

SPATIAL ANALYSIS OF HOUSING UNITS IN DELTA STATE OF NIGERIA: IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT

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Abstract

Good housing implies not only structurally sound shelter, but also the availability of adequate living space in a secured environment, with access to employment opportunities and essential social services and amenities. Conditions for good housing, therefore, require that certain amenities and facilities, such as portable water supply, energy supply, adequate toilet, kitchen, bathroom, refuse and sewage disposal be available. Thus, housing is a multidimensional, rather than a single commodity. The paper examines housing units as important index of socio-economic development in Delta State of Nigeria. Secondary data from the Delta State Household Survey of 2006 formed the data-base of the study. The present study is also an attempt to fill housing data gap in Delta State of Nigeria.

Statement of Problem

Housing is a physical and social necessity of life. It plays a number of fundamental - social, economic, psychological,

environmental and health - roles in the well being of the people and the economy. Consequently, housing is generally considered to hold a place of strategic importance in development.

The effective demand for housing relates to the quantity and quality of housing that can be afforded, in terms of ability and willingness to pay, by households, with or without loans, subsidized or unsubsidized. However, housing need, on the other hand, incorporates the total requirement for shelter without regard to the ability of households to pay for it (Nevitt, 1967; Bourn, 1981 and 1985). It refers to the number of dwelling units that must be built or improved to provide each household with adequate dwellings of socially acceptable standards. Thus, housing need is a measure of the extent to which the quality and quantity of existing accommodation falls short of that required to provide each household or person in the population, irrespective of ability to pay or of particular personal preferences, with accommodation of specified minimum standard and above. Therefore, housing need refers to the inadequacy of existing housing conditions when compared with some standard or norm of what is socially acceptable.

Good housing, according to Agunbiade (1983), implies not only structurally sound shelter, but also the availability of adequate living space, in a secured environment, with access to employment opportunities and essential social services and amenities. Conditions for good housing therefore, require that certain amenities and facilities, such as portable water supply, energy supply, adequate toilet, kitchen, bathroom, refuse and sewage disposal be available (Orubuloye, 1993).

The problems of housing in Nigeria are enormous and characterised by regional variations, particularly in terms of rural-urban differences. The problem in the rural areas, according to the Report of the Special Committee on the National Housing Policy, is primarily that of quality and inadequacy of infrastructural

facilities (FRN, 1985). Water supply coverage in rural areas is only 39%, compared with a national average of 57.9% and 81% for urban centres. Similarly, sanitation coverage is 45% compared with the national average of 63% (World Bank, 2001). Furthermore, in many of the smaller rural areas too, housing is characterized by poor structural parameters, more so, in the remote or riverine areas.

There is overwhelming dominance and concentration of the housing problems in urban area, where “overcrowding, high rents slums and squatter settlements are visible” (FRN, 1985). However, various estimates and indicators illustrate the magnitude of housing shortage.

Adeokun (1990) estimated that as many as 6-7.3 million dwelling units (about 300,000-360,000 annual housing starts) were required to meet the housing needs of urban centres in Nigeria between 1980 and 2000. These estimates took into consideration only population, i.e. new household formation. They ignored the number of dwelling units required to reduce existing overcrowding to minimum acceptable standards and replace or improve existing dwelling units that are substandard or will be lost in the inventory due to old age redevelopment/planning purposes.

Mabogunje (1988) estimated that the urban housing deficit, which was running at between 0.85 million and 1.03 million per annum between 1975 and 1985, would rise to about 1.6 million units between 1985 and 2000. It would require about 37 million new housing units to satisfy housing demands in both rural and urban areas by the year 2000 (FRN, 1985).

At over 100 million population, growing at an annual rate of 2.5percent, the overall population growth is well over 2.5 million a year, which, at an average household size of 5.5, translates to well over 400,000 new households. However, the provision of the various States Housing Corporations was also very minimal (AHNC, 1995). The few states for which data is available

on housing starts in the private sector (Onibokun, 1985; Kumuyi and Onibokun, 1990), then, were abysmally low. Thus, there is a big gap between housing supply and new household formation.

Furthermore, housing in urban centres of Nigeria also suffers from considerable qualitative deficiencies with respect to both structural parameters and in-house facilities. Deterioration and dilapidation permeates the housing stock. Altogether, about 1 in every 5 urban dwellings were either dilapidated or in need of major repairs in the 1980s. This situation reflects both the initial poor construction materials and poor construction technology, particularly for the older inner city housing and peripheral shanty areas, as well as poor and inadequate maintenance. In addition, according to the World Bank (1996), urban infrastructure services in Nigeria are not just poor, but worsening. Clearly, over 50% of houses in urban areas lack access to four of the five basic facilities: in-house water supply, flush toilet, in-house kitchen in exclusive use, in-house bath with running water in exclusive use, and electricity. The only exception is electricity. Higher proportions still lack access to one or two of the other facilities. These indicate the magnitude of the number of existing houses that would need to be improved upon, with respect to the provision of facilities in order to meet the housing needs of the existing urban population.

Deriving from the above, this paper critically examines the spatial distribution of housing units in Delta State and their implications for sustainable development.

The Study Area

Delta State is located in the southern part of Nigeria. The southern part of the State is essentially riverine, with numerous rivers, creeks, marshy terrain and mangrove swamps. The topography barely lies above the sea level, resulting in the incidences of floods in the rainy periods of the year. The northern part of the State is a

tropical rain forest belt. The State lies roughly between longitude 5⁰00 and 6⁰45 North East and Latitude 5⁰00 and 6⁰30 North.

The State is bounded in the North by Edo State, Ondo State to the North West, Anambra to the East, Rivers to the South East, and on the southern flank by the Bight of Benin, which covers approximately 160 kilometres of the State coastline.

Delta State was created on August 27, 1991. It has 25 Local Government Areas. The State has its capital at Asaba. It has a population of 4098391 (2006 Population Census).

Methodology

The data for this paper were derived mainly from secondary data based on the Delta State Household Survey 2006, which had a total sample population of 24,239 broken into 12,507 males and 11,732 female. However, a total of 6,020 questionnaires (representing approximately 25% of the sampled population) were administered randomly in all the 25 Local Government Areas of Delta State. The distribution of the sampled population in Household by Local Government and by sex is shown in Table 5.1.

Results and Discussion

This section examines the various types of housing units, both residential and commercial; types of materials used for construction of floor, walls and roof; sources of water supply, types of toilet facility; source of fuel for cooking and lighting.

The percentage distribution of housing units in the 25 Local Government Areas of Delta State are shown in Table 5.2. It was observed that 99% of the sampled population lived in Housing Units, while 0.5% lived in Homes for the Aged, 0.3% in Prison/Penal homes, and 0.1% in Hotels. However, another 0.1% lived in unspecified housing units that could not be classified into any type of housing units (others). By implication, 99% of the

population in Delta State are living in normal housing units, while the remaining 1.0% live in abnormal units.

Warri South has the highest number of males with 1,265 (51.6%), while the females were 1,187 (48.4%) of the sampled population in the Local Government Area. However, it was noted that females dominated the sampled population in Ethiope West, Ethiope East, Okpe, Ika South, and Warri-South-West Local Government Areas. Burutu Local Government Area had the lowest female distribution of 42.2% and Ethiope East the lowest male distribution of 44.8%.

Table 5.1: *Distribution of Sampled Population in Household by Local Government Areas (LGA) and by Sex.*

LGA	SEX		TOTAL	%
	MALE %	FEMALE %		
Aniocha North	230 (50.8)	223 (49.2)	453	100
Aniocha South	444 (51.7)	414 (48.3)	858	100
Bomadi	287 (56.2)	224 (43.8)	511	100
Burutu	858 (57.2)	639 (44.8)	1497	100
Ethiope East	502 (44.8)	617 (55.2)	1120	100
Ethiope West	649 (49.2)	670 (50.8)	1319	100
Ika North East	1016 (50.9)	981 (49.2)	1997	100
Ika South	473 (46.8)	538 (53.2)	1011	100
Isoko North	374 (49.3)	384 (50.7)	758	100
Isoko South	610 (52.5)	551 (47.5)	1161	100
Ndakwa East	604 (53.8)	518 (46.2)	1122	100
Ndakwa West	671 (54.4)	563 (45.6)	1234	100
Okpe	161 (46.8)	183 (53.1)	344	100
Oshimili North	294 (51.2)	280 (48.8)	574	100
Oshimili South	315 (51.9)	291 (48.1)	606	100
Patani	160 (53.5)	139 (46.5)	299	100
Sapele	746 (52.7)	671 (47.3)	1417	100
Udu	376 (52.7)	338 (47.3)	714	100
Ughelli North	640 (51.7)	598 (48.3)	1238	100
Ughelli South	887 (53.8)	764 (46.2)	1652	100
Ukwuani	347 (49.9)	349 (50.1)	696	100
Uvwie	395 (52.2)	728 (47.8)	1523	100
Warri North	224 (52.6)	202 (47.4)	426	100
Warri South	1265 (51.6)	1187 (48.4)	2452	100
Warri South-West	93 (44.9)	114 (55.1)	207	100
TOTAL	13021 (57.3)	12167 (48.7)	25189	100

Source: Delta State Household Survey, 2006

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Table 5.2: Percentage Distribution of Households by LGA and by type of Housing Units (Residential).

LGA	TYPE OF HOUSING UNIT					
	Housing Units	Hotel	Students Residence	Home for the Aged	Prison/ Penal Homes	Others
Aniocha North	99.4	0.6				
Aniocha South	100					
Bomadi	98.7					1.3
Burutu	100					
Ethiope East	99.3			0.7		
Ethiope West	100					
Ika North East	100					
Ika South	99.6				0.4	
Isoko North	100					
Isoko South	100					
Ndokwa East	100					
Ndokwa West	99.6				0.4	
Okpe	100					
Oshimili North	88	1.4		8.5	0.7	1.4
Oshimili South	100					
Patani	100					
Sapele	100					
Udu	99.4		0.6			
Ughelli North	97.4				2.6	
Ughelli South	93.4			5.3	1.3	
Ukwuani	100					
Uvwie	100					
Warri North	100					
Warri South	99.2		0.4		0.2	0.2
Warri South-West	100					
TOTAL	99	0.1	0.1	0.5	0.3	0.1

Source: Delta State Household Survey, 2006.

In addition, the percentage occupancy distribution of the households in the 25 Local Government Areas of Delta State were examined (Table 5.3).

Table 5.3: Percentage Distribution of Households by LGA and by type of Housing Units (Occupancy).

LGA	House on a separate stand of yard	Traditional Hut Structure made of Traditional material	Flat in block of flats	Semi-detached house	Rooms / Let in house	Informal/Improved dwelling	Others
Aniocha North	13.3	14.5	51.2	4.2	16.9		
Aniocha South	9.3	21.4	24.7	2.8	40.9	0.9	
Bomadi	38	24.7	8	2	27.3		
Burutu	27.8	32	10.5	17	11.8	0.8	
Ethiophe East	35.1	5.22	5.6	6	48.1		
Ethiophe West	3.33		13.3		83.3		
Ika North East	38.7	2.06	11.5	7.8	38.3	1.6	
Ika South	24	2	11.2	0.4	62.4		
Isoko North	13.5		9.13	43	33.9		
Isoko South	1.8	1.29	22.1	44	31.1		
Ndokwa East	46	25.1	12.8	7.5	7.5	1.1	
Ndokwa West	67.9	16.4	6.3	2.6	6.72		
Okpe	7.5	14	6.5		72		
Oshimili North	28.2	16.9	19.7	3.5	31	0.7	
Oshimili South	29.4	11.9	26.2	2.4	30.2		
Patani	15	27	8		50		
Sapele	7.9	8.79	21.5	5.8	53	1.2	
Udu	29.4	1.67	13.3	0.6	55		
Ughelli North		0.51	2.3		97.2		
Ughelli South	12.8	21.9	7.8	12	45.2		
Ukwuani	48.7	18.7	9.3	5.3	18		
Uvwie	2.81	0.63	39.7	3.1	51.3	2.5	
Warri North	34.6		0.8	64.6			
Warri South	4.2	4.38	33	5.7	5.2	0.6	0.2
Warri South-West	10	36	24	6	24		
TOTAL	19.6	10.3	16.6	9	44	0.5	0

Source: Delta State Household Survey, 2006

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Table 5.4: Percentage Distribution of Households by LGA and by type of materials used for flooring

LGA	Earth/ Mud/ Bricks	Cement/ Concrete	Stone	Burnt Bricks	Woods	Vinyl Titles	Ceramic marble/ Tiles	Terr- azzo	Others
Aniocha North	12.7	83.7	1.8	1.2				0.6	
Aniocha South	19.5	77.7		2.3			0.5		
Bomadi	13.3	76.7		10					
Burutu	39.4	54.8	0.3	0.8	4.7				
Ethiope East	12.3	86.9		0.7					
Ethiope West		93.3	3.3	3.3					
Ika North East	0.41	97.5	1.2	0.4					0.4
Ika South	2.8	86.4		3.2		4.8	2.8		
Isoko North	7.83	8.57	0.4	1.3		3	1.7		
Isoko South	0.77	81	18						
Ndokwa East	34.2	58.3		5.3	1.6			0.5	
Ndokwa West	7.84	79.9	3.7	1.1	7.5				
Okpe	15.9	82.2		0.9			0.9		
Oshimili North	21.8	69.7	1.4	2.8		2.1	0.7		1.4
Oshimili South	11.9	87.3					0.8		
Patani	2	98							
Sapele	1.52	97.6		0.3		0.3		0.3	
Udu	2.22	97.8							
Ughelli North	1.79	96.9		1.3					
Ughelli South	27.2	69.4	0.9	1.3			0.6	0.3	0.3
Ukwuani	19.3	78.7		1.3	0.7				
Uvwie		80.3		1.9		1.3	11	5.3	
Warri North	6.92	93.1							
Warri South	3.43	83.8	1	2.3	1.3	1.3	3.8	3	
Warri South- West	2	38	10	4	46				
TOTAL	10.2	82.4	1.9	1.7	1.2	0.6	1.3	0.6	0.1

Source: Delta State Household Survey, 2006

About 44% of the households in Delta State live in room/let in houses, 16.6% live in blocks of flats, 19.6% live in houses on separate stand of yard. However, 9.0% live in semi-detached

houses, while 10.3% live in traditional/hut structures made of traditional materials, and 0.5% live in informal/improvised dwelling.

Furthermore, the type of housing materials used for flooring, walls and roofs in Delta State were also examined (Tables 5.4-6) and discussed sequentially below.

About 82.4% of the households in Delta State use cement/concrete as materials for flooring, as shown in Table 5.4. However, 10.2% used earth/mud/mud bricks 1.9% used stone, 1.7% used burnt bricks, wood 1.2%, vinyl tile 0.6%, ceramic/marble tiles 1.3%, terrazzo 0.6% and other types of material 0.15%. It should be noted that 88.5% of the sampled household used satisfactory type of material for flooring that is cement/concrete, stone, burnt bricks, vinyl tile, ceramic/marble tiles and terrazzo.

Again, the study examined the kind of materials used in building the walls of houses in Delta State, as shown in Table 5.5.

About 80.1% of the sampled population used cement, block/brick for construction of the wall in their houses, while 11.0% used mud/reed, 5.3% wood/bamboo, 2.3% metal/zinc sheet while 1.3% used stone. Thus 80.1% of the sampled population used satisfactory materials for constructing their walls which is cement/block/brick and stone.

The materials used for the roofing of houses in Delta State are discussed in Table 5.5.

Analysis of the materials used for roofing of houses in Delta State (Table 5.6) reveals that 82.8% of the sampled households used corrugated metal/zinc sheets, 6.2% used thatch/palm leaves/raffia, 1.4% used wood/bamboo, 1.3% used Earth/mud/mud bricks, 6% used slate/asbestos, 2.1% used cement, 0.1% roofing tiles and 0.1% used other materials.

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Furthermore, the accessibility of some facilities in housing units in Delta State was examined. The facilities include water supply, electricity and flush toilet, as shown in Tables 5.7-9.

About 50% of the sampled Households in Delta State got their water supply from wells, while 25% got theirs from boreholes. The remaining 25% is distributed as follows: river/stream/spring, 14.0%; tanker supply/water vendors, 4.0%; rainwater, 2.4%; pipe borne water inside dwelling, 4.0; and dug out well/lake/pond, 0.6%; and other sources, 1.0%.

Table 5.5: Percentage Distribution of Households by LGA and types of materials used for wall

LGA	Materials used for wall					
	Wood/ Bamboo	Mud/ Reed	Stone	Cement Blocks/ Bricks	Metal/ Zinc sheets	Others
Aniocha North	0.6	20	1.2	78.3		
Aniocha South	0.5	21	0.5	77.2		0.5
Bomadi	2.7	23	15	59.3		
Burutu	35	21		38.8	5	
Ethiophe East	2.2	14	0.4	82.5	1.1	
Ethiophe West	3.3	25	3.3	68.8		
Ika North East	1.6	1.6		93.4	3.3	
Ika South		5.2	4.4	90.4		
Isoko North		9.1	2.6	87.8	0.4	
Isoko South	0.5	0.5		99		
Ndokwa East	3.8	9.1	2.7	50.3		
Ndokwa West	3.4	15		81	1.1	
Okpe	0.9	17	0.9	81.3		
Oshimili North	9.2	18	2.1	69	1.4	
Oshimili South		11		87.3	1.6	
Patani		1		99		
Sapele		0.6		99.1	0.3	
Udu	1.1	1.1		97.8		
Ughelli North		2.3	0.3	97.4		
Ughelli South	2.2	30	1.9	62.2	3.8	
Ukwuani	1.3	10		81.3	6.7	0.7
Uvwie	0.9	1.9	0.9	83.1	13	
Warri North		16		83.8	1.2	
Warri South	4.4	4.8	0.6	85.1	5.1	
Warri South-West	48			42	10	
TOTAL	5.3	11	1.3	80.1	2.3	0

Source: Delta State Household Survey (2006)

According to Onokerhoraye and Omuta (2005), up to 60% and more of houses in the urban areas in the 1980s had access to pipe borne water - in or outside the house. Although, 75% of houses in urban areas had access to tap water nation-wide, 37% of these had access to the facility in-house. Thus, as many as 71.7% and 62.4% of houses in Lagos and Warri respectively had in-house water supply. The respective figures for Kaduna, Ibadan, Kano, and Benin-City were 40.3%, 38.5%, 261% and 24.9%. However, access to this facility in Cross Rivers, Jigawa, Anambra, Benue, Kogi, Sokoto, Taraba and Yobe were very poor. Less than 10% had access to the facility in many States. The more rural states generally had less access, thus underpinning the rural-urban disparity.

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Table 5.6: Percentage Distribution of Households by LGA and types of materials used for roofing

LGA	Materials used for roof							
	Thatch/ Palm Leaves/ Raffia	Wood/ Bamboo	Corru- gated Metal/ Zinc Sheet	Earth/ Mud/ Mud Bricks	Slate/ Asbestos	Cement / Concrete	Roofing Tiles	Others
Aniocha North	7.8	6	78.3	3.6		4.2		
Aniocha South	1.4	5.1	90.7	1.9		0.9		
Bomadi	24		76					
Burutu	34	2.2	62.8			1.4		
Ethiope East	0.4	0.4	90.7	0.4	8	0.4		
Ethiope West		0.4	88.8		8	3.3		
Ika North East	0.8	0.4	95.1	0.4	1	2.5		
Ika South	2.4		95.2			2.4		
Isoko North	1.3		92.2		3	3.9		
Isoko South	0.5	1	92	5.4		1		
Ndokwa East	30	1.1	57.2	3.7	1	7.5		
Ndokwa West	7.5	10	50.4	2.2	29	0.7		
Okpe	1.9		92.5	3.7	1	0.9		
Oshimili North	21	2.8	73.9	0.7		1.4		
Oshimili South	9.5		86.5	2.4	1	0.8		
Patani			98	2				
Sapele	0.3		98.8	0.9				
Udu	0.6		98.9		1			
Ughelli North	0.3		99.7					
Ughelli South	11	1.9	80	2.2	1	3.4	0.6	
Ukwuani	0.7		80.7		15	3.3		
Uvwie								
Warri North	0.3		65.9	0.6	28	4.7		0.3
Warri South	0.4	1.5	71	1.1	17	7.6	1.1	0.6
Warri South-West	20	2	72		6			
TOTAL	6.2	1.4	82.8	1.3	6	2.1	0.1	0.1

Source: Delta State Household Survey, 2006.

Table 5.7: Percentage Distribution of Households by LGA and sources of water supply

LGA	Sources of water supply							
	Pipe Borne/ Inside Dwelling	Tanker Supply/Water Vendor	Well	Bore Hole	Rain Water	River stream / Spring	Dug out Well/ Lake Pond	Others
Aniocha North	1.8	1.8	81		8.4	6	0	
Aniocha South	6	0.9	27	4.2	32	30		0.5
Bomadi	1.3	8	34	28	3.3	25		
Burutu	0.3		0.8		0.3	88	10	
Ethiopo East	1.5	1.9	65	22	2.2	7.1		
Ethiopo West			90	3.3		6.7		
Ika North East	1.6	2.5	81	13	2.1			
Ika South	3.6	2	25	67	2.4			
Isoko North	3.9	2.2	57	34	0.9	1.7		
Isoko South		8.7	22	69				
Ndokwa East	8.6	8	49	13	4.8	17		
Ndokwa West	3.7	8.2	74	4.5		9.3		
Okpe	2.8	4.7	89	1.9	0.9	0.9		
Oshimili North	0.7	2.8	14	42	4.2	36		
Oshimili South	4	4.8	11	64	0.8	15		
Patani	2	13	55	10		20		
Sapele	1.5		97	1.5				
Udu	7.8	2.8	59	17		13		
Ughelli North	11	6.4	78	3.1		2.1		
Ughelli South	1.9	5.6	84	3.1	2.5	2.8		
Ukwuani	10	20	1.3	16	2.7	50		
Uvwie	15	1.9	18	64	0.6			
Warri North			78	22				
Warri South	4.8	4.4	30	56	0.4	3.6		0.5
Warri South-West				2		98		
TOTAL	4	4.0	50	25	2.4	14	0.6	1.0

Source: Delta State Household Survey, 2006

In addition, the distribution of households with respect to the types of toilet facilities (Table 5.8) was also examined.

Table 5.8: Distribution of Households by LGA and Type of Toilet Facilities

LGA	Toilet Facility						Total
	Water Closet (WC)	Pit Latrine	Toilet Facility (different house)	Public Toilet	Nearby (bush/ beach field)	Others	
Aniocha North	5	146	81	5	10	6	166
Aniocha South	26	164	3	6	15	1	215
Bomadi	20	98	34	11	21		150
Burutu		16	1	23	285	38	363
Ethiope East	45	183	6	9	24		267
Ethiope West	16	76		56	92		240
Ika North East	34	203	4	2			243
Ika South	75	163		12			250
Isoko North	82	105		9	34		230
Isoko South	201	93		95			389
Ndokwa East	28	76	2	17	64		187
Ndokwa West	35	74	5	105	36	13	268
Okpe	15	70	4	17	1		107
Oshimili North	38	81	2	1	17	3	142
Oshimili South	75	31		9	11		126
Patani	29	44			25	2	100
Sapele	147	177			2	4	330
Udu	61	91		4	24		390
Ughelli North	11	251	6	98	24		390
Ughelli South	24	167	9	59	60		150
Ukwuani	32	54		4	60		150
Uvwie	221	28	12	47		12	320
Warri North		129			1		130
Warri South	339	77	7	63	36	3	525
Warri South-West	4			4	40	2	50
TOTAL	1563 (26.8%)	2597 (44.5 %)	61 (1.3%)	656 (11.0 %)	882 (15.0%)	79 (1.4%)	5838

Source: Delta State Household Survey, 2006

About 26.8% (1,563) of the sample population used water closet (WC), 44.5% (2,597) used pit latrine, 1.3% (61) used toilet facility in a different house, 11.0% (656) used public toilet, 15.0% or (882) used nearby bush/beach/field, and 1.4% (79) used other types of toilet facility. Thus, 37.8% of the sampled population

used satisfactory methods of toilet facility, which is the water closet and public toilet.

According to Onokerhoraye and Omuta (2005), the use of flush toilets was restricted to small proportions of households in most urban centres in Nigeria including Delta State in the 1980s. However, there were exceptions in the old Anambra, Imo, Kano, Lagos and Ondo States. Pit toilets were the dominant modes of human waste disposal in most of the urban areas. Moreover, toilets were largely shared in most of the urban centres. The few exceptions to this were in urban centres in the Northern States, where perhaps, for reasons of religion and culture, there was a high degree of exclusive use of toilets. This inadequacy of solid waste disposal systems constitutes major health and aesthetic problems for urban housing.

Finally, the percentage distribution of Households by LGA and type of fuel for cooking (Table 5.9) was also examined.

Table 5.9: Percentage Distribution of Households by LGA and Type of Fuel for Lighting

LGA	Lighting Fuel					
	Electricity	Gas	Kerosene	Candle	Solar	Others
Aniocha North	21.1		77.1	1.8		
Aniocha South	17.2		81.9	0.5		0.5
Bomadi	1.33		98.7			
Burutu	3.86		95.9	0.3		
Ethiope East	25	0.4	73.1	1.5		
Ethiope West	40.8		58.2			
Ika North East	59.3	0.4	38.3	0.8		1.2
Ika South	79.6	0.4	18.4	1.6		
Isoko North	42.2	0.4	57.4			
Isoko South	77.1		22.9			
Ndokwa East	25.1	0.5	72.2	2.1		
Ndokwa West	32.8	1.1	49.3	16	1.1	
Okpe	43		55.1	1.9		
Oshimili North	64.8	1.4	27.5	4.9		1.4
Oshimili South	80.2		19.8			
Patani	65		35			
Sapele	95.5		3.9		0.6	
Udu	70.6		27.2	0.6	1.7	
Ughelli North	41.8		58.2			
Ughelli South	42.8	0.3	50.6	4.7	1.6	
Ukwuani	32.7		66.7	0.7		
Uvwie	93.8	0.3	4.7	0.6		0.6
Warri North	76.2		23.8			
Warri South	76.2	0.2	21.1	2.3	0.2	
Warri South-West		2	96	2		
TOTAL	51.8	0.2	46	1.7	0.2	0.1

Source: Delta State Household Survey, 2006

About 51.8% of the sampled population use public electricity as a source of fuel for lighting, while 48.2% of the households do not have access to public power supply. In addition, 0.2% use gas and 46.0% use kerosene. However, 1.7% use candle, 0.2% solar power, and 0.1% use other sources of fuel for lighting.

It has been noted that the most widespread and ubiquitous of these facilities is electricity. Over 83% of all houses in the urban centres in Nigeria in the 1980s were connected. However,

the proportions of houses so connected were as low as 60-70% in Borno, Gongola, and Rivers States.

Policy Implications for Sustainable Development

The enormity of Nigeria's housing problem, Delta State inclusive, calls for greater state priority of the sector. There is the need for government to intervene in a major way to reduce the present magnitude of shortage in the housing supply as well as upgrade and improve on the existing low quality housing inhabited by the majority of the population. However, there is also the need for Delta State government to take greater social responsibility for providing housing through some form of social housing.

Specifically, the strategies and programmes that could be used to address the situation include:

1. Direct construction of public units. This involves targeting purely low income households on low profit margin rental basis, with a view to widening tenure choice for the majority. poor. Rents accruing from the programme should be ploughed back into expansion on a revolving basis.
2. Urban development related strategies. This involves the use of site-and-services as a tool of normal urban expansion as well as systematic programme of rehabilitation and facilities upgrading in existing slums, shanty settlements and low income areas in every urban slum. These will ensure the quality of future urban development and the improvement of existing low quality residential areas. In addition, Housing rehabilitation loans should be made available for individuals to improve on in-house facilities.
3. Land and Financial reforms are foundational and catalytic for housing delivery. The Land Use Act should be reviewed to facilitate easier access to land. Similarly the financial provisions of the 1991 National Housing Policy should be reviewed to ensure greater mobilization of

resources for the housing sector. Mortgage loans should be made easily accessible.

Conclusion

The majority (99%) of households in Delta State live in housing units. Again, 44% of the sampled households live in room/let in house. Furthermore, most houses in Delta State (82.4%) have concrete/cement floors. However, a majority of the households (82.8%) use corrugated/metal/zinc sheets for roofing. Furthermore, wells serve as the major sources (50%) of domestic water supply in Delta State, while electricity is the main source (51.8%) of fuel for lighting.

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