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Social Structures, Local Economic Development and Environmental Quality in Deprived Communities: The Case of the Kpirikpiri Community in South-East Nigeria

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Abstract. Despite years of International Aid, as recently as late 2010, Africa was seeking a 20% increase in funding for its poor countries. In 2002, Nigeria's Ebonyi State became part of a Community Urban Development Project and in 2005 joined the Community-based Poverty Reduction Project, both funded by the World Bank. Ebonyi focussed all its aid on three communities in its capital Abakiliki. They were chosen because they exhibited the lowest level of social, political and economic status, and the highest levels of physical decay; following a survey in 2001. One of the three communities, Kpirikpiri, was surveyed again in 2010 as part of this research, and in 2011 a sample of its residents engaged in focus groups to determine how their lives had improved as a result of this funding. It was shocking to discover that the community still suffered from all five housing deprivations used by UN-Habitat to define slum conditions. Yet, the potential of these residents is high. The challenge is how to unlock their potential and establish community organisations that can apply for their own funding; develop a local economy through activities such as home-based enterprises; negotiate with landlords; and start to improve their environmental conditions.

Keywords: Developing countries, Economic development, Environment, Participation

INTRODUCTION

Since 1968, when the World Bank turned its attention to concentrating on the needs of people in the developing world; arguments about effectiveness, accountability and even terminology have continued unabated. In the poorest countries, the strategy has been based on poverty reduction. As part of Sub-Saharan Africa, Nigeria belongs to this group and has received substantial aid. Yet, as recently as late 2010, Africa was seeking a 20% increase in funding for its poor communities (World Bank, 2010). The purpose of this paper is to investigate the social, economic and environmental conditions of one of these communities as a representation of the general picture, following an extensive programme of World Bank funding. The present circumstances are examined to appraise residents' living conditions at the end of this period of international aid.

THEORETICAL FRAMEWORK: URBAN DEPRIVATION

Deprivation can be defined as a state of observable and demonstrable disadvantage in a local community (Townsend, 1987). While housing deprivation has attracted attention, study of other forms of deprivation has been less evident (Olotuah, 2010). This is primarily due to the readily observable nature of housing. Amongst others, Rakodi and Lloyd-Jones (2006) suggest a range of issues related to vulnerability in poor urban areas. These include lack of social networks, groups and trust, and exclusion from decision-making; low levels of skills, knowledge, and access to work - in a context of no financial reserves from savings, credits or pensions; and inadequate shelter, water and sanitation. It is the multiple forms of deprivation that need to be addressed (Wong, 2006). These aspects of vulnerability can be analysed through social, economic and environmental perspectives; which are perceived as the three pillars of sustainable development.

Social Perspective on Urban Deprivation

Social deficiencies such as lack of social networks, active formal groupings and trust within the community and to the outside world, are major inhibitions to community development. One significant issue for deprived communities, is their exclusion from wider society (Nger and Riley, 2007). Enyedi (2002) notes that a healthy social environment is one characterised by reduced social inequality. People in socially cohesive groups epitomise place attachment, and are more strongly motivated to contribute to the groups' welfare, with a view to advancing their objectives and participating in community activities (Cartwright, 1968). A concept of sustainable livelihoods could be introduced to offer a more coherent and integrated way of addressing poverty and enhance poor people's ability to generate socially sustainable lifestyles (Krantz, 2001). This approach relies on social capital, which is the resource of skills, talents and abilities within a community that can be used to build partnerships and develop community enterprises (Skinner, 1997). It is argued that social capital can be formal and informal (Pichler and Wallace, 2007). Formal social capital involves joining civic organisations and participating in public life (Putnam, 1994, 1995, 2000); whereas informal social capital is created through family and friendships (Coleman, 1988) and has great social benefit, including trusting others with valuables (Bourdieu, 1986). According to Mitra (2008) an absence of formal social capital means that slum communities have a hugely restricted access to livelihood. Thus community capacity is needed to acquire and use resources (Iscoe, 1974). Littlejohns and Thompson (2001) point out that for a community to evolve, it needs to implement and sustain actions to exercise control over its social environment. This involves training, organisational and personal development, and resource provision - arranged to reflect the principles of empowerment and equality (Skinner, 1997) with a continued emphasis on education (Howe and Cleary, 2001). The United Nations (2002) states that an appropriate poverty strategy should provide all persons with the opportunity to earn a sustainable livelihood, by implementing policies that focus on capacity-building to create human (social) capital. Thus the notion of sustainable livelihoods is dependent on social capital, which itself depends on community capacity building. The cycle is completed by sustainable livelihoods contributing to community capacity building (see Figure 1). It is clear that these three virtues would be advantageous to a deprived community.

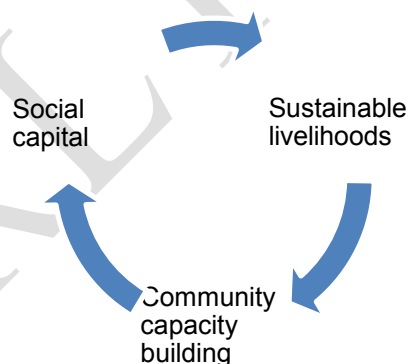


Figure 1: A Virtuous Cycle

Economic Perspective on Urban Deprivation

According to Osinubi (2003), poverty is the inability to generate adequate income, find a stable job, own property or maintain healthy conditions. To be poor means to have limited access to the basic necessities of life such as food, clothing, and decent shelter; to be unable to meet economic obligations; to lack skills and engagement with gainful employment (Mitra, 2008); to have few or no economic assets; and sometimes to lack self-esteem. Unemployment is the most visible symptom of deficiencies in the local economy (Morison, 1987). It results in a substantial waste of manpower resources, and generates welfare loss in terms of lower output; thereby leading to lower income and reduced well-being (Akinboyo, 1987; Raheem, 1993). In the context of deprived communities, formal employment is characterised by large scale industrial branch plants, with national or international management structures; and difficulty of

access. Previous research has shown that most employed slum dwellers work in the informal sector (eg. Nwaka, 2005). Informal economic activities can be defined in three categories (Williams and Windebank, 2002; OECD, 2002) - *paid informal work* – hidden and unregistered by the state but legal in all other senses; *illegal economic activities* – productive activities which generate goods and services forbidden by law or that are unlawful when carried out by unauthorised producers; and *unpaid informal work* – those composed of self-provisioning activities and reciprocal support. The informal sector is characterised by ease of entry, reliance on indigenous resources, family ownership of enterprises and small scales of operation. It is essentially, a traditional subsistence sector which provides basic services within cities (Lejour and Tang, 1999). Although a large proportion of the urban workforce in developing countries is employed in the informal sector, it is largely ignored, rarely supported, unregulated and actively discouraged by government (Gugler, 1982).

Any enterprise that takes place in a domestic environment and not in designated commercial or industrial premises is referred to as a home-based enterprise (HBE) (Tipple, 2005). The poor often resort to HBEs to sustain their livelihoods (Gough et al., 2003). Such businesses have been recognised as important features in most low-income communities (Rogerson, 1991, Gough and Kellett, 2001, UN-Habitat, 2003a, Tipple, 2006). Much as HBEs are important, there are some concerns raised in the literature. They may pose safety threats, noise and other forms of environmental pollution (Matsebe, 2009). There are also space related problems (Kellett and Tipple, 2000), as well as the possibility of workers being exploited through inadequate wages and long working hours (Tipple, 1993). Nevertheless, a study by Finmark Trust (2006) confirmed that most successful enterprises were incubated as home-based enterprises. This implies that they could metamorphose into the formal economy if allowed to develop.

Environmental Perspective on Urban Deprivation

Terminology has become increasingly important in the study of sensitive issues. Thus there is concern over the use of the word slum, as it can invite clearance programmes. The Federal Government of Nigeria certainly tried that strategy in the 1990s (Agbola and Jinadu, 1997). Some academics prefer the term informal settlements. However, this really means unplanned land occupation (Huchzermeyer and Karam, 2006), and offers no guidance as to the quality of the environment. In the case of Nigeria, official clearance has been left back in the 20th Century, and slum has become a useful notion, especially as it is clearly defined by a UN-Habitat report (2007) under five shelter deprivations as follows:

A group of individuals living under the same roof in an urban area who lack one or more of the following:

1. *Durable housing of a permanent nature that protects against extreme climate conditions*
2. *Sufficient living space which means not more than three people sharing the same room*
3. *Easy access to safe water in sufficient amounts at an affordable price*
4. *Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people*
5. *Security of tenure that prevents forced evictions*

The report continues that Sub-Saharan Africa is the most deprived region in the world, with over 80% of the region's homes having one or two shelter deprivations. Researchers in Sub-Saharan Africa, including Abiodun and Boateng (1987) and Akinyemi and Birgit (2009) agree with UN-Habitat's shelter deprivations. However, they also point out that assessment of environmental deprivation needs to be set within a socio-economic context.

The World Bank Assisted Programme

The World Bank (2009) states that Nigeria is the most populous country in Sub-Saharan Africa; and by the turn of the 21st Century, poverty in the country had become quite alarming. It reflects that in the past, Government programmes had poverty alleviation as one of the objectives, but these programmes have

had little impact on the poor. They were imposed from above with little commitment or involvement by the communities they were ostensibly attempting to help. Regardless of this statement, in the 21st Century, World Bank sponsored projects credited The Federal Government of Nigeria, which in turn delegated to the state governments. In Ebonyi State, it was decided to focus the aid on the poorest parts of Abakaliki, the state capital. Following a physical and socio-economic survey of eight communities by Diyokes (2001), the three communities of Kpirikpiri, Abakpa and Azuiyokwu were shown to exhibit the lowest level of social, political and economic status, as well as the highest levels of physical decay, and were therefore chosen. Ebonyi state was admitted to the Community-based Poverty Reduction Project in May 2005; as part of a US\$85 million credit to the Federal Government of Nigeria (World Bank, 2009). According to Omu and Okunmadewa (2006), the objective was to improve access of the poor to social and economic infrastructure, and increase the availability and management of development resources at the community level. From 2002, the state had already become part of the US\$110 Nigeria Community Urban Development Project (World Bank, 2002), aimed at improving the physical environment. In practice, these two projects were conflated into one programme. The intention was to use infrastructure improvements as a means of engendering positive socio-economic and environmental impacts (Diyokes, 2001). Table 1 shows proposed actions and outputs from this programme, and Figure 2 shows where the environmental improvements are located. A number of roads have been re-surfaced and a small quantity of street lamps added; and four boreholes and one bus shelter have also been provided.

Proposed Actions	Outputs
1. Upgrade existing earth roads with bituminous surfaced roads	65% of roads re-surfaced
2. Provide Trunk Drainage	not done
3. Provide Solid Waste Management Facilities	not done
4. Extend water supply pipelines	four new public boreholes
5. Build new school blocks	not done
6. Build new Recreational Facilities	not done
7. Refurbish Clinic	not done
8. Refurbish Market	original market destroyed by fire – relocated to northern boundary, in use but not completed
9. Provide Street Lighting	installed along one street
10. Provide Bus Shelters	one erected
(Diyokes, 2001)	

Table 1: World Bank Assisted Community Urban Development Project (2002 – 2011) and Community-based Poverty Reduction Project (2005 – 2009) objectives and outputs

Iweka and Adebayo (2010) report that in Lagos, nine major slum communities are presently benefiting from a massive World Bank assisted seven-year upgrading exercise that commenced in 2006. However, there is perplexity because emphasis is apparently on infrastructure, and particularly on roads. An investigation was needed as to whether the people of Kpirikpiri have a similar perplexity.

Study Area

Almost ten years after the Diyokes' (2001) survey, another survey of Kpirikpiri was undertaken as part of this research. The study area is synonymous with the World Bank Programme area and covers 48 hectares (see Figure 2). The community comprises 1420 households with a total of just less than 10000 people.

Methodology

Survey 2010

A social-economic-environmental questionnaire was conducted with 10% of households. This sample offers a confidence level of 95% with a sampling error of 8% (de Vaus, 2002). Each household was allocated a number on a plan of the neighbourhood and random number tables were used to select the sample. The views of every household member over 16 years of age were recorded. The questions were asked and responses recorded by a team of researchers from Abakaliki. On a number of occasions, it was necessary to translate the issues into Igbo, for full comprehension. In the social-economic-environmental questionnaire, the issues included - household size, space and status; qualifications and skills; involvement in organised groups; trust; employment and income; living in the community – reasons and length of time; cost of living and conditions. The observation schedule was organised to enable the researchers to objectively assess the environmental conditions, about which the residents were expressing their views. They included - construction and quality of buildings; external spaces; streets and rainwater drainage; internal spaces – size, condition, density; water supply and sanitation. The same houses were used for the observation schedule.

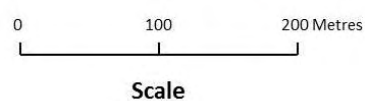
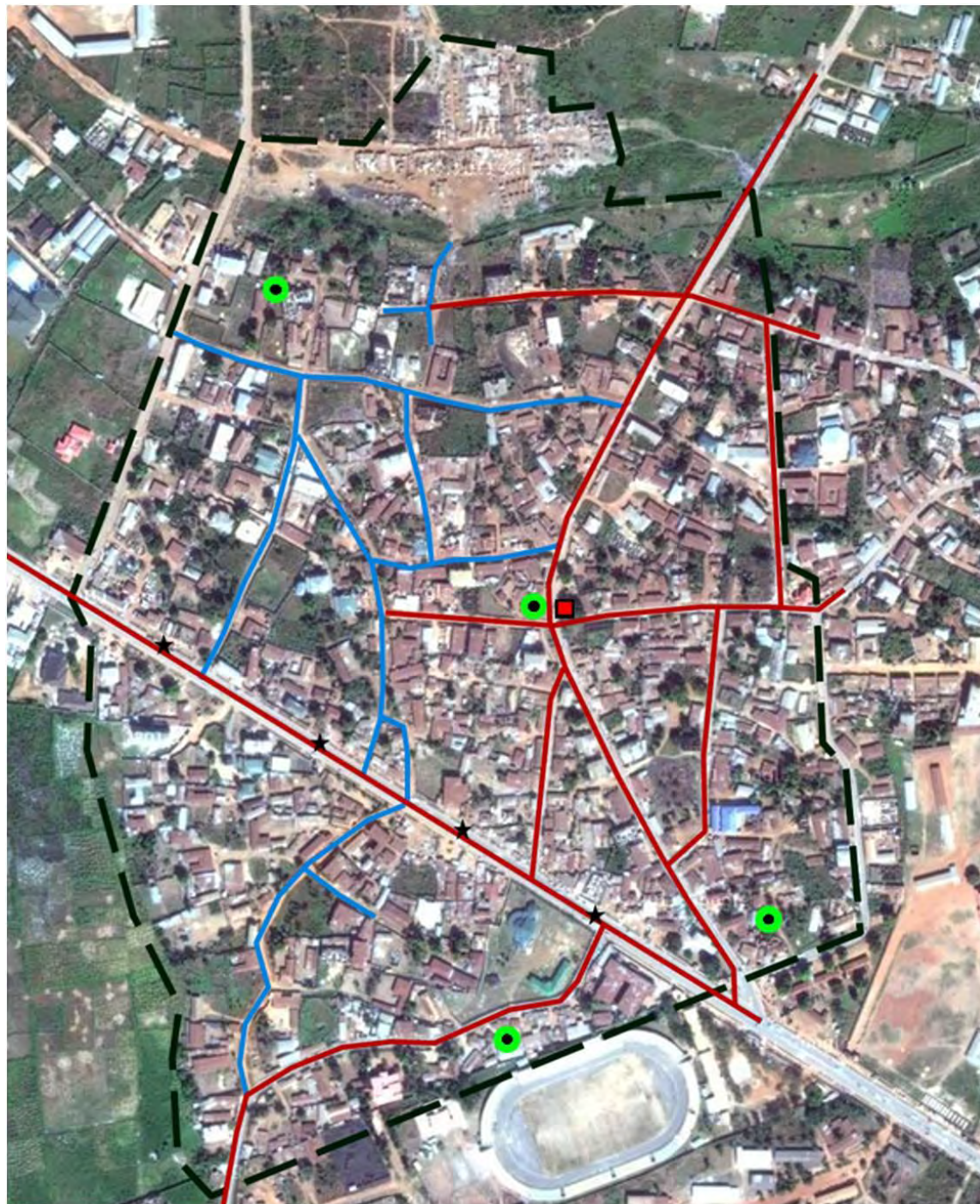


Figure 2: Aerial View of Kpirikpiri showing Surfaced Roads, Street Lamps, Boreholes and Bus Shelter provided by the World Bank Projects

Focus groups 2011

The purpose of the focus groups was to complement the quantitative nature of the household survey with qualitative data on residents' perceptions of current conditions; and to draw out respondents' attitudes, feelings, beliefs, experiences, and especially reactions to the issues raised by the survey results. Following the recommendations of Krueger and King (1998), local volunteers worked alongside the researchers as they have more contacts, are well-known and can engender trust among the people. Participants were sought from social gatherings, ie one place from each of worship, leisure, trading and working, generating four focus groups. Initial discussions identified those willing to take part and established a sufficient spread of parents, single people, young people, men and women, employed and unemployed, landlords and tenants – throughout the groups but not necessarily within each group. In accordance with Goss and Leinbach (1996), each group comprised 10 participants and each session was conducted at the places of social gathering, and lasted one – two hours. The focus groups took place after the household survey to enable reflection on the quantitative results, and to determine which aspects of the household survey would benefit from the qualitative data. The lead field researcher was the facilitator for each group and recorded the outcomes. The results were evaluated against the following analytical framework:

Social Perspective	
Indicators	Criteria
place attachment	higher levels of self-esteem or pride in place, assessed by propensity to live in the community for a relatively long period of time (eg Cartwright, 1968)
social capital	levels of participation in social groups or associations (eg Putnam, 2000)
	levels of trust in civil authorities – police, courts, state government, local government (eg Nger and Riley, 2007)
	levels of trust in other residents with their money and other valuables (eg Bordieu, 1986)
	friendship levels and frequency of residents' meetings with one another in the community (eg Coleman, 1988)

Economic Perspective	
Indicators	Criteria
employment rate	unemployment as the most visible symptom of deficiencies in the local economy (eg Morison, 1987)
skills	qualifications and level of skills acquisition (eg Mitra, 2008)
availability of local enterprises	number of small and medium enterprises, including home-based enterprises (eg Gough et al., 2003)

Environmental Perspective	
Indicators	Description
secure and durable buildings	walls, roofs, and floors built with strong durable materials to provide comfort for the occupants (eg UN-Habitat, 2007)
adequate living space	a habitable room should not be occupied by more than three persons (eg UN-Habitat, 2007)
access to water	adequate supply of clean, accessible and affordable water (eg Abiodun and Boateng, 1987)
access to sanitation	access to hygienic toilets (eg Akinyemi and Birgit, 2009)

security of tenure	preventing forced eviction (eg UN-Habitat, 2007)
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Table 2: Analytical Framework

RESULTS AND ANALYSIS

Social Deprivation

The reasons for living in the neighbourhood clearly show the effects of rural-urban migration, as most people come to Kpirikpiri to seek work that is not available in their villages. As the next most significant reason for living in Kpirikpiri is family, there are clear indications of social ties. Commitment to the place is shown by almost a quarter of residents having lived there for over 16 years, although there seems to have been an influx of people over the last five years (see Table 3 - all the data in Tables 3-9 are taken from the survey). The residents' view is that farming is for subsistence, rather than employment as an income. The focus groups confirmed that consequently, people come to the cities for employment, which is very difficult to find and the recent influx has placed even greater stress on urban resources.

Reasons	%	Time	%
work	41%	over 16 years	24%
family	31%	11 – 15 years	8%
friends	14%	6 – 10 years	13%
grew up there	13%	1 – 5 years	44%
studies	1%	less than 1 year	11%

Table 3: Reasons for living in the Community and Length of time lived there

The survey showed that the community is not cohesive in a formal sense. Residents have low levels of engagement with organised clubs, groups and associations. Only with religion and the church is there a relatively high rate of participation (see Table 4).

Association	%	Association	%
Religion/Church	62%	Hobbies/Social Clubs	17%
		Sports Clubs	17%
		Community Associations	12%
		Trade Unions	11%
		Political Parties	8%
		Health and Welfare Groups	6%

Table 4: Percentage of Residents Engaged with Organised Groups

Lack of trust in authority is also clear, from the police to the courts. Perhaps the lack of trust in the local authority is most disturbing, as it might be supposed that local authority representatives could be the most fruitful route to obtaining practical support (see Table 5).

Authority	%
Courts	36%
State Government	34%
Local Authority	28%
Police	22%

Table 5: Percentage of Residents who Trust Authority

Nevertheless, it should not be inferred from the lack of engagement with organised associations and the local authority that the people living in this neighbourhood do not form a recognisable community. 91% of

those surveyed, stated that they have friends in the neighbourhood, and Table 6 shows that most meet on a regular basis. The survey also shows that 60% of residents trust other residents with their money and valuables.

Frequency	%
on most days	47%
weekly	39%
monthly	13%
quarterly	1%

Table 6: Percentage of Residents Meeting with Friends

Economic Deprivation

According to Eze (2010), over 90% of household incomes range from N7500 (£31) to N10000 (£41). Okosun, Siwar, Hadi and Nor (2010) state that N45000 (£185) per month is needed to satisfy real family living costs. Thus, the difficulties that the residents are experiencing in affording necessities, are at least in part due to very low incomes. In addition, it needs to be recognised that much employment is in the informal sector, which is unregulated, irregular work for little pay. It is also insecure and prone to legal action. Therefore, residents are unwilling to declare their involvement with informal employment. Table 7 shows the initial reaction of residents, when asked about their employment status; and a more considered view after the researchers had gained their confidence.

status	initial	considered
Formal Employment	32%	32%
Informal Employment	19%	51%
Unemployed	46%	14%
Retired	2%	2%
Students	1%	1%

Table 7: Percentages of Residents' Employment Status

In either case, unemployment ie those not in formal employment, retired and students, comprises 65% of the workforce. The national unemployment rate is 23.9% (The National Bureau of Statistics, 2011). So, in Kpirikpiri, unemployment is approaching three times the national average. This is a significant factor in low household incomes. Nevertheless, Table 8 shows the skills that are available within the community (33% of which are at professional level) together with the employment profile.

Skills Available		Employment	
Teaching	14%	Education	5%
Professions - humanities	10%	Commerce	8%
- engineering	9%	Manufacturing	4%
Building Trades	7%	Construction	8% ₂
Technicians	7%	IT/auto/electric	0%
Sports	6%	Sports	3%
Trading	6%	Retail	9% ₂
Furniture Making	6%	Furniture Making	0%
Hair Dressing	6%	Hair and Beauty	5%
Entertainment	6%	Entertainment	5%
Catering	6%	Food, drink, hotels	7% ₂
Clothes Production	6%	Clothing Production	7% ₂
Unskilled	10%	Transportation)	4%
		Laundry)	4%
		Car wash / street vending)	14%
		Unemployed	14%

		Retired Students	2% 1%
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Table 8: Percentage of Residents with Skills Available and Employment Profile

The employment profile demonstrates that rather than a skills shortage, the following skills are noticeably underused:

Teaching 9%

IT/auto/electrical technicians 7%

Furniture Making 6%

Engineering professionals 5%

Sports 3%

There is often an assertion that slum-dwellers are in that situation because they are lack skills and are uneducated. It may be surprising to discover that the residents of Kpirikpiri are actually quite well qualified, as shown in Table 9.

Qualification	%
Post Graduate Qualification	6%
University Degree	21%
Higher National Diploma	0%
Ordinary National Diploma	6%
Senior Secondary School Certificate	48%
Primary Secondary School Certificate	1%
None	18%

Table 9: Percentage of Residents with and without Qualifications

This profile compares well with developed western countries. For instance, in England and Wales, it is not a dissimilar picture (National Statistics 2001).

Note 1: Mr Ernest Eze is leader of a team five who represent Kpirikpiri in meetings with the World Bank office to

discuss the improvement programme. He is also the councillor for the Kpirikpiri ward. Each ward has

one seat on the legislative council.

Note 2: where employment exceeds skills available, it indicates that unskilled people are also involved in that

employment

Environmental Deprivation

The National Building Code for Nigeria (Federal Republic of Nigeria, 2006) sets the standards for construction, but is not an easy document to interpret. It was introduced primarily as a result of multi-storey building collapses; and therefore focuses on structural stability. The code has received substantial criticism for the issues that it does not address and for relying on British Standards which have limited relevance to this location (eg Agba, 2011; Iweka and Adebayo, 2010; Mu'azu, 2011). The Code has no provisions for - protection against extreme climate, sufficient living space, water provision or sanitation (Federal Republic of Nigeria, 2006). Section H-3 refers to Dwellings and Lodging Houses. There are no specific standards for construction, although there are references to British Standards. The process relies on submission of compliance forms, which are specification style statements about the choice of material, size and adequacy; with justification for selection. The regulations about existing buildings are essentially that any additional construction should not be lower quality than the existing. It is clear from the focus groups that the houses in Kpirikpiri have not been through this process. This 2010 survey revealed the following in relation to UN-Habitat's five deprivations:

House construction

The buildings are nearly all single storey. The floors are natural earth covered in a sand and cement screed. Approximately 50% of walls are dry clay blocks with wet clay beds, sand and cement rendered on both sides (see Figure 3). The remaining walls comprise reclaimed timber boards arranged in a haphazard fashion (see Figure 4). The roof structure in all houses is entirely timber, covered with corrugated single skin galvanised steel sheets.



Figure 3: House with Rendered Clay Block Walls



Figure 4: Houses with Reclaimed Timber Boards as Walls

The windows are apertures within the walls, which are covered with boards at night and when the property is unoccupied, which limits ventilation (see Figure 5).



Figure 5: House with Timber Boards over Openings

There is probably not a definitive answer about compliance with the Building Code, but the impression is that the floors and clay block walls would comply, but timber walls and all roof coverings would not comply. In terms of the UN-Habitat definition *ie durable housing of a permanent nature that protects against extreme climate conditions* – the 50% of houses with clay block walls would appear to be durable and permanent. However, none of the roof coverings protect against solar radiation and therefore do not protect the inhabitants from extreme weather conditions. The major problem with single skin metal roofs in warm weather is that they absorb and retain solar radiation. This translates directly into high building envelope heat loads and significant temperature build-up in the accommodation (McGee and Clarke, 2010). The two world standard material means of treatment to metal sheet roofing are:

- 1) Application of reflective coatings to the outside surface of the sheets
- 2) Introduction of insulation. This is least effective on the inside, as the metal surface has already been heated by the sun. There are products in which either the insulation is adhered to the external surface or as a sandwich filling between two steel sheets.

The most effective solution is the combination of the two methods with sandwich panel construction incorporating a reflective coating to the outside surface (ICC, 2012). Figures 3 and 4 show the rusted and patched nature of the roofs in Kpirikpiri. The condition of these roofs preclude retrofit treatments.

Living space

In relation to sufficient living space, calculation of the household data showed that an average of 3.3 people share the same room. This exceeds the criterion that sufficient living space means that no more than 3 people share the same room.

Water

According to UN-Habitat (2003), a minimum of 20 litres of water is required every day per person to meet basic needs. 37% of people have access to water at home, but it is only available for four hours every two weeks for them to fill a barrel containing 160 litres which will therefore last for 8 person days. When this supply has been used, they will need to go to a borehole. Household size is an issue, but partial home supply is actually equivalent to 5% of the community receiving all their water needs at home. 42% of people are 2-5 minutes walk from a privately-owned borehole. Yet, waiting time at a borehole is 20-30 minutes during the rainy season and 30-60 minutes during the dry season. Each person can carry his/her daily need ie one 20 litre container. Setting aside the notion that some people may not go to the borehole, the best case is that $37\% - 5\% + 42\% = 74\%$ of people spend 20 – 60 minutes a day collecting water. The remaining 21% spend longer as they have further to walk. 20 litres of water costs an average of N10 at the private boreholes, and the average household size from the survey was found to be 6.6 people. Therefore the equivalent of 95% of households spend on average $N10 \times 30 \times 6.6 = N1980$ (£8) per month on water. As previously established, over 90% of monthly household incomes range from N7500 (£31) to N10000 (£41). Therefore water costs 20% - 25% of household income. To be affordable, it should represent less than 10% of household income (UN-Habitat, 2003).

Sanitation

There are three types of toilet – indoor flush, outdoor pour-flush and pit latrines. Just 39% of households have indoor flush toilets but due to provision and household size, they are only available to 25% of the people. There is only a moderate problem with the number of people sharing a toilet. For example five persons sharing a toilet is not unreasonable; and even six-nine people is manageable. However, the real context is that 75% of the community have no sanitary toilet facilities. There is also a risk of groundwater contamination with both types of latrine. Sugden (2006) does not specify minimum dimensions between latrine and borehole (Figure 6 dimension X), but states that of more concern is human contaminants percolating downwards from latrines into the groundwater (Figure 6 dimension Y).

Ibe and Okpelenye (2005) refer to the World Health Organisation standard that latrine and borehole should be no closer than 30m, but conclude that the movement of organisms from latrines into watercourses is almost impossible to model and therefore the prospect should be avoided. The South African Building Regulations follow this principle by stating that all sewage should be removed to prevent it coming in contact with the ground (Republic of South Africa, 2011) and the United Nations Environmental Programme makes it clear that latrines should not be used where groundwater sources are used for drinking water (UNEP, 2000). This pollution has already discounted the wells as sources of safe water supply. Hydro-chemical analyses show that groundwater samples have a comparatively high content of ions and dissolved particles, which are injurious to health. In addition, the wells are shallow and uncovered so the water is unsafe for drinking and cooking (Aghamelu et al. 2011). As shown above, the equivalent of 95% of people in Kpirikpiri obtain their water from boreholes, so maintaining uncontaminated ground is essential.

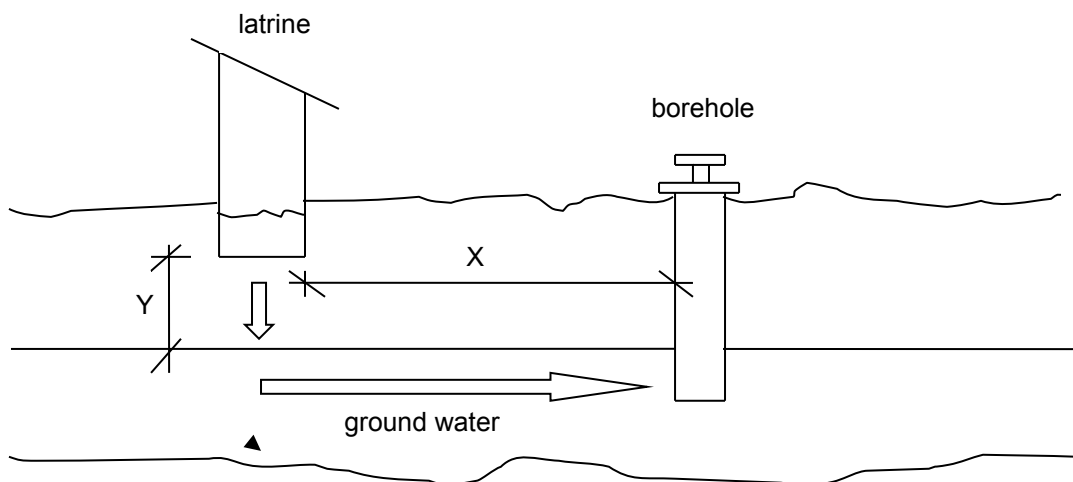


Figure 6: Contaminated Water Diagram (adapted from Sugden, 2006)

Tenure

20% of the community are squatters with no security of tenure. 70% of the community are tenants who have security of tenure, provided they continue to pay rent. It has already been established that over 90% of household incomes range from N7500 (£31) to N10000 (£41). Average rents are N2000 (£8) per month per room. The rent for multiples of rooms is pro-rata. So, 37% of households pay N2000, 38% pay N4000 and 15% pay N6000. The remaining 10% are 4 rooms and above, and are occupied by households within the top 10% of household income. The most optimistic interpretation is that 37% of households spend 20% - 26%, 38% of households spend 40% - 50%, and 15% spend 60% of their income on rent. UN-Habitat (2003) states that no more than 20%-30% of household income should be spent on rent. As 70% of the community are tenants, excluding the top 10% of household incomes, means that 63% of the population (90% \times 70%) are spending more than 20% of their income on rent. Thus they are at risk from forced eviction. When added to the 20% of the population who are squatters, it is shown that actually 83% of the community are in jeopardy. The survey discovered that there are no tenancy agreements, which exacerbates the danger.

The following table is a summary of the community's positive and negative attributes:

Positives: <ul style="list-style-type: none"> established residential community regular meetings between friends trust among the community good relationship with the church availability of skills and abilities high level of educational achievement among residents 	Negatives: <ul style="list-style-type: none"> lack of engagement with organised groups lack of trust in authority low incomes - low employment underdeveloped local economy poor quality of house construction overcrowding lack of access to affordable safe water inadequate sanitation poor landlord-tenant relationships
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Table 10: Summary

DISCUSSION

These data demonstrate that in Kpirikpiri, there are shelter deprivation issues in all five categories. Although the survey was only undertaken in Kpirikpiri, there is no reason to assume that similar conditions do not also prevail in Abakpa and Azuiyokwu. These three communities have represented Ebonyi State's priority in poverty reduction and community urban development since 2001. The 21st Century World Bank assisted programme has expended huge budgets, and yet poverty and squalor appear undiminished. The residents assert that the roads are of little benefit to them, and mainly serve those passing through the neighbourhood. Indeed, the re-surfacing has adversely affected the drainage pattern and in some cases damaged the existing small quantity of piped water supply. The boreholes provide free water but the existence of only four of them in the whole community is grossly inadequate. The residents state that they are always crowded and even at 2am, long queues can be seen. They did not comment on the bus shelter. Mitlin and Satterthwaite (2007) question whether the existing Government-based structure for distributing international aid can ever be effective. They state that only a small proportion of funding actually addresses the deprivations that cause or contribute to poverty; and official development assistance agencies rarely work directly with poor groups. Therefore international aid agencies can only be as effective as the government that they fund. The lack of local ownership in particular, raises doubts about the ability of partner government structures to reduce poverty. Mitlin and Satterthwaite (2007) also point to examples of the effectiveness of funding when it goes directly to grassroots organisations formed by the urban poor. Ever since the 1992 Earth Summit in Rio de Janeiro, the mantra has been that Agenda 21 rests on the three conceptual pillars of social sustainability and economic sustainability, as well as environmental sustainability (Kahn, 1995) and number of authors have explored these concepts (eg Basiago, 1998; Giddings, Hopwood and O'Brien, 2002). Nevertheless, some academics are still recommending the purely environmental solution of house construction as the means of eradicating poverty (Aribigbola, 2008, Olotuah, 2010). The problems and solutions are deeper than merely the visual environment, which tends to portray the effect rather than the cause. It is for these reasons that the existing social and economic conditions needed examination, and proposals are required for social, economic and environmental provisions.

A Strategy for Kpirikpiri

Social

In accordance with the virtuous cycle, sustainable livelihoods result from social capital, which in turn is derived from community capacity building. The residents have a high level of educational achievement and have skills and abilities, but they lack the organisation to develop the community. Their lack of engagement with organised groups may be symptomatic of mistrust in authority, with the exception of the church. This could be a crucial position, as only the church has the status to negotiate with the local authority as well as mediate between landlords and tenants; as well as the resources with which to pump-prime the community capacity building process among the residents, through programmes such as Church Grants for Africa. It also has a communication network for two-way community exchanges with residents on progress. While community organisation can be developed under the auspices of the church – the long-term objective is that it should be independent, and able to apply for its own funding. There is a definite need for honesty, transparency and accountability, especially where funding is concerned but this will be helped by the established residential community that exhibits trust between its members; and the strong network of friends that meets regularly. The community may actually be more capable of monitoring itself than to try to ensure that the authorities are accountable.

Economic

The low level of employment and corresponding low incomes are major barriers to community development. There is also an underdeveloped local economy. In these circumstances, the poor often establish home-based enterprises to obtain income in conditions of high unemployment (Gough et al., 2003). These businesses are recognised as very important to low-income communities (Tipple, 2006a,

2006b, Gough and Kellett, 2001, Rogerson, 1991, UN-Habitat, 2003). Studies in Lagos and Kano show that 61% and 64% respectively, of people are involved in some form of home-based enterprise, either full-time or part-time. In Sub-Saharan Africa generally, this can rise to as high as 77% (Bose, 1990, Chen et al. 1999). The Finmark Trust (2006) states that activities can include – hair dressers, automobile repairs, traditional healers, welding, clothes making and numerous other occupations. They do have a downside of being unregulated and therefore potentially dangerous to health and well-being. In Kpirikpiri, only 20% of respondents are engaged in home-based enterprises of which 86% are female and 14% are male. This appears to be a very low involvement. According to the residents, landlords have a perception that enterprises would include harmful processes which would have a detrimental effect on their properties; and therefore they prevent tenants from becoming involved. Yet, Tipple (2006a) points out that in their study most enterprises involved relatively benign retail, service and production activities. There certainly appears to be scope for formal agreements with the landlords over acceptable activities; as well as confirmation that landlords will not raise the rents of those involved. Through the church, the community will aim to establish a formal relationship with landlords. This would enable proper tenancy agreements to be established in which terms and conditions, rent levels and acceptable home-based enterprises will be established.

Environmental

Improvements to the environment will be at a high cost, not insignificant risk and a long term enterprise. While environmental improvements should not be attempted until the social and economic structures are in place, nevertheless residents will not be assured that their neighbourhood is improving until there is physical evidence. Environmental improvements also fall into two categories – health and comfort. Sanitation and access to affordable safe water are part of the first category, which should be subject to priority action through health funds. Both involve capital and revenue expenditure, for which the latter in particular requires community-based organisation. The capital expenditure for sanitation involves installation of flush toilets, connected to drainage pipes and then to accessible septic tanks serving groups of properties. The revenue expenditure needs to ensure that the tanks are emptied regularly, and that there is a programme of maintenance for the infrastructure. The water supply should be dis-associated with private ownership. There are numerous projects around the world that show how subterranean water can be pumped through pipes to metered supply adjacent to, or within homes. The supply should be available at affordable costs, with the income used for maintenance. The poor quality of house construction and overcrowding are primarily related to rent levels. Thus, they will be part of an evolving socio-economic relationship that delivers a more gradual and incremental improvement.

CONCLUSIONS

As an example of a deprived community in Nigeria, and for that matter Sub-Saharan Africa, the study of Kpirikpiri has shown that conditions have not significantly improved over the last ten years despite considerable World Bank funding. The choice of limited infrastructure upgrading has had little positive effect on the residents' lives. Moreover, many of them were unaware that it was happening. There still seems to be a lack of understanding in funded projects that environmental improvements will have little value unless social structures and economic development are already established. The low level of trust in authority has undoubtedly hampered engagement by the residents with organised groups, although trust within the community and informal networks of friends are well-established. Together with a highly qualified population possessing a notable skill base, these aspects indicate strong potential for the establishment of social capital through community capacity building. The good relationship between community and church indicates possibilities for the church to take a lead in creating formal community organisation, pump-primed by its grants scheme. Social organisation is the initial objective but needs to be closely followed by economic development. The church is probably the only existing mechanism with capability for negotiation with local authority and landlords. This is due to its unrivalled status in Nigerian society. It has been established that home-based enterprises are one of the most successful ways of developing a local economy, and therefore provisions need to be negotiated with landlords. The

environmental priorities are related to health. Sanitation that does not contaminate the ground water supply, and access to safe and affordable water are urgently required to safeguard the health of residents, and as a physical demonstration that community-based organisation can be effective. Although the quality of houses is poor and overcrowding evident – these issues will need to be part of a longer term strategy of socio-economic development. Thus all stakeholders have a role in proactive strategies. The World Bank could consider a funding stream that does not rely on cascading through tiers of government. It could introduce more specific and targeted small sums directly to community groups – underwritten by the Local Authority. The emphasis of external agencies on capital funding highlights the neglect of revenue funding, eg for rubbish collection and maintenance of the proposed sanitation infrastructure. The State Government could be responsible for the establishment of a public sector water and drainage company, providing affordable, safe, piped water – with the proceeds subsidised to ensure maintenance of the systems. Members of the community could be trained and employed in this maintenance. The Local Authority has a role in community development, and could work with the church on capacity-building that would lead to the community applying for its own grass-roots funding; as well as development of the local economy by negotiating for home-based enterprises with landlords. The potential of the residents is high. The challenge is how to unlock this potential and establish community organisations that can apply for their own funding, develop a local economy, negotiate with landlords, and start to improve their environmental conditions.

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