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Contents

| | |
|---|-----|
| Microfinance for the Urban Bottom of the Pyramid Segment in Nairobi's Kibera Slum in Kenya: Does Financial Training Impact on sustainable Urban Development? <i>Mutisya E. & M. Yarime</i> | 1 |
| Nigeria and the Political Economy of Underdevelopment: Focus on Selected Issues <i>Yagboyaju Dhikru Adewale</i> | 17 |
| Relationship between Teacher Attributes and the Use of ICT Facilities in the Language Classrooms in Osun State, Nigeria <i>Labo-Popoola S. Olubunmi</i> | 45 |
| Community Participation and Project Sustainability in Rural Nigeria: A Study of Bauchi State Local Empowerment and Environmental Management Project <i>Abdullahi M. B., A. Ahmed & I. Sale</i> | 61 |
| Indigenous People, Leadership and Development: The Role of Chieftaincy Institution in the Development of Ghana <i>Edusah S. E. & E. Osei-Tutu</i> | 77 |
| Street Sweeping in Ibadan: Urbanising Yoruba Traditional Environmental Sanitation Practice <i>Wahab B. & O. Kehinde</i> | 87 |
| Towards Eradicating the Victimization of Women in Infertile Marriages in South-Western Nigeria: A Case for Gender Emancipation <i>Adebayo Anthony Abayomi</i> | 103 |
| Effectiveness of Crime Prevention through Environmental Design Strategies towards Feeling of Safety Sustainability in Osogbo, Nigeria <i>Badiora Adewumi Israel</i> | 113 |

Street Sweeping in Ibadan: Urbanising Yoruba Traditional Environmental Sanitation Practice

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Abstract

Traditional African societies possess indigenous knowledge systems which promote affordable, effective, socially acceptable and sustainable community-based environmental sanitation and hygiene. One of the age-long and tested indigenous sanitation practices of the Yorubas of West Africa is the regular sweeping of their housing areas including the streets and footpaths. This practice is being promoted in Ibadan by the Oyo state government as part of the environmental sanitation policy.

This paper examines the effects of street sweeping activity on the quality of streets, the public perception and the challenges facing street sweepers in Ibadan. It presents the result of a questionnaire survey of street sweeping practice carried out in 2011 along six of the fourteen dual-carriage ways which traverse the five metropolitan local government areas of Ibadan. A total of 150 buildings along the streets were sampled, while 28 of the street sweepers, four street sweeping contractors and 12 officials of the Ministry of Environment and Habitat were interviewed. The study revealed that organised sweeping of streets has made them clean and created jobs for the citizens. Manual street sweeping is a cheap, effective, timeless and sustainable strategy that should be adopted by governments to improve the environmental quality of urban streetscape.

Key words: Indigenous knowledge systems, street sweeping, environmental sanitation, hygiene, poverty alleviation.

Introduction

Roads, streets and walkways constitute vital linkages which relate activities, uses and people on the land (Rubenstein 1968) in all human settlements. They facilitate the movement of people and goods across the different areas of a settlement. Streets are part of the necessary housing infrastructure to the extent that a housing environment must have a good network of roads for it to be considered functional and aesthetically pleasing. As Bistrup (1991) observes, streets allow social services such as rescue services, fire fighting services, emergency medical needs etc, to reach the housing environment quicker and better. Water and electricity are easily made available where streets and roads are in place.

The unrestricted movement of people and goods within a city is essential to its commerce and vitality, and streets provide the physical space for this activity (Kirkpatrick and Carter 2007). Some large city markets are known to regularly take over main streets for a greater part of the day like it is in Lagos where the famous Balogun market takes over Ita Balogun street and part of Nnamdi Azikwe road during the day time and also in Ibadan where the old Gbagi market presently occupies a large part of Lebanon street.

One of the negative fall-outs of these road activities which increase in volume as the urbanization rate gets higher, is the indiscriminate littering and throwing of thrash on the streets which make them very dirty, and unwholesome. The daily increase in both human and vehicular traffic arising from uncontrolled rural-urban migration into cities has overwhelmed city streets with dirt or waste, pollution and accidents. In Lagos and Ibadan, one of the measures taken by the State Governments to improve the environmental quality of city streets and protect the health of citizens is the sweeping and collection of waste and filth from the streets especially along routes with heavy commercial activities and high human/vehicular traffic. This practice of sweeping the streets is, however, not new among the traditional Yoruba communities of south western Nigeria. The states and local governments have simply adopted, as a public policy, the age-long indigenous environmental sanitation and hygiene practices of the Yorubas and many African traditional societies. It is a way of urbanising the rural environmental sanitation practices.

The influx of people into Ibadan city, for employment opportunities and better living conditions, has further aggravated the generation of waste matters on its roads. Ibadan streets are commonly very dirty as most major highways reveal a lot of dirt both on the sidewalks and the street median. Street hawkers, petty traders and road-side food vendors use the streets as their stalls and also as their refuse dump. Road users drop water sachets, empty drink cans and food items on the roads at will. Apart from these, many households empty their refuse bins and drums by the road side especially under the guise of the night.

This paper examines the street sweeping programme of the Oyo state government in Ibadan- an indigenous African city, the cultural aspect of the programme, the gender of the sweepers, the effects on the environmental quality of the streets, the public perception and the challenges facing the street sweepers. The approach adopted in this paper is to first examine the conceptual meanings of the terms 'street', 'street sweeping', 'environmental sanitation', and indigenous knowledge systems. This is followed by a brief background to street sweeping in Ibadan, the study methodology and then the findings of the research. The last section presents recommendations that could make the traditional street sweeping practice sustainable in urban communities.

Conceptual Clarifications

Street

A street is a paved or unpaved public road in a village, town or city, usually with side-walks or none. Wikipedia (2012) describes the street as a paved public thorough-fare in a built environment. It is a public parcel of land adjoining buildings in an urban context, on which people may freely move about, interact or undertake business activities. As a result of their multiple functions, the streets are often left dirty by the users through littering. Street littering is the careless disposal or deliberate leaving behind on the street of minor amounts of waste (Geller, Winett, and Everett 1982; Stokols and Altman 1987).

Street Sweeping

Street sweeping and drainage clean-out practices rank among the oldest practices used by communities for a variety of purposes to provide a

clean healthy environment (Law et al. 2008). In traditional Yoruba societies, street sweeping is an extension of the routine house-keeping involving the daily sweeping of the inside and surroundings of residential compounds and their linkages, the market square and the outdoor recreation areas. Ojedokun and Balogun (2011) observe that in traditional African settings, the cleaning of the compound is an uncontested duty of the women and the children. In many cities of the world, street sweeping is now being undertaken as an aesthetic and environmental management practice to remove sediment build-up, debris and litter from gutters. Curtis (2002) observes that, apart from keeping city streets looking neat and beautiful, street sweeping is practiced in urban areas across the United States throughout the year, to remove sand and grit from pavements and roadways, to stop the blocking of drainages and run-off pipes, and to also prevent solid waste from being washed from the streets into local water ways. Brinkman and Tobin (2001) observe that human health, environmental quality and pollution control are all inextricably linked to street sweeping and that the city is a better and healthier place because of the street sweepers.

Indigenous Knowledge Systems and Environmental Sanitation

Indigenous knowledge (IK) is local knowledge which was evolved, institutionalised and perfected by a community-based population in response to local conditions and needs (Warren 1996; Warren and Rajasekaran 1993). Indigenous Knowledge System (IKS) rests on a validated assumption that a community is guided by those principles and practices which they have developed over many years of experience and have transmitted from generation to generation through oral tradition (Titilola et al. 1994). Indigenous knowledge is inherently dynamic, constantly evolving through indigenous experimentation and innovation, fresh insight and external stimuli (Warren, Egunjobi and Wahab 1996). As Foster et al. (1996) observe, IKS not only reflect a population's health values and needs, they have also developed in response to local environments and conditions.

The Yoruba, one of the major ethnic groups in Nigeria, have an indigenous sanitation system (*imótótó*) which has important implications for health-care policy and delivery. The concept of *imótótó* is at the heart of sanitary behaviour of the people, both personal and environmental. Yoruba's explanations of causes of sickness include the medium such as insects, germs (*kòkòrò*, *kòkòrò àrùn*) or filth (*ègbín*). They, therefore,

emphasise cleanliness (*imótótó*) as a preventive measure which can promote sound health and sanitary environment. One of the ways through which *imótótó* is effected is the routine sweeping and cleaning of housing areas early in the morning and organised disposal of waste by women and girls. The society has a poetic saying/proverb to ensure that females are alert to their sanitation responsibilities:

Ta l'o m f'obun saya (who will marry a dirty woman?)

Ki l'obun maa bi lai se obun (a dirty woman can only give birth to a dirty child)

Sweeping, apart from cleaning an area of germs, dust and harmful insects, also has magical and spiritual undertones such as cleansing trouble and evil from the house. Yoruba traditional religion strongly promotes sanitation and cleanliness (Wahab, 2004). The Ifa oracle notes the spiritual effects of sweeping as the following excerpt relates:

Bonroyin awo Ode-Ido, Ogorombi awo Ode Esa, Erigidi dudu awo ilu Sakon were the diviners who cast Ifa for Olofin Obeleje when he was sleeping and waking up with evil vibrations. Olofin was told to go and sweep out the floor of his house and its surroundings, kill a he-goat over the garbage, and take everything to the forest. They told him that if a person took evil to the forest, he would return home with good... Today, Alade had expelled evil to the forest (Epega and Neimark 1995:88-89 quoted in Foster et al. 1996: 31).

In Africa's small towns and rural communities, taboos are used extensively as regulatory mechanisms to maintain good environmental health, keep away disease vectors and ensure compliance with sanitation rules by the people (Agbola and Mabawonku 1996; Oduyale 1985; Foster et al. 1996). Some sanitation-related taboos in the Yoruba community which have bearing with sweeping are (Wahab, 2004:6):

"No walking barefooted on an unswept floor early in the morning. This will cause swollen feet". Sweeping allows biting vermin to be cleared from the area when it is too dark to see them.

"No sweeping of the ground at night, as it annoys the gods". It is difficult to see and sweep effectively in the dark.

"Males should not step barefooted on melon waste peels. This can lead to loss of the genitals". Waste peels must be promptly swept to prevent accidental fall, which may cause injury to any part of the body.

The problem of environmental sanitation in Nigerian cities revolves around mounting heaps of uncollected wastes (Egunjobi 1993; Olokesusi 1994; NEST 1991) that are indiscriminately dumped on streets, drains and rivers thereby causing disasters, especially flooding, the worst of which ravaged the city of Ibadan on August 26, 2011 (Wahab 2012).

The Study Setting and Methodology

The city of Ibadan, the capital of Oyo state of Nigeria, is located approximately on longitude 3°5' east of the Greenwich Meridian and latitude 7°23' north of the Equator. It is approximately 145 kilometres north of Lagos and directly connected to many towns in Nigeria and its rural hinterland by a system of roads, railways and air routes. Ibadan, described by Fabiyi (2006) as "the world's largest indigenous city", has been an important rallying point for people in the south-west of Nigeria since its founding in the 1800s (Wahab 2011). Its population is estimated to be about 2,550,593 according to 2006 estimates by the National Population Commission. Its projected population by 2010 using 3.2% growth rate is about 2,893,137 (Wahab 2011). The metropolis is made up of five local government areas namely (see Fig. 1): Ibadan North West, Ibadan North, Ibadan North East, Ibadan South West and Ibadan South East. These inner city local governments are surrounded by the six local government areas of Akinyele, Lagelu, Egbeda, Ona-Ara, Oluyole and Ido.

Ojedokun and Balogun (2011) describe Ibadan as a dirty cosmopolitan town and the second most populous city in Africa with a wide-spread litter problem. In their psycho-sociocultural analysis of attitude towards littering in Ibadan, they observe that residents of Ibadan seem to have an aversion for littering perhaps because littering is an automatic and routine behaviour. This is one of the reasons for attempting to study the street sweeping programme in the metropolitan area of Ibadan city.

The case study approach was adopted in this study using both primary and secondary data. A Preliminary survey was carried out to identify fourteen (14) dual-carriage ways (streets) which were major roads traversing more than one LGA (see Fig. 1) and where street sweeping was taking place within the five metropolitan local government areas. The total length of the 14 streets was 67 kilometres and this was determined with the use of a car speedometer while driving through each street. A total of 244 sweepers were employed for the 14 streets (see Table 1). Six of these streets having a total length of 35km, 140 sweepers (127 females and 13 males) and 150 (10% of 1505) buildings along those streets were picked for sampling on the basis of one street per local government.

Three types of structure d questionnaire were administered to obtain empirical data. A total of 28 (2 males and 26 females) (20%) of the 140 street sweepers were randomly interviewed across the six streets (Table 1). Out of the 1505 buildings along the six sampled streets, 150 (10%) were sampled whereby the head of one household in a residential building, and in the case of commercial properties, office manager or shop owners, or their senior staff, regardless of their tenancy status, were given the questionnaires to complete. Employers' questionnaire was also designed and administered to 12 (28.6%) of the staff of the Oyo State Ministry of Environment and Habitat who were directly concerned with street sweeping.

Table 1: Length of Swept Streets in Ibadan and number of sweepers

| No Street /Description | Name | Local Government Area | Length of Street (km) | No of Sweepers | Sample size @ 20% |
|--|------|-------------------------------------|-----------------------|----------------|-------------------|
| 1. Eleyele expressway-Sango* | | Ibadan North/Ibadan North West | 6 | 24 | 5 |
| 2. Mokola roundabout-Sango-University of Ibadan-Ojoo Junction* | | Ibadan North | 11 | 36 | 7 |
| 3. Mokola roundabout-Dugbe post office* | | Ibadan North/Ibadan North west | 3 | 15 | 3 |
| 4. Mokola roundabout-Secretariat roundabout | | Ibadan North | 4.5 | 15 | |
| 5. Secretariat-Total Garden | | Ibadan North | 2.5 | 10 | |
| 6. Agbowo junction-Secretariat | | Ibadan North East/Ibadan North | 4 | 15 | |
| 7. Challenge roundabout-Molete-Bere* | | Ibadan South East/Ibadan South West | 6 | 30 | 6 |
| 8. Molete-Dugbe Post Office | | Ibadan South East/Ibadan North West | 5.5 | 15 | |
| 9. Challenge roundabout-Ring Road-Odo-Ona* | | Ibadan South West | 6 | 20 | 4 |
| 10. Secretariat-Governor's House-Agodi | | Ibadan North | 2 | 6 | |
| 11. Bere roundabout - Agodi -gate | | Ibadan South East/Ibadan North | 5.5 | 20 | |
| 12. Agodi-gate-Idi-Ape | | Ibadan South East/Ibadan North West | 2 | 8 | |
| 13. Idi Ape-Iwo Road Roundabout* | | Ibadan South East/Ibadan North West | 3 | 15 | 3 |
| 14. Total Garden-Yemetu-Bere roundabout | | Ibadan North/Ibadan South East | 5 | 15 | |
| Total | | | 67 | 244 | 28 |

Source: Field Returns, 2011. *Sampled Streets

(Directors, Supervisors, Health Officers) and the proprietors of the only four (4) street sweeping contracting companies in Ibadan (Akangbe Cleaning Services, Jola Environmental Sanitation Services, Bolkor Cleaners, and Aramide Cleaning Services). The data collected were descriptively presented using frequency tables and percentages.

Secondary data collected were lists of contractors and streets where street sweeping was carried out obtained from the Oyo State Ministry of Environment and Habitat, and map of Ibadan local government areas obtained from Oyo State Ministry of Lands, Housing and Surveys respectively.

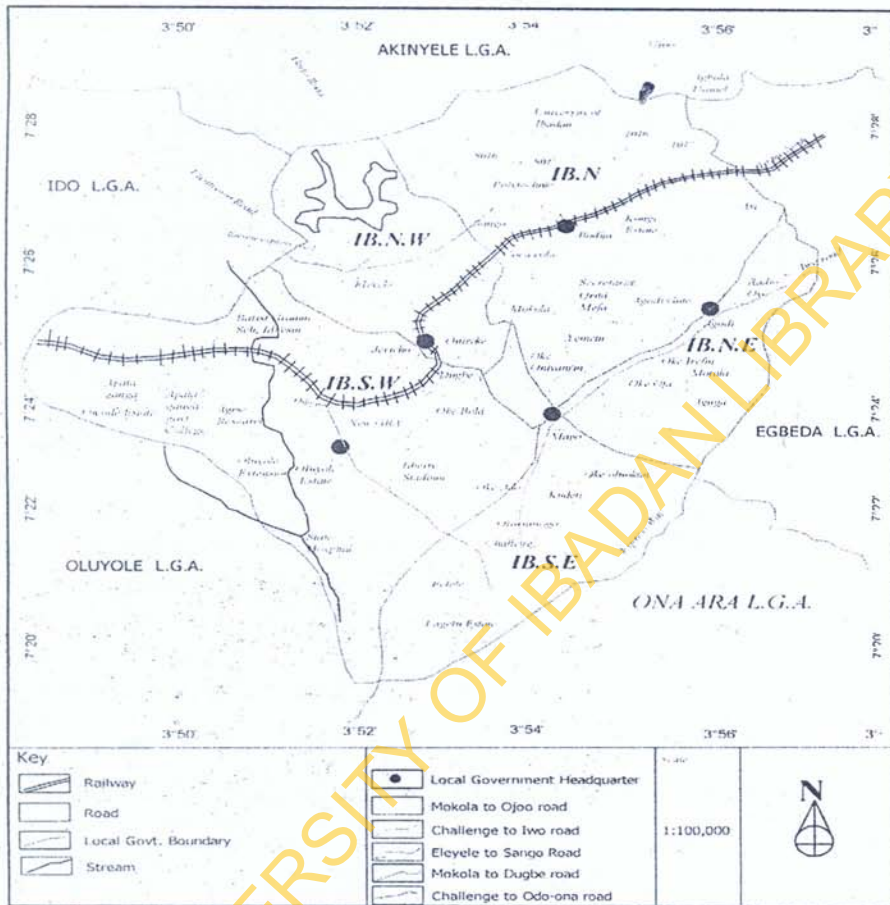


Fig. 1: Selected roads under street sweeping programme in Ibadan metropolis
Source: Oyo State Ministry of Environment, Ibadan 2011

Results and Discussion

The socio-economic characteristics of the 28 street sweepers interviewed were: 7.1% males and 92.9% females which is a true reflection of the traditional sanitation roles of women. Marital status varied from single (7.1%), married (82.1%), divorced (3.6%) and widowed (7.2%). About 32.1% had no formal education, 32.1% had primary- and 35.8% had secondary school education. Majority 68.7% earned a monthly income of between N6000 and N10,000 which is about a-half of the current approved

minimum wage in Nigeria, 17.9% earned N10,000 - N15,000 while 14.3% who were supervisors earned N15,000 - N20,000.

Reasons for taking to street sweeping were given as means of livelihood (60.7%), unemployment (32.2%) and, to avoid joblessness (7.1%). About 3.6% swept 100m length per day, 14.3% swept 200m, 57.1% swept any distance assigned by supervisor, while 25% swept gutters and packed litter into refuse trucks. Each sweeper swept an average of 50kg to 60kg of sand debris (see Plate 2) and 25kg of litter. Some sweepers separated reusable plastic bottles and sold to recyclers.

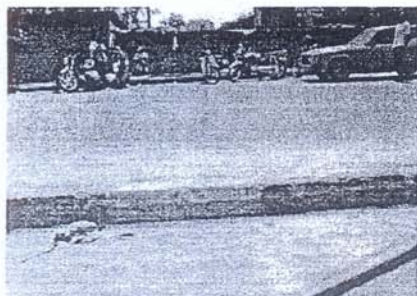
The sources of street dirt include: feeder roads/streets washing sand, pebbles and floatables into one another; rain water run-ons carrying dirt and discarded items; illegal dumping of household refuse and waste from offices and roadside shops onto streets; soil erosion; vehicles whose occupants throw out thrash while in motion; abandoned vehicles on roadsides turned into refuse receptacle; street hawkers, and wind activities. The characteristics of litter found on sampled streets in Ibadan are presented on Table 2 and shown in Plates 1-3.

Table 2: Characteristics of litter on Ibadan Streets

| Type of litter | Characteristics of litter | Geographical characteristics |
|-------------------------------------|--|---|
| Roadside litter of automobile type. | Battery parts, engine parts (bolts, nuts, plugs), used tyres, vehicle and motorcycle carcasses | Heavy traffic zones, taxi parks and motor garages such as Beere-Molete-Challenge, Oje, Iwo road bridge, Eleyele and Mokola roundabouts, Sango, Agodi-gate. |
| Street trash | Take-away packs, pure water sachets, water bottles, glass containers, empty cans of drinks, food wrappers and food remnants and cigarette butts etc. | Found more in heavy commercial areas and where fast-food eateries and restaurants are located such as Molete bridge, Mokola Roundabout, Ojoo Junction, Idi-ape, Sango-University of Ibadan(UI)-Ojoo road, Bodija market-Secretariat road, Challenge roundabout. |
| Organic matter | Leaves, grass and tree cuttings | Iyaganku-Agodi GRAs, Idi-ape-Iwo road, Mokola-Sango-UI road, Eleyele expressway to Sango, Secretariat-Total garden road. |
| Road construction materials | Sediments, broken blocks, sand, gravel, chopped wood, broken louvers, nails, iron cuttings pieces of zinc roofing sheets, solidified bitumen, pieces of clipped-off road surface | Roads where construction work was going on and where erosion washed away road surfaces such as Eleyele-Sango road, Iwo road under bridge, Molete-Beere road, Dugbe-Mokola road. |
| Miscellaneous | Animal carcasses and droppings, health care waste e.g. needles, syringes, plasters, bandages, used pads, drug bottles, blood-soaked cotton wool | Found in Bodija-UI road, Eleyele Roundabout, Total-garden-Beere road, Mokola-Sango-UI-Ojoo road, Molete-Challenge road |

Source: Field Returns, 2011 (modified from Brinkman & Tobin, 2001, p.169)

Plate 2: Sand Debris on Sango Road Plate 1: Street Dirt on Mokola Road Island



Sources: Field Returns, August 2011

The survey found some street dirt that the sweepers often refused to handle such as accumulated, decayed dirt or decomposed animal and human waste that had turned messy as found along Jemibewon road at Sabo and at Iwo road roundabout (Plates 3 and 4). As observed by Foster et al. (1996), Yoruba people consider dead animals and any human waste such as hair, fingernail clippings, menstrual material, phlegm, saliva, faeces, vomit, placenta as special refuse or filth (*egbin, idòtí*) and are discarded separately from general waste in a careful manner by burying in the bush to prevent possible infection if touched carelessly.

Plate 3: Decayed Street Dirt at Jemibewon Road, Sabo area, Ibadan

Plate 4: A Street Sweeper standing on Dugbe Road Island



Sources: Field Returns, August, 2011

The benefits of the street sweeping programme in Ibadan were identified by the sampled residents as employment opportunity (10.0%), aesthetic and safety (4.0%), beautification (80.0%) and wasteful exercise/no benefit (6.0%). Majority (98.0%) considered street sweeping as necessary while only insignificant (2.0%) felt it was unnecessary. They also rated the impact of organised sweeping of the roads as very effective (8.0%), effective (87.3%), ineffective (2.7%), while (2.0%) were undecided.

The study revealed some dangers to which street sweepers were exposed. While the employers of the sweepers claimed to supply them with gloves, refuse sacks, brooms and packers, only 64.3% wore hand-gloves (which they provided themselves whenever the supplied ones wore out) while 35.7% had no personal protective equipment. About 28.6% sweepers were exposed to cough and catarrh, 7.1% to malaria through mosquito bites while on duty while 64.3% were susceptible to road accidents occasioned by reckless driving. The hazards which sweepers were exposed to were corroborated by the 150 residents of buildings along the swept streets as offensive odour (40.75%), hay fever and asthma through dust inhalation (34.0%), accidents (14.0%) and rape and beatings by hoodlums (11.3%).

Arising from the perceived benefits of street sweeping, majority (50%) of the sampled respondents wanted government to employ more street sweepers to cover more streets, provide more dump sites 18.7%, provide litter bins and drums 17.3%, and train the sweepers on basic hygiene 4.7%.

Conclusion and Recommendations

The survey respondents' recommendations to solve the problems of street sweeping are: provision of basic tools and equipment (50.7%), deployment of traffic wardens to control traffic where sweepers are working (30.7%), public awareness programmes on the significance of street sweeping (2.0%) and creation of six additional dump sites for the city.

Other measures required to improve the environment of city streets include sustained public enlightenment campaigns using the print and electronic media and the traditional communication channels to reduce littering by individuals since littering in Ibadan is, according to Ojedokun and Balogun (2011), attitudinal in which men more than women engage in. More men should be employed as street sweepers as a strategy to inculcate anti-littering attitude in them. Private sector and community-based organisations should be encouraged by government to establish micro-enterprises to engage in street sweeping business. Women and unemployed youths in the state should be empowered through small loans from micro-finance banks to recycle some of the reusable waste items packed from the streets.

In traditional Nigerian society, sweeping is a cultural and communal issue. The efficacy of the traditional sanitation practice made the Oyo state government adopt organised street sweeping as a litter intervention programme in the state capital. Manual sweeping of the house and the circulation routes is a sustainable sanitation system which has a high level of contemporary validity and application. To make the practice continuously relevant and effective, indigenous education, which is the foundation for *imótótó*, should be given priority attention through the education of the mother (Wahab, 2004) whose duty it is to teach the child the "knowledge of sanitation and aesthetic norms of the people" (Fadipe, 1991 p.13). It should also be made a part of the curricula of primary and secondary schools so that the pupils will develop a negative attitude towards littering.

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