p.

- Kates, N.B and T.M. Parris. 2003. Long-Term trends and a sustainability transition. *Proceedings of the National Academic of Science*, 100(14): 8062-8067.
- Kwasi Nsiah-Gyabaah (2004) “Urbanisation Processes – Environmental and Health effects in Africa”. Population Environment Research Network (PERN) Cyberseminar. Urban Expansion: The Environmental and Health Dimension 29 Nov –15 Dec. 2004.<http://www.populationenvironmentresearch.org/seminar>
- LM van den Berg, M S van Wijk and Pham Van Hoi (2003) “The Transformation of rural Life downstream of Hanoi” *Environment and Urbanisation*. Vol. 15 No 1, pp 35-52
- McMichael, A.J. 2000. The urban environment and health in a world of increasing globalization: Issues for developing countries. *Bulletin of the world Health Organization*, 78(9): 1117-1126.
- McMichael, A.J.2000. The urban environment and Health in a world of increasing globalisation: Issues for developing countries. *Bulletin of the World Health Organisation*, 78(9):1117-1126.
- Redman, C.L. 1999. *Human impacts on ancient environments*. Tucson: University of Arizona Press
- Redman, C.L. and N.S. Jones (2004) “The Environment, Social, and Health Dimensions of Urban Expansion” Population Environment Research Network (PERN) Cyberseminar. Urban Expansion: The Environmental and Health Dimension 29 Nov –15 Dec. 2004.<http://www.populationenvironmentresearch.org/seminar>
- Rees,W. Revising carrying capacity: Area-based indicators of sustainability. *Population and Environment: A journal of Interdisciplinary Studies* 17(3): 1-22. Jan. 1996.
- Shahab Fasal (2000), “Urban Expansion and loss of Agricultural Land:A GIS based study of sharanpur city India”. *Journal of Of Environment and Urbanization*. VI. 12 No.2 October 2000.
- Torrey Barbara Boyle (2005) “Urbanisation: An Environmental Force to be Reckoned With” Population Reference Bureau
- United Nations, *World Urbanisation Prospects: The 2003 Revision* (New York: UN 2004)
- United Nations Centre for Human Settlements (UNCHS). *An urbanizing world: Global report on human settlements*, 1996. Oxford, Oxford University Press, 1996. 559 p.
- UNDP (2000) “Ha Noi: an urban profile”, Project VIE/95/050, United Nations Development Programme, Hanoi.:

US Department of Agriculture. 2001. *Maintaining farm and forest lands in rapidly growing areas*. Policy Advisory Committee on Farm and Forest Lands Protection and Land Use, Report to the Secretary of Agriculture, USDA, Washington, D.C.

World Bank 1997; Environmental Assessment Sourcebook, No.19