

WASTE MANAGEMENT and the Environment VI



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Waste management can be problematic. Especially with the emphasis in many countries now being on sustainability, there is a great need for more research on disposal methods. While we have found ways to reduce the volume of waste that needs to be disposed, questions remain about the environmental and safety aspects of certain recycled materials and the by-products of waste management activities, current technology improvements, and regulatory and monitoring problems.

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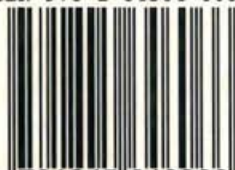


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Traditional food markets, power relations and waste management: a qualitative study

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Abstract

The rapid urbanization of Sub-Saharan Africa from a purely agrarian society to a city based one is an interesting phenomenon to study. However, recent studies have shown that there is a lack of understanding of socio-cultural factors and subtle power relations that brought about these transformations, especially in developing society. Thus, the paper reports a qualitative study in which interviews were conducted and sizeable numbers of open ended questionnaires were administered and analysed based on the Actor Network Theory. The study examines the often overlooked factors that have impacted on the growth of the built environment, by taking a closer look at the urban centre in relation to the main food market called Oja Oba located in the centre of the city of Akure, Nigeria. During the course of the field research, respondents observed that the general appearance of the city, urban lifestyle and city liveability is directly impacted by the issue of food waste, waste generation and waste disposal. This paper concludes that in the drive towards a sustainable city in the developing world and effective waste management there is need to understand the layers of underlying socio-cultural issues that prompted these changes which are subtle and sometime quite sudden with intended and unintended consequences.

Keywords: anthropology, sustainable development, globalization, social institutions, food market, urbanization.



The growth of the Yoruba towns in south west Nigeria in the early 1950's to the oil boom years of 1970 brings about rapid urbanization of its administrative capitals. Shortly after the oil boom came a period of stagnation in physical development and eventual decline or deterioration of both housing quality and the surrounding environment. Travelling through some of the major cities in Nigeria will reveal ample characteristics of blighted urban centres. These urban centres shows symptoms of urban decay such as blocked drainages, bad roads, lack of portable water, inadequate and epileptic power supply derelict and shanty houses and underdeveloped housing environments of the cities (see figure 3).

It has also been suggested that the process of shaping a city (i.e. urbanization) may be due to two principal factors; namely the historical and the political processes [10]. It is evident that rapid urbanization in many African cities such as Akure (the study area) took place in the absence of industrialization. This is contrary to the widely accepted theory on urbanization that strongly linked urbanization to industrialization. Thus, the growth of Akure to a prominent medium-city cannot be described strictly with the word 'planned'. It is more spontaneous and cumulative in nature over several centuries and more rapid urbanization of the last fifty years [11]. Hence, the traditional foodmarkets being an integral part of the social infrastructure of the city; has influenced (and at the same) is also been affected by the political, cultural and socio-economic transformations in the larger society. These transformations are often accompanied with subtle and sometime quite sudden unintended consequences such as waste issues impacting on the environment.

2.1 The study area

As earlier state, the study area is located in Akure, Nigeria (see figure 1). Nigeria is a country of over 150 million people; situated to the south between the



Figure 1: Map of Nigeria.

1 Introduction

Geoffrey Broadbent [1], in his book *Designs in Architecture – architecture and the human sciences*; viewed architecture among primitive societies as a manifestation of their daily life, part of which is expressed in their interaction at the traditional marketplace. Foodmarkets in most African societies is a permanent presence of a constant monumental dimension. Hence, investigation into the architecture of the marketplace provides a cherished inter play of physical awareness through which historical, socio-cultural and technological knowledge can be experienced.

Market is a very old concept that dates back to the prehistoric cities of the world. The invention and vitality of the city has much to do with the supply of food through the marketplace [2]. The survival of the city today especially in Africa is due to the versatility of the market as 'a place' (physical entity) and as 'a process' (network of food supply) which may also have intended and unintended consequences such as handling, generation and management of waste.

2 Dynamics of change, urbanization, persistence of tradition and socio-political dilemma

The rapid urbanisation of Sub-Saharan Africa from a purely rural-agrarian society to a city based one is an interesting phenomenon to study and it has been of concern to many scholars as documented in several studies [3–8]. The transformation of African society is not only physical but encompasses socio-cultural, economic, political and metaphysical in nature. It is also interesting to note that the story of food and food production activities (that connects the markets, home and the city) are locked or intertwined in this rapid transformations and urbanization of post-colonial African society. By looking at on often neglected aspect that involves examining the roles played by socio-economic activities (such as the food markets) during the course of the rapid urbanisation or transformation and its impact on the built environment as experienced in the study area under review.

Many cities in Nigeria have experienced environmental disintegration and urban decay due to apathy, lack of maintenance culture, poverty large migration from the rural area to the urban centres, ignorance, ineptitude of governmental agencies, inadequate and improper waste disposal mechanism.

Nigeria is an important country, not just in African terms, but in global terms as well. Despite its recent history of economic downturn and unenviable pariah status in the international community, it is a country that cannot be easily ignored. Its history has been a roller coaster ride... and the opening of a new millennium perhaps offers a good historical junction from which to take a critical look at the transformation in the Nigerian state [9].



is the emphasis on the role of both human and nonhumans in shaping the urban milieu that involves *power relationship*. In their own words:

What obviously differentiates our ANT account is, of course, the suggestion that power relationship and human cognition might be influenced by nonhumans, from otters to £50 notes or bagpipes. As nonhuman and human interact, new interest, meanings, actors and roles are revealed which had, in this case, to be translated ... often by inserting new nonhumans and humans [17].

And this can clearly be translated into the urban environmental situation that involves the roles of both human and nonhumans in shaping the built environment especially as suggested in the research findings as shown in figure 2 and also later in table 1.



Figure 2: Networks of power relations mapping among actors/respondents involved in foodservices and waste management issues in the study area based on emerging themes from the case interview.

3.1 Employing ANT as a tool in understanding urban environmental impact assessment

Market places, people and various food production and consumption activities belong to these “heterogeneous networks derived from confused overlaps” [22,



Atlantic coasts, the vast rainforest of West Africa and the encroaching Sahara desert to the north. It is the most populous black nation in the world and for every five African, one is a Nigerian. Many scholars have regarded Nigeria as the most urbanised nation in Africa [12, 13]. Akure occupies a total land area of 2,303 square kilometres. It lies within 6°09'N - 7°25'N and 5°05'E - 5°40'E. It is 205km from Ibadan and 346km from Lagos. The National Population Commission census in 2006 put the census population figure at 353,211. Other minor settlements in close proximity to Akure include Oda Aponmu, Ipinsa, Iwoye, Ajipowo, Igbatoro, Adofure and Isagba. The choice of Akure for this study is based on a number of reasons; it is a typical example of a Sub-Saharan African city that has experienced rapid urbanisation in the past 50 years (1960 – 2010). It has grown from a medium sized agrarian town to a major metropolis that has experienced socio-cultural transformations and developments through the influence of globalisation and neo-colonial ideas.

3 How actor network theory can help in understanding urban complexities

Actor Network Theory (ANT) was first used by Michel Callon in the regard to find a neutral vocabulary to describe actions of “heterogeneous engineers” [14, 15]. ANT rests on the idea that relationship between different components of the society “and the strategies that shape it, may be described in a network of vocabulary that emphasise the interrelated and heterogeneous character of all its components both social and technical” [16]. The actor network theory has been useful as a tool to enable a description and analysis of the co-evolution of socio-technical context and content. The theory claims that innovations takes place within the networks of actors. The “global network” consists of sets of relations between an actor and its neighbours and relations between the neighbours. The global network is also the way attempt to mobilize and stabilize in order to obtain resources to build projects. It is within these networks that interactions may take place among the actors. ANT is also concerned with the stability and instability of emergent states in dynamic system, “which are responding to economic, political and technological changes” [17, 18].

Bruno Latour [19] commenting on Gabriel Tarde, revisited the sociological principles set forth by Gabriel (de) Tarde; a major figure in French sociology at the turn of the 19th century. A careful study of Tarde’s viewpoint has led perhaps to rethinking Durkheim’s approach to sociological studies. In reaction to the famous sociological dictum Latour [19] assert, “that the whole is more than the sum of its parts”; by borrowing from Tardian principle asserting that “since the smaller is always the more complex and the more explanatory entity, the whole is less than the sum of it. A human society, for example, is less than the sum of its aggregates”; hence, in order to understand complex relationship and interactions in the urban setting, it is imperative to critically review actants that made up the sum of its aggregates [20, 21]. According to Sage *et al.* [17] it is important to acknowledge the fact that ANT share similarities with some other approaches to organisational theories, however what stand out ANT from others



22, 23]. In addition, Bijker [23] identified forces that shape society, such as societal structures, power relations, ingenuity and emotional commitment of stakeholders involved in the schemes of things. It can be broadly argued that any transformation could have taken a different configuration, if different routes had been taken in its process. Bijker and Law [24] argued that societal transformation could have worked better; stating that “our artefacts might have been different, they might have worked better, they might not have failed, (and) they might have been more user and environmental friendly”. However, there is the need to remember that the whole history of societal development is not a linear progression or orderly path, neither were they consciously predetermined towards a goal [23].

4 Research findings: environmental impact of waste management and power relations among actors

This paper focuses on reporting the qualitative aspect of the research that involves a broader study. The research materials are sourced from data collection that includes mainly in-depth interview, direct observation, questionnaires building demographic and facility survey. Secondary data on health records, available base map of the study area and records from the environmental managers were sourced from the various institutions, ministries and establishments. Population data were obtained from the National Population Commission, Akure and general data on Nigeria. About 1306 buildings existed in the area, out of which 48 were non-residential, leaving 1258 as target population for the study. From this, a sample of 20% amounting to 252 was selected randomly for questionnaire administration and interview. In selecting the respondents, every 5th house in the five streets involved was taken for interview, usually a household-head per building.

4.1 Conducting the research interview

Conversation through interviewing can serve as the ultimate context in which knowledge is understood [25, 26]. Therefore, the preparation, designing and formulating of the interview questions, was carried out with the understanding that knowledge is *constructed* from the interview. Through the interaction of the interviewer and interviewee, conversation may be viewed as a basic mode of knowing more about behaviour of users of urban infrastructures such as the foodmarkets and its attendant impact on the built environment. Issues highlighted include socio-political/ development themes of the various actors, (the market users and sellers, government officials) that constitute part of the transformation in built environment in Akure and Nigeria. Also, that *human reality* may be recast or understood, and such understanding of realities may be methodological, epistemological or ontological in outlook [27].

In this regard, the conduct of the interview was based on an interview guide developed and pre-tested before the actual interview. The interviews were carried out with reflective approach to the knowledge sought. The interpersonal



Table 1: Thematic content analysis of research finding from the case interview illustrated above.

<i>Research Issue</i>	<i>Findings</i>	<i>Illustrative quotation</i>
Physical planning and pressure of socio-economic situation	Hawking and selling on the road, not desirable a blight on the city image	"I don't like the approach the market with all the sellers on the street and the rowdiness (respondent 51) " I don't like the physical structure of the new market that was erected by Agagu government" (respondent 30)
	Concern for pedestrian walkway	"Selling beside the road is rampant" (Respondent 41) "Markets are no longer well arranged. People just put their stock anyhow and hawking food in unimaginable places" (respondent 29)
	Market shed and hygiene	I feel the market need to be well organised in term of the physical shed and stalls. The present situation is not hygienic enough (respondent 24)
Waste management and Health issues in the city impacted by the food production activities and appearance the food market	Concern for loss of morals and cultural ethics. Globalization fingered as possible cause	"The place is crowded and somehow dirty" (respondent 52). The markets in Akure appear to be rowdy and dirty. (respondent 27)
	Need for major players or actors like the government to get involved in the transformation of food markets in Akure	"I don't like the wet and muddy ground during the rainy season" (respondent 2). "Rowdy and dirty" (respondent 46) "The dumping of refuse in the market must be addressed. More effort need to be applied by the market associations" (respondent 21).
	Waste disposal is an issues to be addressed- a negative impact of food market activities on the city	"I don't like the general appearance of the market , especially the mud in the ground whenever there is rain...I believe the government is trying to rebuild and redesign the markets in Ondo state" (respondent 22)
Environmental impact of handling of waste on social infrastructures that support the urban life	Drainage system, master plan of Akure city need an overhaul	"Indiscriminate dumping of refuse is a problem in our markets...I desire to see government to facilitate provision of infrastructures like good road network, health facilities, pipe borne water supply, banking system, and security" (respondent 44)
	Planning is not just about building structures, things like drainage, waste disposal should be planned along with the redesign of a markets	"Drainage system is poor. When rain falls the market area is very messy and water logged. Lots of rubbish blocked the drainage" (respondent 44)

economic and political relations. Understanding how society *functions and works is paramount*, since it exposes the complex “trade off and compromises” that shapes it [24]. Hence, this will lead to the people themselves to become better empowered to induce change.

5 Conclusion

Examining the foodmarkets as ‘a place’ and as ‘a process’ is often a reflector of the life within the city and offers a window into the soul of the city in the developing countries. Therefore, the function of foodmarket as a physical entity that originates with most cities can be closely linked to its role as facilitating food production and consumption and promoting social cohesion with attendant environmental consequences. Thus, this paper suggests that the contemporary structure of the city, especially the urban centres must be enhanced with the provision of specific policies in order to facilitate a holistic development. During the course of the field research, respondents observed that the general appearance of the city, urban lifestyle and city liveability is directly impacted by the issue of food waste, waste generation and waste disposal. Hence, the drive towards a sustainable city in the developing world and effective waste management there is need to understand the layers of underlying socio-cultural issues that prompted these changes which are subtle and sometime quite sudden with intended and unintended consequences.

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relationship with the interviewees before, during and after the process of conversation is done with mutual respect, tact and sense of friendliness. Because, in our culture a lot of greetings and self adulation towards the interviewee need to be in place; in order to create a sense of ambience for meaningful conversation. To elicit people's spontaneous concerns about the state of the food markets and the issues surrounding the social infrastructure such as food waste generation, handling and disposal of waste (especially at the main market Oja Oba) in Akure respondents were asked the following questions:

- Q. What is the name of your market?
- Q. What particular thing you do not like about markets in your city?
- Q. What do you think, in general, are the ways markets have changed from the past ones?
- Q. How do you deal with your food waste at home or at the market?

Urban transformations mirrors the complex nature of the society which has social implications, such the general attitude to hygiene, sanitation control and environmental consciousness of the urban populace (this can be compared to the apathy exemplified in pictures – see figure 3). It has been argued that it is practically impossible “to pry apart social, cultural and economic relations” [24]. Therefore, this paper argued that the process that shapes for instance attitudes towards waste handling, disposal and management has a strong link to the way societies were organised. Urban growth or transformation is not an inevitable phenomenon, but rather an unpredictable occurrence based on existing social,



Figure 3: Environmental management problem, garbage and food waste in relation to the foodmarkets and mitigating efforts by the community.

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