

**NIGERIA**

# **PRIVATE SECTOR PARTICIPATION IN**

## **SOLID WASTE MANAGEMENT ACTIVITIES IN IBADAN**

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World Bank and the Public-Private Infrastructure  
Advisory Facility (PPIAF) for the Oyo State Government  
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**WORLD BANK GROUP**



**PPIAF**  
Enabling Infrastructure Investment



**NIGERIA**

**PRIVATE SECTOR  
PARTICIPATION IN**

**SOLID WASTE MANAGEMENT  
ACTIVITIES IN IBADAN**



**WITH SUPPORT FROM EY & EGIPE SARL**



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# ABBREVIATIONS AND ACRONYMS

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<b>CBO</b> – Community Based Organization	<b>MPPUD</b> – Ministry of Physical Planning & Urban Design
<b>CDM</b> – Clean Development Mechanism	<b>MRF</b> – Materials Recovery Facility
<b>CWG</b> – Collaborative Working Group on Solid Waste Management in Low- and Middle-income Countries	<b>MSW</b> – Municipal Solid Waste
<b>DBFO</b> – Design, Build, Finance and Operate	<b>NESREA</b> – National Environmental Standards & Regulations Enforcement Agency
<b>DBO</b> – Design, Build and Operate	<b>NAIF</b> – Nigeria Infrastructure Advisory Facility
<b>EHOs</b> – Environmental Health Officers	<b>OSEPA</b> – Oyo State Environmental Protection Agency
<b>EIA</b> – Environmental Impact Assessment	<b>OSG</b> – Oyo State Government
<b>EPC</b> – Environmental Pollution Control	<b>OYOWMA</b> - Oyo State Solid Waste Management Authority
<b>ESEA</b> – Environmental Sanitation Enforcement Agency	<b>PAYT</b> – Pay-As-You-Throw
<b>ESL</b> – Environmental Sanitation Law	<b>PPE</b> – Personal Protective Equipment
<b>EY</b> – Ernst & Young	<b>PPIAF</b> – Public Private Infrastructure Advisory Facility
<b>GDP</b> – Gross Domestic Product	<b>PPP</b> – Public-Private Partnerships
<b>GIS</b> – Geographical Information System	<b>PSP</b> – Private Sector Participation
<b>GPS</b> – Global Positioning Service	<b>RDF</b> – Refuse Derived Fuel
<b>GTZ</b> – German Agency for Technical Cooperation	<b>SIP</b> – Sustainable Ibadan Project
<b>HSE</b> – Health, Safety and Environment	<b>SWM</b> – Solid Waste Management
<b>IUFMP</b> – Ibadan Urban Flood Management Project	<b>WB</b> – World Bank Group
<b>IWMA</b> – Ibadan Waste Management Authority	<b>WSA</b> – Waste Service Agreement
<b>LASEPA</b> – Lagos State Environmental Protection Agency	<b>TLS</b> – Transfer Loading Stations
<b>LAWMA</b> – Lagos Waste Management Authority	<b>UCODEA</b> – Urban Community Development
<b>LGAs</b> – Local Government Areas	<b>UN</b> – United Nations
<b>LG</b> – Local Government	<b>UNEP</b> – United Nations Environment Program
<b>MEH</b> – Ministry of Environment & Habitat	<b>UNFCCC</b> – United Nations Framework Convention on Climate Change
<b>MEHL</b> – Ministry of Environment and Habitat Law	
<b>MPPL</b> – Ministry of Physical Planning and Urban Development Law	

*All monetary amounts are Naira unless otherwise indicated.*

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# EXECUTIVE SUMMARY

## INTRODUCTION

Ibadan is the capital of Oyo State and the third largest city in Nigeria. The population of the metropolitan area of Ibadan is estimated at close to 3,5 million (IUFMP, 2014).

The management of solid waste in Ibadan has been a challenge for decades. A large portion of the solid waste generated in the city is dumped on available plots of land, sidewalks, roads, streams, channels and drains – the collection rate is estimated at around 40% (Ogungbuyi, 2013). The clogging of drainage systems is an particular issue as Ibadan is highly exposed to flooding. The city has a history of deaths from floods caused by water channels being blocked with waste, and outbreaks of infectious diseases from human contact with improperly disposed and untreated waste.

Improving solid waste management (SWM) is a priority for the Oyo State Government, alongside reducing the burden of publicly funded waste management on the State's finances. The State has recognized the need to improve the level of private sector participation (PSP) in order to overcome the technical and financial deficiencies currently associated with solid waste management in Ibadan, and agrees that private investment in the sector can help increase efficiency, lower costs and improve the quality of service. The level of PSP in waste management in Ibadan is currently limited to waste collection and transportation, and therefore, the Governor of Oyo State requested support from the World Bank to conduct a study on how the private sector can help improve solid waste management in Ibadan.

The scope of the report was undertaken with the following objectives:

- Assess the existing practices, challenges and current performances of the private sector in SWM in Ibadan;
- Collect and validate the baseline information on the SWM sector to provide critical inputs to be actioned within the Ibadan Urban Flood Management Project;
- Identify challenges and opportunities in terms of institutions and financing; and
- Provide the Oyo State Government with policy recommendations to improve the SWM in terms of short, medium and long term.

This report will further support the ongoing World Bank supported activities namely the Ibadan Urban Flood Management Project (IUFMP) – a response to the floods of 2011 which caused significant human and economic losses of Ibadan. The IUFMP project has several components which include improving and repairing damaged infrastructure assets, as well as undertaking a series of strategic studies – urban, drainage and solid waste masterplans – which will better enable Oyo State to identify additional areas for investment to improve Ibadan's ability to better manage floods and build long-term resilience.

In this regard this report aims to outline the challenges faced in the solid waste management sector in Ibadan, and to provide a set of recommendations to guide Oyo State Government, and other key stakeholders to improve efficiency and to provide policy guidelines that will better enable private sector participation.

The outputs of this study will complement the solid waste masterplan to be implemented under the IUFMP, the masterplan will provide Ibadan with a 20-year vision on improving the entire value chain for SWM in the city, this activity will therefore use this study to as a baseline of engaging with OSG and other key stakeholders.

The private sector has been involved in solid

waste collection in Ibadan for over 40 several years (Ogungbuyi, 2013). There are 317 registered private contractors collecting waste in the 11 Local Government Areas of Ibadan metropolis. They collect waste from residential, commercial and industrial zones that are ready to pay for their services (OYOWMA, 2016). Some of the private contractors have been involved in solid waste collection for over 20 years in Ibadan. The waste collection operating permits granted by OYOWMA to private refuse collectors determine the designated service areas that each operator is permitted to service. The private contractors pay a registration fee for the operating permits, and the permits are only valid for a year at a time. The private contractors collect waste collection fees directly from waste producers (i.e. households, commercial businesses and industrial companies) based on standard tariffs, with minimum and maximum charge rates set by the Oyo State Solid Waste Management Authority (OYOWMA).

OYOWMA sets the tariffs according to levels of income in each area, and the type of waste (residential, commercial or industrial). The private contractors are to pay 20% of their monthly collections to OYOWMA to defray its administrative costs, and for the maintenance of the dumpsites and other facilities. The collection of fees from waste producers is a particular challenge for private sector operators, and it causes a major risk to their income and business viability.

## THE LEGAL AND INSTITUTIONAL FRAMEWORK FOR SOLID WASTE MANAGEMENT IN IBADAN

At the national level, the legal framework for solid waste management forms a part of Nigeria's laws and regulations that are focused on the protection and development of the environment, and this framework is set out within the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007. The National Environmental (Sanitation and Wastes Control) Regulations of 2009 further provides the legal framework for environmental sanitation and waste management in Nigeria. These regulations provide general guidelines on the management of solid waste, and include a requirement that the waste is handled by a person licensed to transport and dispose of solid waste in a designated waste management facility. Policy Guidelines on Solid Waste Management (2005) developed by the Federal Ministry of the Environment also set out the roles and responsibilities

of Government at the Federal level, at the State level and at Local Government level. The following four solid waste management options are recommended within the Policy guidelines:

1. By Local Government/Municipal Agencies;
2. By Private Companies on contract with the LGA/Municipality;
3. By Private Companies on contract with Home Owners;
4. By public-private partnership (PPP).

The responsibility for overseeing SWM in Ibadan currently lies with the following three institutions, each with different roles and responsibilities:

- the **Oyo State Ministry of Environment and Habitat** has overall responsibility for the protection, maintenance and development of the environment in the State, including solid waste management.

- the **Oyo State Solid Waste Management Authority (OYOWMA)** has the direct and operational responsibility for solid waste management in the Ibadan metropolitan area. The Authority oversees waste collection, street cleaning, transport, the management of dumpsites, and the granting of operating permits to private waste contractors. OYOWMA also monitors the activities of these private waste contractors. OYOWMA has the authority to charge fees for the registration and subsequent renewal of private refuse collection licenses. The Authority is also able to charge dumping fees per truck for access to the dumpsites. The Authority further has the power to revoke licenses and impose fines on waste collectors for a range of possible malfeasance, for example, collecting waste outside of their designated areas or using unapproved waste disposal sites.

- the **Local Governments** are to support the implementation of good practices in solid waste management, and are to make annual budgetary provisions for solid waste management. Previously, the Local Governments did not have adequate means to undertake waste management in their areas effectively, and OYOWMA was charged to collect waste around major roads, markets, inner city areas and other areas not covered by private waste contractors. Due to change in policy, from October 2015, Local Governments once again became responsible for waste collection within their individual jurisdictions.

The Ministry of Environment and Habitat oversees the activities of the OYOWMA and is responsible for weekly Environmental Sanitation Exercises, which monitor the state of waste in the Local Government Areas of the state. The State Governor is the final decision maker on solid waste management and on private sector participation.

## EXISTING PRACTICE, CHALLENGES AND CURRENT PRACTICES OF THE PRIVATE SECTOR

During the study period it was identified that private contractors have been involved in solid waste collection in Ibadan for over 20 years. About 40% of the total waste collected is currently done by private refuse collectors, an increase from about 30% in 2014. There are 317 registered private contractors collecting waste in the 11 Local Government Areas of Ibadan metropolis, and they collect waste from residential, commercial and industrial zones that are ready to pay for their services (OYOWMA, 2016). Many of the private contractors are small – the biggest contractors have up to 5 trucks with about 5 staff per truck, and most of them are members of the Private Refuse Contractors Association. Members that do not own operational trucks can rent them from other contractors who have more than one truck. The Association is also able to lend money to its members at low interest rates to finance the purchase of trucks.

The private contractors use all kind of trucks, but they do not use trucks designed specifically for waste collection. There are no packer trucks, no big capacity vehicles, and most of the vehicles in use are about 5 to 10 tons, i.e. generally smaller than the vehicles in use by OYOWMA. The trucks are also acquired second-hand. They have only one drive axle and therefore they encounter difficulties when driving in wet and muddy conditions. There are also no transfer stations in Ibadan, so all waste

collection trucks must drive out to one of the four dumpsites once the trucks are fully loaded. This means that the trucks can only make up to two collection rounds per day.

The waste collection operating permits granted by OYOWMA to private refuse collectors determine the designated service areas that each operator can service. The private contractors pay a registration fee for the operating permits, and the permits are only valid for a year at a time. The private contractors collect waste collection fees directly from waste producers (i.e. households, commercial businesses and industrial companies) based on standard tariffs, with minimum and maximum charge rates set by OYOWMA. OYOWMA sets the tariffs according to the level of income in each area, and the type of waste (residential, commercial or industrial). The private contractors are to pay 20% of their monthly collections to OYOWMA to defray its administrative costs, and for the maintenance of the dumpsites and other facilities. The collection of fees from waste producers is a particular challenge for these private sector operators, and it causes a major risk to their income and business viability.

In addition to the above, there is also an informal sector that is active in recovering recyclable materials from solid waste in Ibadan. This material recovery activity happens at the point of waste generation in households or companies, or at trash cans, skips bins and at dump sites. There are so-called “scavengers” that sort and recover valuable materials from the waste. These actors are typically poorly equipped or not equipped at all, and although not formally a part of the private waste management sector in Ibadan, they recover significant amounts of waste and sustain a market in recyclable materials.

## AREAS TO IMPROVE THE QUALITY AND LEVEL OF PRIVATE SECTOR PARTICIPATION

Several areas where there is scope to improve the involvement of the private sector in solid waste management in Ibadan were identified. These areas are interdependent and a multi-faceted plan is required to achieve success. The key areas to

improve private sector participation in solid waste management in Ibadan are as follows:

### 1. Revenue collection of waste management fees



- Firstly, there is a need to address the perceptions among waste producers regarding the waste collection fees. In order to maximize the levels of compliance or patronage, there is a need for consultation and transparency in the setting of the collection fees. This will help mitigate the view held by some waste producers (i.e. households) that the waste collection fees they pay are too high.
  - In order to ensure a wider provision of collection services to all households, and a reduction in the level of resistance to fee payments, the setting of the fees should be better regulated and better enforced. It is also necessary to demonstrate to waste producers that the fees are reasonable and they are the most cost-effective possible. This can be achieved through a transparent process for the determination of fees, and rigorous enforcement of the fixed rates.
  - The selective application of fees within areas of the city and the lack of a transparency around the fees being charged in each area are clear obstacles to the sustainability of existing PSP in waste collection, and to the expansion of waste collection services to cover the entire metropolitan area.
- 2. Cost recovery and financial model for solid waste management**
- Certain areas allocated to licensed waste collectors are more lucrative or commercially viable than others, leading to some licensed waste collectors not being able to recover adequate revenues to enable them to invest in performance improvement. There is a need to ensure each licensed collector is allocated a 'commercially viable' area if they are to be able to deliver an effective service.
  - Separately, the report noted that as licenses for waste collection must be renewed each year, there is not much incentive for private contractors to make long-term investments to improve the efficiency of their operations. The short contract duration also limits the ability of the collection companies to raise finance for new equipment. In essence, they are unable to demonstrate to financial institutions that they will be viable beyond a one year horizon.
- 3. Transport infrastructure and waste facilities**
- Packer-trucks cannot be used in every part of the city because of the poor state of many of the roads. The private collectors have

already customized some of their trucks in order to be able to reach inner city areas with narrow or otherwise inadequate roads. The majority of the trucks are however old and they breakdown very often, which reduces the reliability and the quality of the service. This is not helped by the fact that spare parts for the old trucks are difficult to obtain. There is a need for significant public investment in better road networks.

- There is also a need for solutions for bringing waste from the innermost areas where motorable roads are non-existent to waste collection points that can be easily reached by waste removal trucks. The productivity of the collection teams relies on the state of the roads on which the trucks are used, and smaller motorized and non-motorized vehicles have been discussed as options to deal with difficult terrain. However, the aforementioned challenge of raising finance limits the ability of the private sector to acquire new and better adapted equipment.
- Facilities such as Transfer Loading Stations (TLS) are also non-existent. The use of TLSs will significantly reduce the distance travelled by each waste truck from their collection point to their offload point (currently one of four dumpsites outside the city). The waste truck would then have a much reduced rotation time, less operating costs and higher productivity.

#### **4. Public attitudes and behaviors regarding waste disposal**

- Ibadan has a firmly entrenched culture of resistance to paying for the waste management. The World Bank team discovered during hosting stakeholder engagement that this view is slowly changing, partly as a result of efforts by the State Government to raise awareness through various forms of media. The entrenched attitude has a direct impact on the viability of PSP, as a general trend not to pay for waste disposal has an impact on the levels of revenue that can be achieved by private collectors. Thus impacting upon the private sectors' willingness to invest.

- Furthermore, a significant deficit in the number of enforcement officers, limits the capacity to enforce existing waste regulations. The World Bank team discovered the legal framework to be adequate for the involvement of the private sector. The laws are also clear on the proper handling of waste by waste producers, as well as the attendant sanctions for non-compliance. For example, all households are legally required to have appropriate containers for the storage of waste on premises, and arrangements for the regular removal of the waste by paid service providers. The lack of proper enforcement of these legal requirements reinforces existing attitudes to waste management and is a missed opportunity to drive up behaviors that can boost revenues and increase the commercial viability of private operators.

#### **5. Resource recovery (e.g. energy recovery and material recycling)**

- From the engagement with relevant stakeholders, it emerged that there is a need for greater coherence in arrangements for involving the private sector in the waste processing and material recovery end of the waste management chain. Several interested private sector operators expressed difficulties in moving a range of proposed waste-to-wealth (e.g. material recycling and composting) and waste-to-energy (e.g. incineration and biogas plants) projects forward.

The existing capacity to grant and manage contracts at this end of the chain is weak, and Oyo State will require expert transaction advice to ensure it achieves the most effective performance based contracts. There is also a need to build capacity within the relevant oversight agencies in order to ensure any achievements in this area are sustained.

## RECOMMENDATIONS

Improving private sector participation is a comprehensive process that requires extensive interventions, consultations and strong regulation of both the waste producers and private operators in the waste management chain. It requires the reliable collection of waste management data for decisions to be based on actual performance. It also requires significant investment to build infrastructure and human capacity that will improve productivity to create a viable and sustainable waste management system. If implemented correctly with gradual increases in the transfer of costs to the waste producers, the level of public investment required will reduce over time, as the private sector demonstrates viability and delivers better services.

This report contains a range of specific recommendations towards achieving a high level of private sector involvement in the Ibadan waste management chain, and to develop a sustainable solid waste management framework for the entire Ibadan metropolitan area. The recommendations outlined in the full report to Oyo State Government are:

- **Analyze and verify the current performance of waste collection and transportation, and its costs.** In order to attract the private sector and encourage investments, Oyo State must be able to report detailed waste management performance data reliably and be transparent regard-

ing the costs and opportunities for revenue in relation to waste management activities. The analysis can be done as part of the preparation of Ibadan's Solid Waste Management Plan, however, a sustainable and longer term mechanism for gathering and analyzing data on costs and on performance will be required. Such a mechanism will enable the determination of the right balance between subsidy and the level of costs to be borne by the waste producer on a year-on-year basis.

- **Ensure better recovery of waste collection costs by compelling all waste generators (households and businesses) to pay waste management fees.** This could be done by further and wider communications to businesses and the general public (e.g. through contact with community leaders and information campaigns that explain the importance of paying for waste management and how the money is being used). It was noted that Oyo State is already increasing its communications effort toward the tail end of the study.

To complement the improvement in communications and awareness raising, there is also the need to properly enforce the setting and collection of fees. Proper enforcement will depend partly on having an effective workforce of Environmental Health Officers. Alternative revenue collection mechanisms should also be considered in due course, for



example charging for waste collection via utility (water or electricity) bills or property taxes, and introducing 'Pay-As-You Throw' schemes. A further option would be to encourage waste producers to sort their waste and separate reusable or recyclable materials, and involving the private sector to pre-collect sorted waste in return for some form of recompense to the waste producer.

- **Develop performance based concession contracts for key aspects of the waste management chain (collection and transfer, processing, material recovery, waste-to-energy).**

These contracts should be of adequate duration, ranging from 3-4 years for waste collection (2-3 years could be applied during a transition phase) to between 8 and 25 years for waste processing such as material and energy recovery and landfill management. The contracts with private contractors should clearly define the scope of services and responsibilities, and should be performance-based with agreed incentives and sanctions. Oyo State should also ensure it develops the necessary competencies and resources to manage the procurement process and resulting public-private partnerships (PPPs), including monitoring the performance of the private contractors to ensure they fulfill their duties.

- **Develop better and more transparent procurement processes.** The private waste management sector can be made more competitive through open tender processes based on strict and clearly defined technical, administrative and financial requirements. By providing reliable information about the current opportunities and ensuring procurement tenders are as widely published as possible, Oyo State will be in a better position to attract larger waste management companies (domestic or international). The State will also be in a position to achieve the most cost effective deals based on the level of competition from interested private sector operators. It was noted that Oyo State was moving in this direction towards the final stages of the study but will require a much greater concentrated effort

- **Implement measures that would improve the productivity of waste management activities including investing in transport infrastructure and waste facilities.** Oyo State should explore a range of options to improve the produc-

tivity of waste management activities, for example, restructuring the waste collection system to make each designated area more viable; improving the quality of roads; establishing Transfer Loading Stations (TLS) across the metropolitan to reduce the distance and time for trucks to travel to the dumpsites; the use of dedicated and 'prepaid' bins or plastic bags for the collection of waste; working with the private sector to establish recycling centers to recover resources and reduce the need for landfill etc. Many of these improvements can be done in collaboration with the private sector and through PPPs, but Oyo State will need to ensure the investment conditions are attractive, e.g. by ensuring land identification and acquisition; guaranteeing construction permits for facilities; clearly defining the revenue model and construction, maintenance and ownership; etc.

- **Clearly define the roles and responsibilities of the public institutions involved in regulating the waste chain and ensure that they have adequate capacity to perform their responsibilities.** At the moment there are three different public institutions in Ibadan that are involved in solid waste management. In particular, there should be a clearer distinction between the regulator and operator of waste management activities. Oyo State should ensure that the appropriate public institution that is acting as the client to private contractors has the competencies and resources needed to successfully initiate, develop, negotiate, award and manage private sector participation engagements. Likewise, Oyo State should ensure that there are adequate resources to enforce the existing waste legislation, particularly related to indiscriminate dumping of waste and proper disposal of waste through authorized (private) waste collectors.



## CONTRACTUAL ASPECTS

Service providers do not have methods to evaluate the performance, quality and productivity

Develop methods and build the service providers' capacity in financing and management

Contractual framework not supportive of the professionalization of the waste collectors

- Develop investment commitment in the contract
- Ensure the allocation of budget for guaranteed payment of the service providers
- Allow processes to renegotiate the contracts with the service providers

Contracts for the private contractors are only renewed every year – too short to encourage long-term investments and attract financing

Develop concession contracts lasting several years, the contracts may first be extended to 2 or 3 years' as a transition and then the contract duration should be preferably at least 7 to 8 years

## COST RECOVERY

Waste operators have trouble getting paid in some areas

- Compel all households to pay fees for waste collection
- To foster community led collection and empowering community associations to enforce the collection of waste into waste collection points
- Inform the waste producers about the benefits they can expect from the services provided

Currently there is no financial model to estimate the cost of solid waste management in Ibadan

- The financial model for investments and operation of waste management activities in Ibadan should be established.
- The fees/taxes collected should depend on the affluence of the waste collection areas.
- To provide information required to establish the financial model in the contract.

Exclusion of informal workers such as scavengers in resource recovery

- Identify the informal workers in Ibadan
- The waste pickers collect directly from the waste producers in areas difficult to access: the waste producers pay less if they sort the waste

While the economic feasibility of resource recovery is very uncertain, some companies have already proposed to develop waste-to-energy and material recovery facilities in Ibadan

- Monitor closely the private companies willingness to invest in resource recovery activities
- Improve the management of the landfill to reduce the area covered by waste and free space for waste-to-energy activities.
- Initiate a first negotiation with these companies to elaborate the requirements in order to prepare an open tender and write the terms of reference

**Table 1:** A synthesized table of identified challenges and proposed actions for Oyo State Governments

Expected Benefits/ Objective	Principal Stakeholder	Supporting Stakeholders	Time Horizon
<ul style="list-style-type: none"> <li>• Improve the quality and the productivity of the services to build trust with the public</li> <li>• Help the professionalization of the waste management</li> </ul>	Service providers / OYOWMA	LGA / Oyo State	1 year
<ul style="list-style-type: none"> <li>• Improve the quality and the productivity of the services</li> <li>• Improve the relationship between the private and public sector</li> <li>• Prove the capacity to repay loans, give credence to the operators</li> </ul>	OYOWMA / Service providers	LGA / Oyo State	2 to 3 years
<ul style="list-style-type: none"> <li>• Bigger investments for the collection means</li> <li>• Access to loans for the private sector</li> <li>• Improvement of the quality of the services at a fixed price</li> </ul>	OYOWMA / Private contractors	Banks / OYO State/LGA	2 to 5 years
<ul style="list-style-type: none"> <li>• Improve the security of the payment</li> <li>• Reduce the fees for the waste producers</li> <li>• Enable to enforce high quality and productivity standards</li> <li>• Enable collectors to access to bank loans to buy better equipment</li> </ul>	OYOWMA / Oyo State / LGA / Private contractors / Community leaders	OYOWMA / Service providers	1 to 2 years
<ul style="list-style-type: none"> <li>• More precise concession agreements</li> <li>• More accurate knowledge about the costs and revenues</li> <li>• Price of the service justified by the open tender process</li> </ul>	OYOWMA / Private contractors	LGA / Oyo State	2 to 5 years
<ul style="list-style-type: none"> <li>• Streets cleaner in the areas covered by the informal sector</li> <li>• Improvement of the income</li> <li>• Sorting of the waste</li> <li>• Formalization of the informal sector</li> </ul>	OYOWMA / Recycling industrials / Informal stakeholders	OYO State	3 years
<ul style="list-style-type: none"> <li>• Reduction of the quantity of waste arriving to the landfills</li> <li>• Cost reduction</li> </ul>	OYOWMA / Industrial already identified by OYOWMA	Oyo State / Ministry of Environment and Habitat/ Ministry of Trade, Investment and Cooperatives	5 to 10 years

## INFRASTRUCTURE GAPS

The poor state of the roads hinder the performance of the waste management services and productivity	Continuously improve the state of the roads and traffic
There are no normalized measurements of the quantity of waste delivered to the dumpsites	Install a weighbridge in each dumpsite with a computer system with 3G to transfer in real time the results of the weighing to OYOWMA
Trucks not adapted to the roads in Ibadan	Mobilize advanced technical expertise to produce designs, manufacturing templates, mounting and maintenance instructions required to equip four-wheeled medium size trucks according to the private collectors
There are no transfer stations in Ibadan	Oyo State should establish transfer stations around the metropolitan area as they are the most efficient solution to quickly improve the current performance of waste collection and transport
Dumpsites poorly laid out creating truck traffic issues and leachate issues	<ul style="list-style-type: none"> <li>• Improve the quality of the inner tracks of the dumpsites</li> <li>• Higher levelling of the waste</li> <li>• Use of covering soils</li> <li>• Have a network to collect leachate and rain water</li> <li>• Have leachate storage pounds</li> <li>• Have enclosure wall of at least 3m high around the sites</li> </ul>

## ROLES AND RESPONSIBILITIES

OYOWMA charges dumping fees for each dumpsite used by an operator. In addition, OYOWMA also levies an annual licensing fee, however, this fee varies, depending on the areas and categories of operations.	Standardization of these fees and clear communication on them will help to foster PSP
The current rules and regulations regarding solid waste management are not adequately enforced	OYOWMA and the Ministry of Environment and Habitat, adequately enforce the laws which would protect all stakeholders
Areas allocated to Private Collectors	Develop a zoning of the city providing balanced collection areas (between low/ middle/high income) and leading to a daily tonnage corresponding to at least five collection trucks
There is limited resource recovery such as waste-to-energy and composting	<ul style="list-style-type: none"> <li>• Develop the whole waste management value chain to support resource recovery activities</li> <li>• Have a characterization of the waste conducted according to a standard method</li> </ul>

Expected Benefits/ Objective	Principal Stakeholder	Supporting Stakeholders	Time Horizon
<ul style="list-style-type: none"> <li>• Enable the use of bigger capacity trucks</li> <li>• Reduce the number of break downs</li> <li>• Improve the productivity of the teams</li> <li>• Improve the coverage of the collection services</li> </ul>	OYOWMA Service Providers		Continuous efforts
<p>Reliable statistical data:</p> <ul style="list-style-type: none"> <li>• New possibilities to pay the waste collection services</li> <li>• Possibility to correlate this data with other available data (demographic, cost recovery, etc.) to produce management indicators</li> </ul>	OYOWMA / Potential Dumpsite operator	Company specialized in weighing systems / Universities	6 months for the implementation (continuous efforts)
<p>Develop local expertise adapted to the local constraints and enabling to use vehicles simple to maintain and repair</p>	OYOWMA / Private contractors	Oyo State / Universities	2 years
<p>The transfer stations would enable the collection vehicles to remain longer in the collection areas every day and to reduce the risks of damage to the collection vehicles.</p>	OYOWMA / Private contractors / LGA	Oyo State	2 to 5 years
<ul style="list-style-type: none"> <li>• Dumpsites with a longer life cycle</li> <li>• Reduce the disturbances for the surroundings</li> <li>• Reduce the risk of truck break-downs in the dumpsites</li> <li>• The inner tracks can be used by packer trucks</li> <li>• Reduce the impact on the environment</li> </ul>	OYOWMA / Oyo State	LGA / Private contractors	6 months for the improvement inner tracks 3 to 10 years
<ul style="list-style-type: none"> <li>• Improvement of the operation of the dumpsites</li> <li>• More transparency in the cost recovery (better governing)</li> </ul>	OYOWMA / Private contractors	Oyo State/LGA	2 to 5 years
<ul style="list-style-type: none"> <li>• Eliminate illegal dumping of waste both by waste producers and waste collectors</li> <li>• Productivity of the collection team improved</li> </ul>	Oyo State	OYOWMA / LGA	3 to 10 years
<ul style="list-style-type: none"> <li>• Cover all the territory</li> <li>• Structure future delegation markets</li> <li>• Improve professionalism in the SWM sector for private operators</li> </ul>	OYOWMA / LGA / Private contractors	Oyo State	4 years
			3 to 10 years



# INTRODUCTION

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## CONTEXT AND OBJECTIVES OF THE STUDY

Ibadan is the capital of Oyo State and the third largest city in Nigeria. The population of the metropolitan area of Ibadan is estimated at close to 3,5 million (IUFMP, 2014). Ibadan is a city that is growing amorphously and is characterized by traditional uncontrolled urbanization (Jacob, 2010). It is heavily overcrowded and the environment is largely degraded. In terms of its spatial spread, Ibadan sprawls over a radius of 12-15 km (about 700 km<sup>2</sup>) and it is still expanding uncontrollably. Due to the inability of the State Government to keep pace with infrastructure needs and the speed of growth, most parts of the city are unplanned and lack basic public services and facilities. There are only a few asphalted roads in the city.

The management of solid waste in Ibadan has been a challenge for decades. A large portion of the solid waste generated in the city is dumped on available plots of land, sidewalks, roads, streams, channels and drains – the collection rate is estimated at around 40% (Ogungbuyi, 2013). The clogging of the drainage system is a particular issue as Ibadan is highly exposed to flooding, and this exacerbates the health hazards during flooding.

Improving solid waste management (SWM) is a priority for the Oyo State Government. Various initiatives over the years have attempted to improve SWM in Ibadan. A pilot study commissioned in 1984 by the World Bank looked at how to improve various aspects of housing, living and environmental conditions of different slums in Ibadan (Fourchard, 2003). In 1988 another project also funded by the

World Bank initiated an urban renewal scheme in three neighborhoods in Ibadan. One of the areas of focus of the project was SWM and included the construction of a transfer station at Orita Aperin and a landfill at Aba-Eku (Ogungbuyi, 2013). The transfer station is no longer in use and the landfill has been converted into a dumpsite. The project did include an institutional and management study which eventually helped prepare the organizational and management structure of an authority to be responsible for SWM in Ibadan. In 1994 a Sustainable Ibadan Project (SIP) was launched with support from the United Nations Centre for Human Settlements (UN-Habitat) and the United Nations Environmental Programme (UNEP) Sustainable Cities Programme.

The SIP brought together stakeholders together to discuss key environmental issues with waste management identified as one of three key priorities, but this only led to limited improvements. The Governor of Ibadan, Abiola Ajimobi, has launched several initiatives to improve SWM (Adah, 2013) and most recently declared SWM part of his priorities at his inauguration in 2015 (Ajimobi, 2015). While progress has been made, SWM in Ibadan remains a major problem. While trying to improve SWM, there is also an additional challenge of reducing the burden on public finances.

Oyo State has recognized the need to improve the level of private sector participation (PSP) in order to overcome the technical and financial deficiencies currently associated with solid waste management

in Ibadan, and agrees that private investment in the sector can help increase efficiency, lower costs and improve the quality of service. The level of PSP in waste management in Ibadan is currently limited to waste collection and transportation.

The Governor of Oyo State has therefore requested the support from the World Bank to conduct a study on how the private sector can be more actively and effectively involved in SWM activities in Ibadan.

In this context, a team led by the World Bank which included consultants from Ernst & Young (EY) &

Egipe SARL undertook this assessment with the following objectives:

- Assess the existing practices, challenges and current performances of private sector in SWM in Ibadan;
- Identify challenges and gaps in terms of institutions and financing; and
- Design an action plan in order to involve the private sector more actively to improve the efficiency and quality of SWM in Ibadan.

## EXPECTATIONS FROM THIS STUDY

The reports focused analysis and recommendations is aimed to be used as a policy note to assist the Oyo State Government in improving the efficiency of the SWM sector for Ibadan but it is also expected to provide key inputs for other stakeholders involved in the waste chain.

The study will aim to compliment the activities undertaken as part of the Ibadan Urban Flood Management Project (IUFMP) specifically recommendations from this report will be integrated into the Solid Waste Masterplan which will be launched in 2017. The Solid Waste Masterplan will take a greater holistic assessment of the entire of Ibadan city to provide a more in-depth analysis to improve the SWM sector by identifying short, medium and long-term investments priorities over a 20-year period. Whilst it has been identified in this report the many challenges in the SWM sector, the report aims to provide four actionable priorities areas with suggestions of sequencing over the short, medium and long-term.

- The Contractual aspects of PSP in Ibadan, towards further transparency and predictability;
- Cost recovery, and its importance to sector and PSP viability; Infrastructure gaps, targeting the Government Officials, essential for sector efficiency, and reducing costs;
- Roles & responsibilities, including the broader institutional arrangements framing PSP that will bring transparency and focus;

The intended audience for this study is targeted towards policy makers and Government both local and state. The Bank team will directly engage with the following stakeholders Executive Council of Oyo State, the Oyo State House of Assembly, The Federal Ministry of Environment and Water Resources, OYOWMA to refine and include the report recommendations are integrated within the Oyo State Action Plans currently being developed.

In addition, to the named stakeholders and geographical study it is envisaged that the observations and recommendations for improving SWM to have relevance to not only other Nigerian cities but in a broader global context for cities that face similar challenges in SWM.

The main expectations of OYOWMA from this study are that it will contribute to improvements in the process of building the solid waste management capacities of Oyo State and of the private sector in Ibadan. It is also expected to help raise public awareness on waste management issues (OYOWMA, 2016). The Oyo State Waste Management Authority (OYOWMA) expects this study and the workshops conducted to form a basis to increase the role of PSP in solid waste management in Ibadan, to improve the quality of the service and to help OYOWMA to shift from operational waste collection to the regulation and the monitoring of the waste management operations.

# METHODOLOGY

To perform this assessment, The World Bank team first reviewed available reports and articles on the existing practices, challenges and current performance of SWM in Ibadan, and in particular the involvement of the private sector in SWM. This review was followed by field visits and workshops with a selection of key SWM stakeholders in Ibadan.

The literature review included technical reports and academic articles on waste management in Ibadan/Oyo State and more broadly across Nigeria and other cities in developing countries facing similar issues. Reviewing information on challenges at a national level as well as at a regional level has helped to identify the specificities of the situation in Ibadan. The team also examined reports from previous studies which characterize the nature of solid waste in Ibadan; provide estimates of the quantities of waste produced; describe existing collection systems and models; and, identify instances of PSP and challenges in effectively managing solid waste.

This review was followed by a series of field visits and workshops with a selection of key SWM stakeholders in Ibadan. A review of the relevant legislation was also performed by the local legal experts Ajumogobia & Okeke to understand the laws and statutes likely to affect PSP, and the possible impact on the aspirations of the Oyo State Government in relation to waste management in Ibadan (see Annex 1 – Legal).

World Bank PPP legal experts alongside with consultants from Pinsent Masons reviewed the existing waste collection and transport service agreement with private sector participants, and laid out potential provisions that could be contained within a waste services agreement with OYOWMA and

a private waste company (see Annex 2 – Potential Waste Services Agreement Provisions).

The assignment also included the organization and facilitation of discussions around options for increasing PSP and its performance at stakeholder events that were attended by the full range of actors in the waste chain (e.g. Oyo State Waste Management Authority (OYOWMA), law enforcement agencies and other relevant government entities, existing private refuse collectors, domestic and commercial waste generators, community associations, market associations, potential private investors, etc.).

All the data gathered during the course of the assignment was then analyzed to build a picture of the current state of PSP in SWM in Ibadan metropolitan area, and how it compares with leading practices in similar environments, bearing in mind the specifics of the Ibadan context.

The team's technical experts visited Ibadan February 11-14th 2015 to commence the study. During the visit the experts met with:

- Mr. Dayo Ayorinde (Project Coordinator, IUFMP) and others at the Oyo State Governor's Office – Ministry of Local Government (February 11th 2015);
- Mrs. M.A. Omonigbehin (Permanent Secretary of Environment and Habitat) and others at the Ministry of Environment (February 12th 2015);
- Mr. Tunde Ahmed, President of the Private Refuse Contractors, and Mr. Adeogun Olufemi, Vice-President (February 12th 2015);
- Mr. Moses A. Adedigba (GIS Analyst-Statistician, Oyo State Government) to exchange maps (February 12th 2015);

- Engr. Adebisi O.G. Adesina, Chairman of OYOWMA, and his team (February 13th 2015).

The following field visits were also subsequently conducted:

- Shadowing the Ministry of Environment's monitoring team during an Environmental Sanitation Exercise (February 12th 2015);
- Visits to two dumpsites (Lapite and Ajakan-ga) (February 13th 2015);
- Visit to the OYOWMA truck garage (February 13th 2015);
- Observations of the main collection routes of OYOWMA trucks (February 13th 2015);
- Visits to areas where private collectors operate (February 13th 2015);
- Study visit with OYOWMA and other State Government officials, to observe existing private sector operations in Lagos (15th December 2015).

The following interviews were conducted with private sector participants (see Annex 3 – Stakeholder interviews):

- Poroku & Co. (PSP operator in Oyo State);
- Development Planning Consortium Limited (PSP operator in Oyo State);
- Musiliu Asim Nigeria Company (PSP operator in Lagos State);
- Grace-X (PSP operator in Lagos State).
- Olugbenga Adebola, Chief Executive Officer, Richbol Environmental Services Ltd.
- Abubakar Sadiq, Project Coordinator, Karkara Rapid Development Limited
- Muiyiwa Adeniyi, Managing Director, Waste-Point Limited
- Boluwaji Oyewumi, Business Development Manager, Wecyclers
- Kirsten Jack, Senior Manager, Nigeria Infrastructure Advisory Facility (NIAF)
- Dr. Cornelius Shogunle, Chief Executive Officer, Highland Energy Solutions

Four stakeholder events and a roundtable were organized during the study. The main objectives of the meetings were to engage key stakeholders in open discussion on current challenges in the SWM sector in Ibadan as well as increase awareness and appreciation for potential for PSP in SWM in Ibadan. The following stakeholder meetings were held in Ibadan:

## **FEBRUARY 10<sup>TH</sup> 2015: FIRST STAKEHOLDER FORUM**

Topics covered:

- Presentation of the World Bank study
- The current waste management system and level of PSP and its performance
- Challenges in SWM and PSP and what are the key areas of improvement

## **JUNE 4<sup>TH</sup>-5<sup>TH</sup> 2015: SECOND STAKEHOLDER WORKSHOP (2 DAYS)**

Topics covered:

- PSP in SWM activities in Ibadan related to collection and urban facilities (Day 1)
- PSP in SWM activities in Ibadan related to landfills (Day 1)
- Presentation of the progress report and the challenges of the transition between the existing situation and a situation with long-term contracts (Day 2)
- The legal framework for SWM in Ibadan and for stakeholders in collection, transportation, sanitation and cleaning (Day 2)
- Roundtable discussion on the roles and responsibilities in SWM (Day 2)

## **OCTOBER 15<sup>TH</sup> 2015 THIRD STAKEHOLDER MEETING**

Topics covered

- Sensitization of stakeholders involved in the new OYOWMA waste collection measures
- Waste management cost recovery and cost reducing solutions including transfer stations, payment methods and the penetration of waste collection trucks into the inner districts
- PSP involvement in landfill management

## **NOVEMBER 25<sup>TH</sup> 2015: TRAINING ON PUBLIC-PRIVATE PARTNERSHIP ARRANGEMENTS FOR SOLID WASTE MANAGE- MENT IN IBADAN**

## **NOVEMBER 26<sup>TH</sup> 2015: INVESTOR ROUNDTABLE ON PSP IN SOLID WASTE MANAGEMENT ACTIVITIES IN IBADAN**

# GENERAL INFORMATION ABOUT IBADAN

Ibadan is located in South-Western Nigeria and is the capital of Oyo State. The city lies mostly on lowlands which are punctuated by rocky outcrops and series of hills. Elevation ranges from 150m in the valley area to 275m above sea level.

The area around Ibadan is drained by three important rivers: River Ogunpa, River Ona and River Ogbere and their several tributaries including River Omi, Kudeti, Alaro and Alapata. The combination of hills and river valleys provides a good drainage

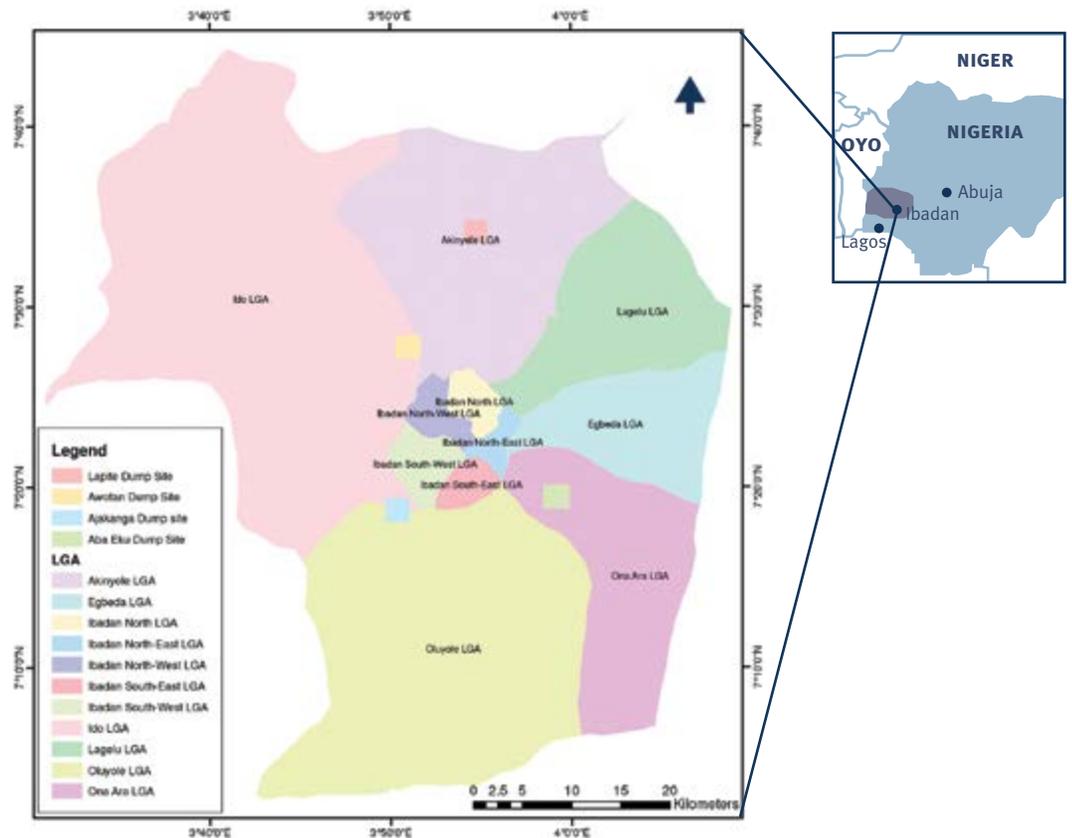


Figure 1: Map of Ibadan metropolitan area. Source: (Ogungbuyi, 2013)

for the city, but water courses are often blocked by solid waste coupled with the construction of structures along the river courses (IUFMP, 2014).

The climate is equatorial, notably with dry and wet seasons with relatively high humidity. The dry sea-

son lasts from November to March while the wet season starts from April and ends in October. Rainfall is about 1,150 mm per year on average. Average daily temperature ranges between 25 °C (77.0 °F) and 35 °C (95.0 °F), almost throughout the year.

## ADMINISTRATION AND DEMOGRAPHICS

Administratively, Ibadan comprises 11 Local Government Areas (LGAs): Ibadan Metropolis consists of five LGAs which cover the 'inner city': Ibadan North, Ibadan North-East, Ibadan North West, Ibadan South West and Ibadan South-East; the six remaining LGAs constitute the suburbs of the Metropolis. Local Governments Councils consist of the Executive Arm made up of the Executive Chairman, the Vice Chairman, the Secretary and the Supervisory Councillors.

According to the National Population Commission 2006 Census, the population of Ibadan metropolitan area was almost 2.6 million and the number of households 616,103 (see Table 1: Population, density and number of households in the Ibadan Metropolis Area. Source: (Ogungbuyi, 2013)). According to the Ibadan Urban Flood Management Project's 2014 report (IUFMP, 2014), the annual population growth is around 3.2%, which would mean that the population of Ibadan Metropolis was about 3.4 million in 2015.

**Table 2:** Population, density and number of households in the Ibadan Metropolis Area. Source: (Ogungbuyi, 2013)

Local Government Area	Population (2006)	Area in km <sup>2</sup>	Population density (people / km <sup>2</sup> )	Total households (2006)	Total households (2012 - projection)
Ibadan North	306 795	145.6	2 107	76 740	80 731
Ibadan North East	330 399	81.5	4 057	81 661	86 942
Ibadan North West	152 834	31.4	4 870	39 336	40 217
Ibadan South East	266 046	80.5	3 307	69 235	70 008
Ibadan South West	282 585	124.6	2 269	73 052	74 360
<b>SUB-TOTAL (URBAN)</b>	<b>1 338 659</b>	<b>463.3</b>	<b>2 889</b>	<b>340 024</b>	<b>352 258</b>
Akinyele	211 359	427.3	495	49 883	55 617
Egbeda	281 573	136.8	2 058	65 466	74 094
Ido	103 261	865.5	119	24 745	27 172
Lagelu	147 957	283.9	521	32 688	38 934
Oluyole	202 725	369.4	549	44 200	53 345
Ona Ara	265 059	577.1	459	59 097	69 748
<b>SUB-TOTAL (SEMI-URBAN / RURAL)</b>	<b>1 211 934</b>	<b>2660.0</b>	<b>456</b>	<b>276 079</b>	<b>318 910</b>
<b>GRAND TOTAL</b>	<b>2 550 593</b>	<b>3123.3</b>	<b>817</b>	<b>616 103</b>	<b>671 168</b>

The city can also be classified into seven morphological regions: the core, the older suburb, the newer eastern suburb, the new western suburb, the post-1952 suburb, the government-reserved area, and the government/private owned residential layouts and estates (Afon & Faniran, 2012). The aver-

age gross national income (GNI) per capita in Nigeria is around USD 2,760 (World Bank Group, 2014). No recent information was found for the average income of households in Ibadan.

# THE LEGAL AND INSTITUTIONAL FRAMEWORK RELATED TO SOLID WASTE MANAGEMENT

Solid waste management is dealt with under the environmental legal framework in Nigeria. This chapter presents an overview of applicable federal

and state policies and regulations applicable to solid waste management and private sector participation in particular.

## FEDERAL LEVEL

In Nigeria, the Federal Government is responsible for the environment and in accordance with Section 20 of the Nigerian 1999 constitution: *“The state shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria.”* The constitution also specifically assigns the responsibility of environmental sanitation to the Local Government (Omoleke, 2004).

The Federal Ministry of the Environment is responsible for environmental protection, natural resources conservation and sustainable development. Effective waste management is one of its main areas of focus. In 2005, it developed a set of policy guidelines on solid waste management (Federal Ministry of the Environment, 2005). The policy guidelines set out general objectives for solid waste management in Nigeria as well as defined the roles and responsibilities of Government at the Federal level, at the State level and at Local Government level. The following four solid waste management options are recommended within the policy guidelines:

1. By Local Government/Municipal Agencies
2. By Private Companies on contract with the LGA/Municipality
3. By Private Companies on contract with Home Owners
4. By public-private partnership (PPP)

Like much of Nigeria’s environmental laws and policies (Ijaiya & Joseph, 2014), the policy guidelines have never been effectively implemented, and there has not been any further development at federal level of private sector participation in solid waste management.

The National Environmental Standards and Regulations Enforcement Agency (NESREA), established in 2007 (and replacing the Federal Environmental Protection Agency), is the body charged with the enforcement of environmental laws, standards and regulations in the country including solid waste management. The National Environmental (Sanitation and Wastes Control) Regulations of 2009 fur-

ther provides the legal framework for environmental sanitation and waste management in Nigeria. These regulations provide general guidelines on the management of solid waste, and include a re-

quirement that the waste is handled by a person licensed to transport and dispose of solid waste in a designated waste management facility.

## OYO STATE LEVEL / IBADAN

Solid waste management in Ibadan metropolitan area is one of the key responsibilities of Oyo State. Ibadan is made up of the jurisdictions of several autonomous Local Government Areas (LGAs). While it is formally possible for states in Nigeria (or indeed cooperating LGAs, with state approval) to establish coordinating or planning authorities for cities, these cannot (for constitutional reasons) be recognized or considered as municipal governments with their own 'fiscal' or administrative identity (World Bank, 2015). By default, State Governments, such as Oyo State, assume the role of city managers, alongside all their other functions. The responsibility for solid waste management in Ibadan is held by three institutions, each with different responsibilities:

- The State Government and the (State) Ministry of Environment and Habitat
- The Local Governments
- The Oyo State Solid Waste Management Authority (OYOWMA)

The head of the executive branch, the State Governor is the final decision maker on SWM and PSP. OYOWMA is the operational authority for solid waste management in the city. The Authority is in charge of waste collection, registration and oversight of private sector operators, transportation of waste to disposal sites, management of disposal sites and policy implementation. It is led by a General Manager who reports to the Chairman of the Authority (Ogunyemi, Personal Communication, 2015).

### THE OYO STATE MINISTRY OF ENVIRONMENT AND HABITAT

At the State level, the Ministry of Environment and Habitat (MEH) in Oyo State was established by the Ministry of Environment and Habitat Law in 2011 with its responsibilities including the protection, maintenance and development of the environment. The functions of the MEH also include: establish-

ing and taking measures to ensure effective environmental structures in Oyo State for flood control through dredging, solid and liquid wastes collection and disposal, water and air pollution eradication, noise control and general sanitation.

The Ministry of Environment and Habitat is also responsible for raising awareness of waste management and other environmental issues in Ibadan, and across Oyo State. It oversees the weekly and monthly Environmental Sanitation Exercises, which among other things checks on the state of waste management in the Local Government Areas. During the Environmental Sanitation Exercises, citizens are expected to participate by cleaning their immediate environment. The role of the Ministry of Environment and Habitat during the sanitation exercises is to make sure that everybody participates, and there are sanctions for people who do not cooperate while the exercise is taking place. (EGIPE Sarl, 2015).

### THE LOCAL GOVERNMENTS

The duty of each Local Government is to participate in the economic planning and development of its area. The functions of Local Governments include the collection of taxes and fees, and as the provision and maintenance of waste management services. However, for several years the Local Governments in Ibadan did not have the means to effectively provide waste management services in their areas and therefore, the responsibility was transferred to OYOWMA and the Local Governments handed over their waste management equipment to OYOWMA (EGIPE Sarl, 2015). In October 2015, the roles were reversed and OYOWMA handed back the waste management trucks to the Local Governments. The Local Governments currently collect waste within their jurisdictions (at the time of writing this report).

The Local Governments in Ibadan had partially funded OYOWMA in return for the solid waste management services provided. According to

Ogungbuyi (2013), the Local Government Councils also have the following roles:

- Enact appropriate legislative instruments and establish necessary sanctions and enforcement mechanisms for efficient service delivery
- Recruit, train, and retrain staff for efficient service delivery
- Establish a consultative forum with members of the public to build consensus on appropriate strategies for waste management
- Develop information, education and communication materials on solid waste handling techniques at household level
- Promote private sector participation in the delivery of waste management options

OYOWMA is also responsible for granting and issuing waste collection operation permits to private refuse contractors after ensuring that they satisfy stipulated conditions. The operating permits have to be renewed every year if the contractors have not been found to contravene the rules and regulations prescribed by OYOWMA. OYOWMA monitors and supervises the activities of the private refuse contractors (OYOWMA, 2016).

In the future, OYOWMA would like to reduce and ultimately stop their operator activities, and revert to its role as a regulator (i.e., monitor and regulate waste management activities). In this context, they would retain some capacity to manage waste, but only in a supporting role. For example, in emergencies, where there is a need to replace a private contractor until a new contractor is in place. (EGIPE Sarl, 2015).

The graphic below represents the different legal structures and their roles regarding the institutional framework for solid waste management, as defined by legislation.

## THE OYO STATE SOLID WASTE MANAGEMENT AUTHORITY

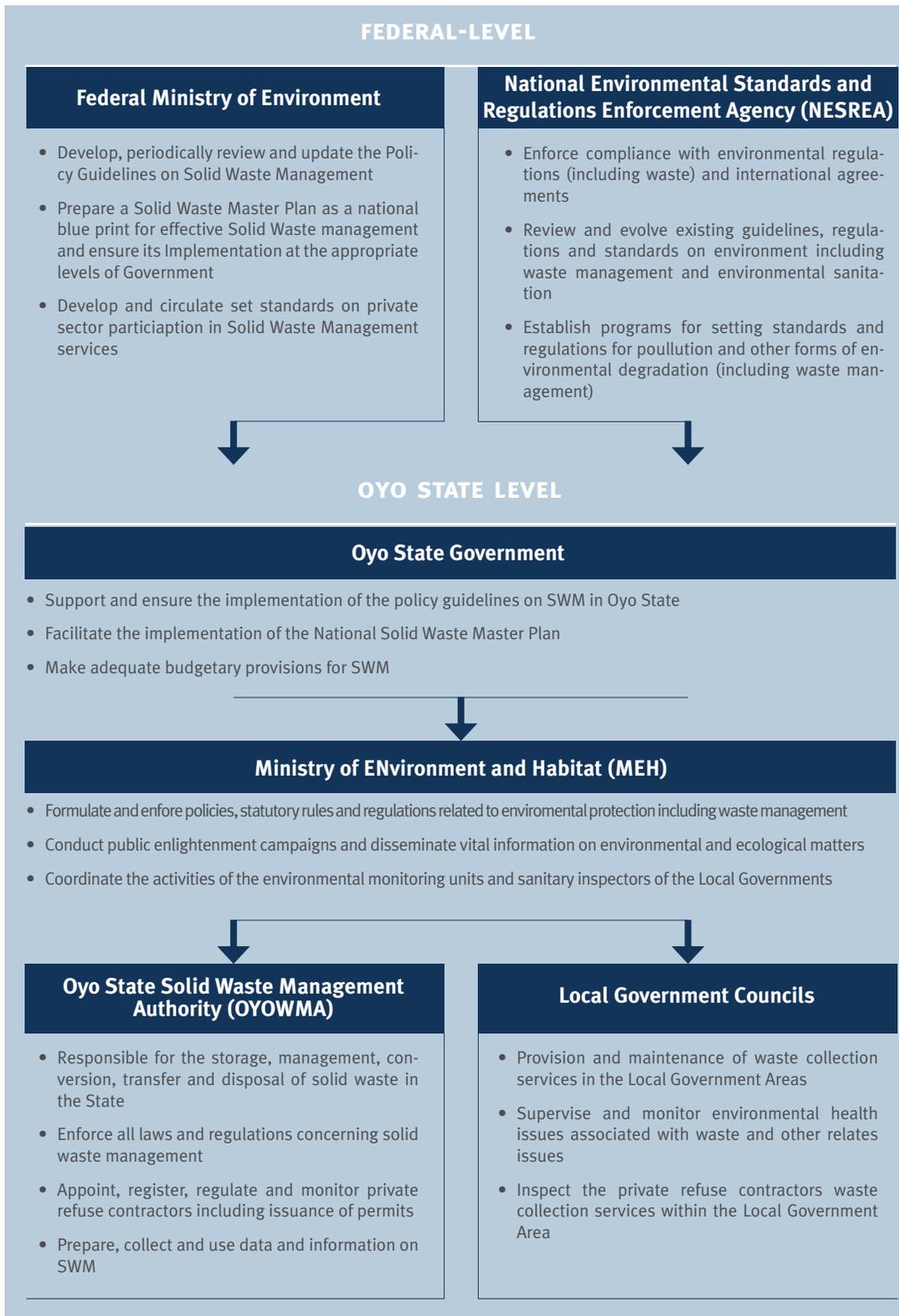
The Oyo State Solid Waste Management Authority (OYOWMA) is the main regulator of waste management activities in Ibadan.<sup>1</sup> Although OYOWMA currently operates waste collection and transfer services, it is not meant to. With the transfer of waste collection to the Local Governments in October 2015, OYOWMA is less involved in the waste collection operations, but still removes waste from all areas immediately along the main federal expressway that transverses the city, i.e. the toll gate to Ojoo end of the expressway, and intervenes when the LGAs are not able to perform their waste collection functions in their jurisdiction. In addition to this, OYOWMA manages the four dumpsites in Ibadan. The stated main role of OYOWMA is to set the rules related to waste management, enforce them and verify that they are well-respected.

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<sup>1</sup> OYOWMA was referred to as Ibadan Waste Management Authority (IWMA) between 1998 and 2008.

Each of these public actors has a role to play in improving the conditions for PSP. The following table

below summarizes the mandates and actual activities in SWM of each of these actors:



**Figure 2:** Legal structures for waste management in Ibadan

**Table 3:** Overview of public institutions involved in solid waste management in Ibadan

INSTITUTION	MANDATE RELATED TO SWM	ACTIVITY IN SWM
<b>Oyo State Government, Ministry of Environment and Habitat</b>	<ul style="list-style-type: none"> <li>• Formulate and enforce policies, statutory rules, and regulations related to waste management</li> <li>• Establish and take measures to ensure effective environmental structures in the State for solid waste management</li> <li>• Conduct public enlightenment campaigns and disseminate vital information on environmental and ecological matters</li> <li>• Coordinate the activities of the environmental monitoring units and sanitary inspectors of the Local Governments</li> <li>• As the Oyo State Environmental Protection Agency (OSEPA) structure is not yet in place, the Pollution Control Unit of the Ministry is responsible for monitoring and controlling the disposal of solid, gaseous, and liquid waste generated by both government and private facilities in the State.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring OYOWMA</li> <li>• Establishment and enforcement of environmental policy and standards</li> <li>• Public awareness raising</li> </ul>
<b>Oyo State Solid Waste Management Authority (OYOWMA)</b>	<ul style="list-style-type: none"> <li>• Responsible for the storage, management, conversion, transfer and disposal of solid waste in the State</li> <li>• Register refuse contractors and renew such registration annually</li> <li>• Charge the refuse contractors registration and renewal fees (amounts set by the Authority periodically)</li> <li>• Regulate and monitor the activities and operations of the refuse contractors in the State</li> <li>• Make regulations subject to the approval of Oyo State Executive Council</li> </ul>	<ul style="list-style-type: none"> <li>• Street cleaning Collection</li> <li>• Transport</li> <li>• Regulation</li> <li>• Landfill management</li> <li>• Private contractors registration and monitoring</li> </ul>
<b>Local Governments</b>	<ul style="list-style-type: none"> <li>• Collect taxes and fees from the Local Government Areas</li> <li>• Responsible for waste collection and transport in their own jurisdiction</li> <li>• Supervise and monitor environmental health issues associated with waste and other related issues</li> <li>• Inspect the private refuse contractors waste collection services within the Local Government Area</li> <li>• Funded OYOWMA, when it was responsible for waste collection operations</li> </ul>	<ul style="list-style-type: none"> <li>• Had delegated all solid waste management activities to OYOWMA until October 2015</li> <li>• Has since been responsible for waste collection and transport</li> </ul>
<b>Other stakeholders (YES-O,<sup>2</sup> market associations)</b>	<ul style="list-style-type: none"> <li>• Help with awareness-raising efforts in relation to potential sanitation problems related to waste management and the importance of waste collection.</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness raising about waste generation and collection</li> </ul>

<sup>2</sup> YES-O (Youth Empowerment Scheme of Oyo State) Cadets are supervised by the Environmental Health Officers

Besides the key institutions listed in the table above, other institutions in Oyo State also have a stake in solid waste management and private sector participation in Ibadan:

- The Oyo State Ministry of Physical Planning and Urban Development is responsible for formulating and implementing State policies for urban and regional planning, physical development of the State including the spatial location of infrastructural facilities. It also includes initiating, formulating and implementing strategies for the development of urban and rural settlements, processing and granting planning approval and clearance to prospective developers and various land users in Oyo State. Although not active in relation to solid waste management activities, it is potentially responsible for the construction and operation of dumpsites / landfills and transfer stations.
- The Oyo State Ministry of Lands And Housing and the Office of the State Surveyor-General are also important stakeholders

in waste management in Ibadan. In particular, the Office of the Surveyor-General is to provide up-to-date and purposeful geographic information on Ibadan. .

- The Oyo State Governor has a Special Adviser on Investment Promotion & Public-Private Partnerships (PPP), Ms. Folakemi Akinleye, and she has a role to play when developing PPPs.

The Oyo State Environmental Protection Agency (OSEPA) was established by law in 2012 to be an integral part of the Governor's office for the purpose of environmental protection, but it is not yet in operation. The OSEPA is expected to establish and recommend acceptable safe methods of the collection and disposal of hazardous and toxic waste in Oyo State, however, the Pollution Control Unit of the Ministry of Environment and Habitat exercises the functions and responsibilities of the Agency.

Please see Annex 1 for the detailed legal framework for solid waste management in Nigeria and in Oyo State (Ibadan)

## OPERATION OF CURRENT CONTRACTS WITH PRIVATE SECTOR PARTICIPANTS

Private waste collection contractors are required to submit an application to OYOWMA for registration as a Private Refuse Collector. The applicant must demonstrate financial capacity and provide information on key staff, equipment and evidence of similar work successfully performed in the past. The applicant must also own a refuse compactor truck (10 – 30 metric tons). Private contractors can apply for three categories of permits according to the type of waste producer – each category entails a different application fee:

- Domestic or residential waste collection (e.g. waste from households) – ₦2,500 (USD 12.50)
- Commercial and institutional waste collection (e.g. waste from offices, banks, restaurants, etc.) – ₦5,000 (USD 25.00)
- Industrial waste collection – ₦10,000 (USD 50.00)

Based on the application OYOWMA will then issue an operation permit for the collection and disposal of waste from designated service areas. It is not clear how the process of allocating service areas to private contractors is done.

The operation permit grants the private contractor the exclusive right to collect waste management fees from the waste producers in the designated service area, and in return the private contractor commits to collecting waste in the area and transporting it to one of the four dumpsites in Ibadan. The waste services agreement does not define the waste services in detail, but does specify that the private waste operator must:

- properly educate and train its staff on proper handling of waste;

**Figure 3:** Administrative requirements to be submitted with the application for waste operation permits for Private Refuse Contractors in Oyo State

**Private contractors must submit an application form with the following:**

- 1. Evidence of registration of company with Corporate Affairs Commission;**
- 2. Evidence of registration of business premises with the Ministry of Trade and Investment, Oyo State;**
- 3. Copies of the company's financial records for the three years;**
- 4. Tax clearance of two directors of the company for three years consecutively;**
- 5. Evidence of ownership of at least one refuse compactor truck of 10-30 metric tons capacity;**
- 6. Submission of the company's profile containing information on key staff, operational bank details and evidence of experience with similar work in the past; and,**
- 7. Evidence of registration with the Environmental Health Officers Registration Council of Nigeria.**

- only use vehicles approved by OYOWMA for waste collection and transport, and ensure that any vehicle used is properly covered with tarpaulin to avoid waste falling by the roadside during transport;
- maintain a proper record of their waste discharges at the approved sites, and also of waste discharges by their customers (copies of such records shall be submitted to the Authority on a monthly basis); and,
- have adequate working tools and equipment.

Failure to carry out the duties and comply with OYOWMA's guidelines, can lead to a fine and / or revocation of the operation permit.

There are standard tariffs fixed by OYOWMA that the private contractors can charge for their waste collection services. The waste collection fees are depending on the area in Ibadan - the metropolitan area is divided in High Income, Middle Income and Low Income areas. Furthermore, all the waste collection categories (i.e. domestic, commercial and industrial) have a minimum and maximum fee, but it is not transparent how these are set by the private contractors.

The private operators are entitled to 80% of the monthly waste collection charges collected from waste producers in the designate area, while the 20% balance of the charges should be paid to / or retained by OYOWMA for its administrative charges and maintenance of its facilities such as the dumpsites. Oyo State compels waste producers to patronize the private waste contractors, but does not offer any guarantees for private operators, when waste producers do not pay the waste management fees. The private contractors are responsible for collecting waste fees to ensure revenue. They must also keep up to date records of the fees collected.

The operation permits issued by OYOWMA are valid for only one year at a time and is renewable annually subject to satisfactory performance and payment of the annual renewal fee.

## ASSESSMENT OF THE EXISTING LEGAL AND INSTITUTIONAL FRAMEWORK

The legal and institutional framework for solid waste management - and private sector participation in particular - is generally well established, but Oyo State lacks the capacity to enforce existing regulations adequately and develop its waste management activities. Oyo State already engages the private sector in waste collection and transport activities, but could expand this to include other waste management activities such as street cleaning, resource recovery (e.g. waste-to-energy, recycling, etc.) and management of landfills.

An analysis of the legal framework by the legal experts did not reveal any inconsistencies in the legal framework (see Annex 1 – Legal ). Despite Lagos being more advanced with regards to private sector participation in SWM, no major differences were identified in the legal framework of Oyo State and Lagos State. It is however a major problem for the

private sector participants to ensure revenue from waste collection fees when waste producers do not pay. On one side, Oyo State does not have the capacity to monitor and adequately enforce the regulations that compel waste producers to dispose of their waste correctly and also to pay for waste management; and on the other side, ensure that private contractors perform their services properly.

As there are differences in neighborhoods, some service areas are more lucrative than others. How private contractors are allocated service areas is however not clear. Ideally contract awards should be done after a competitive procurement process. The duration of licenses of only one year and uncertainty regarding the award of service areas dissuades private sector participants in any long-term investments to improve waste management services and their efficiency.

# THE CURRENT SITUATION OF SOLID WASTE MANAGEMENT

The management of solid waste in Ibadan has been a challenge for decades, as highlighted by a 'Waste to Wealth' initiative that was introduced several administrations ago (Sridhar & Hammed, 2014). There are three different areas of the city:

- **The planned areas:** The residents of these areas are in the medium to high income bracket, and they are able to pay for waste collection. These areas are accessible by trucks and are served by private operators.
- **The unplanned and new areas:** The populations of these areas have the lowest incomes and they are perceived as not being able to afford to pay for waste collection services. As a consequence, the populations in these areas generally do not pay for waste collection services. Some of these areas do not receive any government services. They are currently not served by waste collectors as their roads are unpaved and there are parts not accessible by waste collection trucks. Solid waste is often dumped into the surrounding bushes and along footpaths. The process for waste collection is different in these areas as people have to bring their waste to the closest paved road for waste collection. Collection is done at regular intervals during the week. There is also an Environmental Sanitation Exercise on the last Saturday of the month for residents, which involves waste collection.

- **The markets:** Waste generated in markets is collected both by private and public operators through the arrangements outlined above (EGIPE Sarl, 2015). There is also an Environmental Sanitation Exercise every Thursday between 8 am and 10 am for the markets (IUFMP, 2014).

OYOWMA, the Local Government Areas (LGAs) and private operators together provide waste collection services within the city. Private contractors are responsible for waste collection from designated residential, industrial and commercial areas, while LGAs are in charge of areas not covered by the private contractors within their jurisdiction. OYOWMA is responsible for the public areas along the main federal expressway that transverses the city.

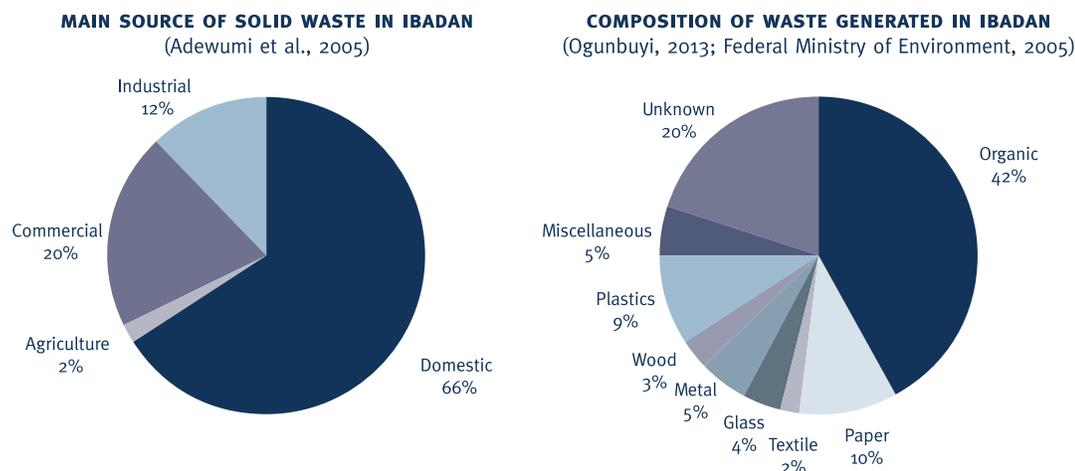
The role and responsibility of waste collection changed during the project. At the start of the project OYOWMA was responsible for all public areas in the city, but in October 2015 the responsibility for public waste collection was transferred back to the LGAs. This also meant that most of the waste collection trucks and equipment was also handed back to the LGAs.

## GENERATION AND COLLECTION

### QUANTITIES OF WASTE GENERATED AND COLLECTED

Waste in Ibadan can be classified into four major classes: domestic waste; commercial waste; industrial waste; and, public and institutional waste

(Ogungbuyi, 2013). Babayemi and Dauda (2009) identify in addition to the above-mentioned waste streams, agricultural waste and waste from educational establishments.



**Figure 4:** Source and type of waste in Ibadan (average percentages by weight)

The composition of solid waste generated in Ibadan can vary but is mainly composed of organic waste (accounting for 42% by weight), paper (10%), textile, glass, metals, wood, plastics and (Ogungbuyi, 2013). According to Moruff (2014), organic waste including leaves and vegetable peelings constitute the bulk of the waste because raw food products are brought to the city unprocessed. The amount of tins, metals, paper, ash, dust and stones in the waste are increasing because of the changing consumption patterns of people in the city.

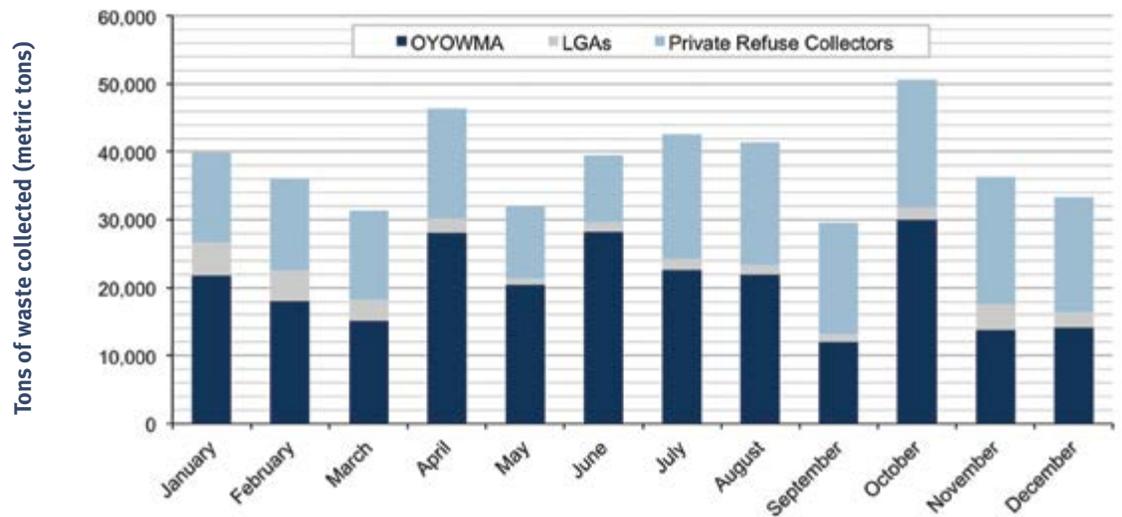
The quantity of waste generated in Ibadan Metropolis in 2012 is estimated at about 635,000 tons – or 0.55 kg/person/day (Ogungbuyi, 2013).<sup>3</sup> According to Moruff (2014), it is difficult to determine the exact quantities of waste generated in Ibadan, due a lack

of data and studies. Reliable estimates of the quantity of waste generated generally requires systematic and accurate data collection (e.g. by weighing the trucks coming in and out of the dumpsites), and depends on the collection rate in the various districts.

OYOWMA provided the figures below for waste collection (both public (OYOWMA and Local Government Areas) and public collection) in the city in 2015 (OYOWMA, 2016):

According to these figures, the average amount of waste collected per month in 2015 was 38,250 tons. This corresponds to just about 0.25 kg/person/day collected (assuming that the population of the city was 3,5 million in 2015). If the high estimate of

<sup>3</sup> Estimates range from 0.30 – 0.71 kg/person/day. Adewumi (2005) estimated that 0.71 kg/person/day of solid waste were generated in Ibadan.

**Table 4:** Quantity of waste collected in 2015. Source: OYOWMA

0.7 kg/person/day of waste generated is assumed (Adewumi, 2005), the collection rate is about 35%. This is in line with Ogungbuyi's (2013) estimate of the collection rate to be around 40%.

About 40% of the total waste collected was done by private contractors, an increase from 2014, where only about 30% of waste was collected by the private sector. The Local Government Areas (LGAs) were responsible for about 6% of the waste collected, while over 50% of the waste collected in 2015 was done by OYOWMA. As the responsibility of waste collection has returned to the LGAs, the share of waste collected by LGAs are now much higher and OYOWMA is only responsible for a small fraction of the waste collected.

As only very limited data on waste collection are recorded, it was not possible to provide more information on collection rates or the current performance of waste collection in Ibadan.

## FORMS OF WASTE COLLECTION

### COLLECTION FROM PUBLIC SECTOR

OYOWMA collects refuse day and night (because of traffic, the Authority also picks up waste between 9 pm and 6 am) and is responsible for the collection of 68% of the city's waste (EGIPE Sarl, 2015).<sup>4</sup> The city is heterogeneous with different kinds of districts and roads in various states of degradation. Therefore, the terrain is not conducive to the efficient use of packer trucks, and requires the use of different means of collection. At present, the waste collection methods being practiced depend on the ease of accessibility by motorized vehicles.

Ogungbuyi (2013) identified four prevalent forms of waste collection in Ibadan: house-to-house, communal depots, block system and shop-to-shop. In addition to these forms of collection, commercial and industrial waste collection must be included (Omoleke, 2004). A study on dumpsite and waste collection points of 140 residents (carried out in 2013 in Ibadan) identified the following five different methods of solid waste disposal based on a questionnaire:

<sup>4</sup> This practice may have changed with LGAs now responsible for their own waste collection.

- government/dumpsite waste collection point;
- private drums;
- bury/burn by households themselves;
- dumped into rivers/drainage and at road-sides.

The study also showed that 41% of the waste producers used government waste services and paid an average monthly charge of ₦500 (USD 2.50) while 10% made use of private refuse contractors and paid an average monthly charge of ₦2,000 (USD 10.00) (Oguntayo & Obayelu, 2013).

House-to-house waste collection is carried out in areas with road networks, but these services usually require some form of financial commitment. Ogungbuyi (2013) estimates that only about 16% of households dispose of their waste at approved public dumpsites.

The poorest mostly resort to sporadic and indiscriminate dumping of their wastes on available plots of land, sidewalks, roadways, streams, channels and drainages areas (Ogungbuyi, 2013). It has been reported that more than 70% of the refuse generated in the city is disposed in this way. In addition to the typical negative impacts of poor waste management, the blockage of waterways and the drainage system is a particular issue in Ibadan as this causes flooding as well as health hazards from human contact with untreated waste.

There is no reliable data on the quantity of inert waste such as construction and demolition waste, e.g. sand, concrete, etc., being generated or collected. Besides construction and demolition waste being used to fill pot holes in the dumpsites, there are also currently no specific ways of managing this type of waste. According to OYOWMA, construction and demolition waste is not common enough to require its own specific means of waste management.

#### Notes from observations of waste collection practices made during field visits

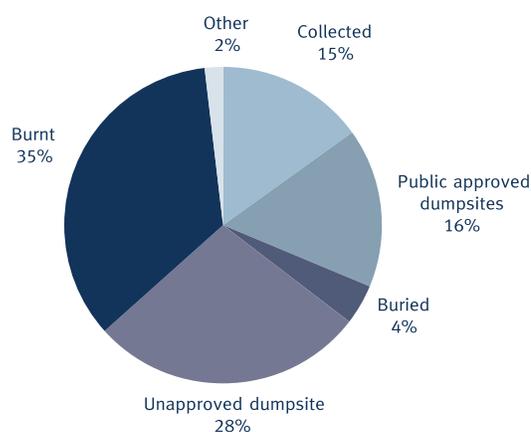
During the first field visits in February 2015, many sweeper teams were in operation. Some sweeper teams were accompanying the OYOWMA waste collection truck to help load the waste from containers and in the middle of the streets. Other sweeper teams were working on their own to clean the street. In both cases, the sweepers did not always have appropriate containers to store the waste collected and transfer it to the waste collection ser-

vices. In some cases waste collected on the road was dumped into river beds by the sweeping teams.

### PRIVATE WASTE COLLECTORS

The private sector collects waste from residential, commercial and industrial premises that are ready to pay for their services (OYOWMA, 2016). They are responsible for the collection of about 40% of the volume of the waste reaching the dumpsites.

#### HOUSEHOLD SOLID WASTE DISPOSAL METHODS IN IBADAN (Ogungbuyi, 2006 ;2013 National Population Commission Survey)



**Figure 5:** Household solid waste disposal methods in Ibadan (based on weight) (Ogungbuyi, 2013)

Three types of waste are collected by private sector operators:

- Industrial waste (every day);
- Commercial waste (about three times a week; up to four complete loadings of one truck in a day for this kind of waste);
- Household waste (about twice a month; one or two complete loads for one truck in a day, as there are many more stops than with commercial waste).

When registering with OYOWMA, the private operators have to specify whether they are collecting from commercial facilities, from industrial facilities or from households. Each operator collects one type of waste; so there are contractors collecting only industrial, commercial or household waste. In addition, private contractors also collect waste from special events such as parties, or on special request.

There is an association of private waste collectors, the Private Refuse Contractors Association. According to the President of the Association, there



**OYOWMA employees collecting waste from the middle of the road**



**OYOWMA loading a truck with waste left at the side of the road**

are about 200 contractors in the association of which 150 work in Ibadan. According to OYOWMA, there are 317 registered private contractors (218 domestic refuse contractors, 95 commercial and 4 industrial). There are also 50 private contractors which are not members of the association as they are newly established companies, but may join the Association at in the future. Among these contractors, some companies own up to 5 trucks while others do not own any trucks, but rather rent them from other members who have the capacity to rent out trucks. The contractors only buy second hand trucks, and in some instances, they finance the purchase of their trucks through the Cooperative Society of the Association. This financing is provided at low interest rates. The Association also supports its members by providing back-up trucks in case of a breakdown. This is also done by borrowing from members who have the capacity to spare a truck for a short time period. The private contractors are

experienced in maintaining their trucks and they only buy trucks for which they can easily find spare parts (Mercedes, Volvo, DAF, etc.).

Some of the contractors have been working in waste management for up to 20 years. They have a clear vision about the vehicles that would be most adapted to their situation, but are limited in their ability to raise the finance to buy new trucks.

It should be noted that the private sector only operates in the collection and transportation of waste, and is not involved in other aspects of waste management. Furthermore, according to the private contractors, they do not carry out waste collection at night mainly because the dumpsites are closed at night, and also because of security issues. This is in contrast with OYOWMA as the Authority collects waste between 9pm and 6am (EGIPE Sarl, 2015).

# RESOURCES AND FACILITIES OF THE PUBLIC SECTOR IN CHARGE OF SOLID WASTE MANAGEMENT

## FINANCIAL RESOURCES

Limited information was provided on how exactly solid waste management and street cleaning is financed.<sup>5</sup> According to OYOWMA, the majority of financing of solid waste management in Ibadan comes from the Oyo State Government, and the Local Governments contribute less than 13% of the total public funding.

**Table 5:** The OYOWMA annual budget in 2014.

Source: OYOWMA.

SOURCE OF FINANCING	COSTS ( ₦/ YEAR )	COSTS (USD/YEAR)
State Government	1 284 164 800	6 453 095
Local Governments	198 000 000	994 976
<b>Total financing</b>	<b>1 482 164 800</b>	<b>7 448 071</b>

According to a World Bank report (2015), each of Oyo State's 33 Local Governments, irrespective of whether they are urban or rural and irrespective of the amount of waste generated in their individual jurisdictions, provide monthly and equal "contributions" (₦500,000 (USD 2,500) per month. Assuming that Ibadan and other cities in Oyo State generate larger amounts of solid waste than other parts of the State, the equal and monthly Local Government contribution amounts to the rural and semi-urban Local Governments subsidizing SWM in the State capital.

By virtue of the OYOWMA Law, the Waste Management Authority has the power to charge and to collect fees from private sector waste collectors for their registration and for the subsequent renewal of their licenses. Section 6(1) of the OYOWMA Law provides that OYOWMA shall be responsible for maintaining sanitary landfill sites around Oyo State and can charge fees per month and per truck to the private collectors (from ₦2,500 (USD 12.50) to ₦3,000 (USD 15.00)). According to the Private

Refuse Contractors Association, the private waste collectors access the dumpsites for a fixed fee depending on their category:

- Industrial: ₦5,000 (USD 25.00) per month;
- Commercial: ₦3,500 (USD 17.50) per month;
- Household: ₦2,500 (USD 12.50) per month.

According to OYOWMA, the actual revenue generated from the private sector, e.g. the PSP licenses, the dumping charges and fines, is about ₦11.8 million (USD 59,500) annually.

According to OYOWMA, the annual budget of operational waste management activities in Ibadan (2014) is as follows<sup>6</sup>:

The staff costs above cover only the permanent staff (about 70 persons) at OYOWMA. The cost of temporary staff (about 1,400) is ₦45,432,000, according to OYOWMA. The cost of equipment, fuel and maintenance also includes the cost of the cleaning. Furthermore, the above annual budget numbers are not sufficiently detailed and it is not clear whether they take depreciation costs into account. It is therefore difficult to determine the cost per ton of waste collection in Ibadan.

Waste collection costs are estimated at about ₦4,500 (USD 22.50) per ton for the most productive trucks (e.g. rear loader packer trucks) and between ₦5,600 (USD 28.00) and ₦6,700 (USD 33.50) per ton for the trucks performing in the low productivity areas<sup>7</sup>.

<sup>5</sup> All the available information that was disclosed by OYOWMA is presented in this section.

<sup>6</sup> The budget was for when OYOWMA was responsible for waste collection in the LGAs.

<sup>7</sup> Based on Egipe's experience and on the market prices in countries with per capita GDP similar to Nigeria.

**Table 6:** The OYOWMA annual budget in 2014. Source: OYOWMA.

<b>SOURCE OF FINANCING</b>	<b>COSTS ( ₦/YEAR )</b>	<b>COSTS ( USD/YEAR )</b>
Registration of Private Refuse Contractors	1 355 000	6 809
Revalidation of old permit and change of title	889 000	4 467
Refuse dump usage charges (paid by the Private Refuse Contractors)	8 663 472	43 535
Fines for contravention of environmental laws	937 500	4 711
<b>Total</b>	<b>11 844 972</b>	<b>59 523</b>

**Table 7:** The OYOWMA operation costs. Source: OYOWMA.

<b>COST LINES</b>	<b>COSTS ( ₦/YEAR )</b>	<b>COSTS ( USD/YEAR )</b>
Staff costs (Salaries)	42 200 000	212 060
Equipment costs	669 000 000	3 361 812
Truck fuel and maintenance	174 164 800	875 201
Other costs (Clean Street Initiative, etc.)	596 800 000	2 998 998
<b>Total costs</b>	<b>1 482 164 800</b>	<b>7 448 071</b>

These costs per ton are not really cost-effective especially given the low cost of labor in Nigeria, but are comparable with costs observed in other countries with similar per capita GDP.

It was noted that due to limited budgets, the public sector in Ibadan does not have adequate capacity to handle the increasing amount of solid waste. The Local Government Councils are financially handicapped. It is also noted that the private collectors are not able to access the finance they need to improve the quality and efficiency of their operations.

## HUMAN RESOURCES

According to OYOWMA, the most recent figures for the number of staff employed by the authority are as follows:<sup>8</sup>

**Table 8:** Number of staff employed by the authority in each category – Source: OYOWMA

S/N.	DESIGNATION	NUMBER	REMARK
1.	Executive Chairman	1	POLITICAL APPOINTEE
2.	General Manager	1	PERMANENT STAFF
3.	Directors and Sectional Heads	10	PERMANENT STAFF
4.	Administrative Staff	52	PERMANENT/TEMPORARY STAFF
5.	Operational Staff 4(i-xxi)	1,471	
i.	Environmental Health Officers	22	PERMANENT/TEMPORARY STAFF
ii.	Technical Officers	5	PERMANENT STAFF
iii.	Works Superintendents	3	PERMANENT STAFF
iv.	Foreman	1	PERMANENT STAFF
v.	Truck Drivers	19	PERMANENT STAFF
vi.	Driver Mechanics	13	PERMANENT STAFF
vii.	Drivers	9	TEMPORARY STAFF
viii.	Plant Operators	3	TEMPORARY STAFF
ix.	Electrician	1	TEMPORARY STAFF
x.	Security	28	TEMPORARY STAFF
xi.	Fuel Attendant	1	TEMPORARY STAFF
xii.	Dump Attendants	20	TEMPORARY STAFF
xiii.	Vulcanizers	4	TEMPORARY STAFF
xiv.	Welders	2	TEMPORARY STAFF
xv.	Panel Beater	1	TEMPORARY STAFF
xvi.	Battery Chargers	3	TEMPORARY STAFF
xvii.	Mechanics	17	TEMPORARY STAFF
xviii.	Enforcement cadets	38	TEMPORARY STAFF
xix.	Motor Boys	68	TEMPORARY STAFF
xx.	Motor Girls	73	TEMPORARY STAFF
xxi.	Sweepers	1,160	TEMPORARY STAFF
	<b>Total</b>	<b>1,562</b>	

There are gaps in the institutional arrangements, expertise and people to run solid waste management activities in Ibadan efficiently. This is based on the view that although the workers have relevant qualifications to perform their work, they need additional training, and the provision of such training is yet to be institutionalized.

Furthermore, during the field visits, it was noticed that many sweepers were wearing OYOWMA uniforms but without any specific sweeping equipment. According to OYOWMA, the sweepers were provided with personal protective equipment, but these were not being used by the sweepers.

<sup>8</sup> This information was provided when OYOWMA was responsible for waste collection in the LGAs. Some of the staff may have been transferred back to the LGAs after the change in policy in October 2015.

## EQUIPMENT AND VEHICLES

The Local Governments handed over their trucks to OYOWMA in March 2013 in line with the transfer of responsibilities of operational waste collection to OYOWMA. However, in October 2015, OYOWMA handed back the trucks over to the Local Governments reducing its fleet from 70 units to 26 units. OYOWMA currently owns the following trucks for waste collection:

1. Mitsubishi Canters (Ro-Ro) - Side Loading – 10 units;
2. Leyland Skip Eater Compactors - Rear Loading – 3 units;
3. Sterling Goliath Compactors - Rear Loading – 9 units;
4. Leyland Ro-Ro - 2 units;
5. Toyota Tipper – 1 unit;
6. Bedford Tipper – 1 unit.

The Local Governments own a minimum of the following trucks for waste collection:

1. Leyland Skip Eater Compactor Rear Loading – 20 units;
2. Sterling Goliath Compactor Rear Loading – 15 units;
3. Leyland Ro-Ro – 2 units;
4. Toyota Tipper – 1 unit;
5. Bedford Tipper – 2 units;
6. Mitsubishi Canter Ro-Ro – 20 units;
7. McNeilus Compactors - Rear Loading – 11 units belonging to Local Government councils;
8. Ford Compactors - Rear Loading – 33 units belonging to Local Government councils.

Previously, there were about 229 containers (2 to 3 m<sup>3</sup>) scattered around the city for communal waste (EGIPE Sarl, 2015), but these have been withdrawn to pave way for the private waste collectors.

Normally, one truck can handle waste collection for 7,000 habitants under public operation or 10,000 habitants under private operation. Therefore, for a

city the size of Ibadan, at least 400 - 570 collection trucks would be needed.

In the current context, given the state of the vehicles, their number and the state of the roads, the estimated 70 trucks owned by OYOWMA and the Local Governments are not enough to carry out proper waste collection in the whole city.

During the field visits in February 2015, rear loading packer trucks in action without lifting mechanisms and Ford pick-ups equipped with side loading buckets without lifting mechanisms or waste packer trucks were in operation, but none of the other trucks.

The vehicles do not seem very old but are generally in a poor state of maintenance. Moreover, the state of the roads is a major factor for breakdown and can explain the poor condition of the vehicles. Normally a waste truck should be operational for about 25,000 working hours; however it is very hard to achieve that level of longevity while using the vehicles in the poor road conditions in Ibadan. The heterogeneity of the fleet is also a major issue as it is not possible to maintain a set of spare parts and specific competences for that many different types of vehicles.

Furthermore, during the field visit, visits were made to OYOWMA's two truck garages located in the city center. The garages are quite large but cluttered with disabled vehicles (whether waiting to be repaired or scrapped). There are no weighbridges, and besides servicing pits, there is not much equipment for vehicle maintenance.

OYOWMA's maintenance teams seem to encounter several issues in maintenance, servicing and repair of waste collection vehicles. There were two trailer trucks in the garage that were not used anymore. Furthermore, the trailers used are not adapted to tipping in dumpsites (unstable soils) or for driving on roads in a bad state (e.g. the access road to the dumpsites).



**Disabled packer truck**



**OYOWMA Headquarters garage**



**RoRo containers**



**Semi-trailer truck**

Source: (EGIPE Sarl, 2015)

## INFRASTRUCTURE AND FACILITIES

### ROADS

The state of the roads are good in the central areas of the city, however, in many parts of the city, there are no asphalted roads or the roads are in bad shape. This is a major cause of breakdown for the trucks and limits the productivity of the waste collection process.

Furthermore, the larger capacity trucks are not able to serve areas with narrower roads, and it is therefore necessary to use smaller trucks until the quality of the roads is improved.

### TRANSFER STATIONS

There are currently no transfer loading stations; however, OYOWMA acknowledges that the use of transfer stations would reduce the costs of collection and transfer to landfill (Ogunyemi, Ibadan SWM project - kick-off meeting, 2014). A transfer station was constructed in Orita Aperin, but has been converted for other uses.

Main roads in Ibadan



State of the roads in various parts of the city



### State of the roads in various parts of the city



### FACILITIES FOR THE CLEANING SERVICES

From observations during the field visits there are currently no facilities dedicated to street cleaning services.

### DUMPSITES

The dumpsites in Ibadan are strategically located, i.e. North, East, West and South of Ibadan City. Hence, refuse trucks access the site that is nearest to them. OYOWMA is responsible for the management of all the dumpsites in Ibadan. The four dumpsites were originally placed in areas with no habitation, but due to poor urban planning, habitations have started to be built near the dumpsites (EGIPE Sarl, 2015).

**Table 9:** Overview of dumpsites in Ibadan

DUMPSITES	ABA-EKU (EAST)	AJAKANGA (WEST)	LAPITE (NORTH)	AWOTAN (SOUTH)
<b>In service date</b>	1994	1997	1998	1998
<b>Location</b>	No7°32 Eo3°98	No7°46'3 Eo3°85	No7°57 Eo3°91	No7°31 Eo3°84
<b>Approximate size (ha)</b>	10.7	10.7	9.3	20.3
<b>Issues</b>	Waste not covered by soil	Majority of waste comes from industry	Waste dumping is uncontrolled and hazardous and there is no attempt to cover the waste dumped by soil	Waste not covered by soil





**Track in Ajakanga dumpsite**



**Truck tipping waste in Lapite**



**Damaged enclosure wall in Lapite**



**Waste sorted out in Ajakanga**

Once the tracks start being cluttered by waste, OYOWMA mobilizes Caterpillar bulldozers to push the waste away from the tracks and to clear the spillover areas. The waste height is rarely above two meters and no tracks are created on top of the waste. The field visits revealed that the surface area contaminated by waste is under used.

In Lapite, the depth of the groundwater is estimated to be at about 10m (EGIPE Sarl, 2015). This means that the groundwater is vulnerable to waste contamination. However, there is no data about the actual level of the groundwater, but based on the field visits groundwater does not seem to reach the surface.

The following was also observed:

- The waste is only a few meters high at the dumpsites (modern landfills can pack waste up to 40m).
- The use of appropriate vehicles (bulldozers, power-shovels, etc.) would enable a significant improvement in the life expectancy of these sites while reducing the surface area of the zones contaminated by waste.
- There has been encroachment by housing developments. The proximity of the houses means there is a need for new dumpsites if the houses are to remain inhabited. Any new sites would need to be preceded by legislation to prevent encroachment (Ogunyemi, Ibadan SWM project - kick-off meeting, 2014).
- The dumpsites are not well secured. While there are some unarmed guards overseeing the dumpsites, at one of the dumpsites visited, the enclosure wall was damaged in some places.
- With an available surface of about 50 ha, it is estimated that, if managed properly, these four sites could store about 3,000,000 tons of waste. Currently, according to the figures from OYOWMA, about 450,000 tons of waste

are collected every year, this number is expected to increase as only a part of the waste produced is actually collected. These estimates confirm the need for new dumpsites.

OYOWMA would like to implement formal material recovery and recycling in these dumpsites and turn them into sanitary landfills. The Authority however does not have the financial means to buy the equipment required to manage the dumpsites correctly (EGIPE Sarl, 2015).

Instead scavenging (informal waste picking and material recovery) at the dumpsite is common. There are about 200 informal waste pickers or so-called scavengers across the four dumpsites - their numbers vary from one dumpsite to another (OYOWMA, 2016). This is a very small number given the size of the city. In comparison, the city

of Casablanca which has a population of 4,000,000 people has about 2,000 scavengers per dumpsite. That said, the lower number of scavengers may be appropriate, as during the study period that the waste in Ibadan has a much higher organic content than is generally found elsewhere.

It was noted that scavengers frequently set fire to waste to ease the recovery of metals. This is a very common practice in dumpsites where scavengers operate, not only in Nigeria. Regular fires in the dumpsites are also caused by spontaneous combustion, or from hot ashes. The production of methane from decomposing waste in the dumpsites further fuels and propagates the fires.



**Scavengers weighing waste in Ajakanga**



**Burning waste in Lapite**

# RESOURCES AND FACILITIES OF THE PRIVATE SECTOR INVOLVED IN SOLID WASTE MANAGEMENT

## FINANCIAL RESOURCES

The private contractors get their revenue from collecting waste management fees in the designated areas that they operate in. Oyo State compels waste producers to patronize the private waste collectors. The fees charged by the private sector operators are as follows:

- Industrial: ₦15,000 (USD 75) to ₦20,000 (USD 100) per truck load (with 5 to 10 tons trucks);

- Commercial: between ₦2,000 (USD 10) to ₦4,000 (USD 20) per month depending on the frequency of collection;
- Households: between ₦800 (USD 4) to ₦1,500 (USD 7.50) per month, negotiated based on the capacity of the households to pay and the accessibility of the premises.

Please see the following tables for further detail on the fees charged by private contractors for waste collection and disposal.

**Table 10:** Standard tariffs for waste collection and disposal services in domestic / residential premises (effective January 2013). Source: OYOWMA

category	area	rate (₦)	rate (usd)
A	High Income Areas – Alalubosa GRA, Iyaganku, Bodija & Environs, Ikolaba GRA & New Extension, Idi - Ishin, Agodi GRA, Samonda, Kolapo Ishola, Felele Rab & Environs, General Gas and Akobo Estate and other high income areas	₦1,500 (minimum) @ ₦750 per pick	USD 7.50 (minimum) @ USD 3.75 per pick
B	Medium Income Areas – Bashorun, Iwo Road, Ikolaba 1 (Old), Mokola, Eleyele, Sango, U.I. / Agbowo / Ojoo, Akobo Oju – Irin & Environs, Oke Ado / Molete, Ologuneru, Alakia, Airport, Isebo, Adegbayi, Alarere Orogun, Odo – Ona Elewe, Alawon, Molade Asaju, Bishop Philips, Apete / Awotan, Ijokodo, Apata / Wire & Cable, Elere, Bembo, Elenusonso, Owode Housing Estate, Aba Paanu, Joyce B, Oluyole Extension, Olunsanya Adeoyo, Imalefalafia, Mobil / Ring Road, Anifalaje, Ayegoro Isokan, Alafia Olorunda – Aba Area, etc.	₦1,000 (minimum) @ ₦500 per pick	USD 5.00 (minimum) @ USD 2.50 per pick
C	Low Income Areas – Beere, Oja – Oba, Oje, Idi – Arere, Bode, Oke – Adu, Yemetu, Igosun, Ode – Aje, Aremo, Agugu, Oke-badan, Odejayi, Oluyoro, Onipepeye, Gbagi, Orita – Aperin Adesola, Olorunsogo, Ogbere / Tioya	₦800 (minimum) @ ₦400 per pick	USD 4.00 (minimum) @ USD 2.00 per pick

As previously noted, not all waste producers pay for waste management services, and it is a challenge for the private sector to collect waste fees. During the stakeholder events organized as part of this study, OYOWMA was able to forge an agreement from the leadership of the Community Associations

of Ibadan that all households in all of the low income areas would begin to pay a fee for waste disposal. They were to start with a minimal fee of ₦20.00 per drop of waste (bag, sack, carton, etc.) into waste collection points, and OYOWMA hopes to increase this to ₦50 per drop through further consultation;

**Table 11:** Standard tariffs for waste collection and disposal services in commercial / industrial premises (effective January 2014). Source: OYOWMA

SN	WASTE RECEPTACLE	MONTHLY COLLECTION		
		Once (₦)	Twice (₦)	Four times (₦)
1	Drum Equipment (200 L)	3,250	6,000	10,000
2	Goliath Bin Equivalent (3 MT)	12,500	23,500	40,000
3	Canter Bin Equivalent (6 MT)	17,500	32,500	60,000
4	Skip-Eater Bin Equivalent (9.7 MT)	55,000	85,000	105,000
5	Compactor Truck Equivalent (20 MT)	90,000	162,000	300,000
6	Compactor Truck Equivalent (30 MT)	100,000	190,000	320,000

**Table 12:** Standard tariffs for waste collection and disposal services in commercial / industrial premise – Monthly Bin rental services (effective January 2014). Source: OYOWMA

SN	WASTE RECEPTACLE	UNIT	RATE (₦)
1	Goliath Bin Equivalent	1	12,500
2	Canter Bin Equivalent	1	17,500
3	Skip-Eater Bin Equivalent	1	25,000

The Private Refuse Contractors Association is able to help its members finance the purchase of (second-hand) trucks through the Cooperative Society of the Association. This financing is provided at low interest rates. But otherwise the private waste contractors face difficulties in financing investments, and there is an expectation that OYOWMA should assist the private sector to develop the capacity to

work efficiently (EGIPE Sarl, 2015). Supporting initiatives to access finance is one of the expected areas that will build greater efficiency in the sector. However, it was also noted that there are currently no commercial banks or financiers investing in solid waste management in Ibadan.

## HUMAN RESOURCES

There are 317 registered private waste contractors in Ibadan (OYOWMA, 2016). Each of them has about 5 staff per truck and some have up to 5 trucks, so collectively they employ more than 1,000 people. While the private contractors are formally obliged to educate and train their staff to properly perform waste collection, the private contractors acknowledge the need for further capacity building and training for their staff is required.

## INFORMAL SECTOR

Although not observed during the field visits in Ibadan, it is apparent that there is an informal sector that collects waste either for a fee or by salvaging any recyclable materials in return (Sunday, 2012) (Wahab, 2012). These informal waste collectors operate at the community level using pushcarts and wheel barrows for the collections of wastes in the areas where OYOWMA and the registered private waste contractors cannot or do not undertake waste collection services. OYOWMA does not encourage the informal sector to collect waste in Ibadan as the waste collected is not properly disposed of and is often indiscriminately dumped. The practice of the informal sector collecting waste has been outlawed and it is an offence to operate hand carts, or patronize an informal waste collector in Ibadan.

As previously stated under the description of the dumpsites, informal waste pickers are tolerated at the dumpsites. The so-called “scavengers” operate inside the dumpsites collecting, sorting and reselling valuable materials recovered from the waste. They are poorly equipped or not equipped at all, and are organized under an Association. There are about 200 scavengers spread across the four dumpsites in Ibadan (OYOWMA, 2016).

## EQUIPMENT AND VEHICLES

The private sector uses all kind of trucks, but not trucks specific to waste management. For example, there are no packer trucks and no high capacity vehicles. The vehicles used by private operators, observed during the field visits, are about 5 to 10 tons in capacity, and are therefore generally smaller than the vehicles used by OYOWMA. The trucks are all second-hand with only one drive axle; therefore they encounter difficulties on city roads and in

the dumpsites whenever there is rainfall and the unmade roads become muddy. It was however noted that some modifications made to the trucks used by the private contractors were relevant for reducing the physical work and curtailing possible disturbances.

As there are no transfer stations in Ibadan, the private contractors’ trucks go directly to the dumpsites once they are fully loaded. Therefore they can only make up to two collection rounds per day (EGIPE Sarl, 2015).

It was not possible to conduct an inventory of all the collection vehicles operating in the city as the trucks are dispersed throughout the city at any point in time. The trucks owned by each contractor are parked at different locations in the city at the end of the day.

Experience from other cities in Africa (e.g. Djibouti, Morocco), with similar road conditions to Ibadan, shows that small vehicles like those used by the private collectors are more efficient in terms of collection cost per ton than larger and more sophisticated trucks (e.g., packer trucks whose efficiency relies largely on high quality roads).<sup>9</sup> However, the small vehicles are efficient only in the areas where the roads are narrow and of poor quality. On wider and better quality roads, bigger trucks would be more efficient.

In Ibadan 200L plastic waste containers are installed in a number of the streets for waste producers to drop their waste between collection rounds. These containers are then emptied by the private contractors.

Private waste collectors do not venture into the high density and low income areas of the city because of the poor state of the roads and poor truck mobility (EGIPE Sarl, 2015).

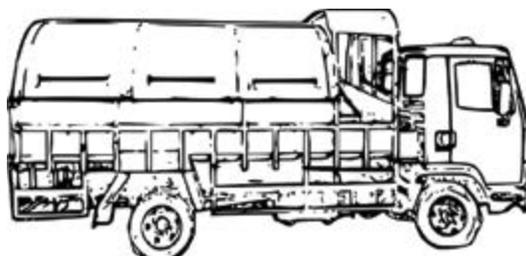


Figure 7: Improved garbage truck used by the private sector

## **AREAS FOR IMPROVEMENT IDENTIFIED BY THE PRIVATE REFUSE COLLECTION ASSOCIATION**

Possible areas for improvements were discussed with the Private Refuse Contractors Association operating in Ibadan, and according to the Association, the following actions would help improve their productivity:

- **Policy and regulation**
  - Better cooperation from the population in relation to disposing waste properly, storing waste for waste collection and paying waste management fees;
  
- **Equipment, facilities and infrastructure**
  - Installation of bins in front of the houses to improve the packing of the waste and help the collection;
  - Smaller trucks to access the unplanned areas and slums;
  - The construction and use of transfer stations in close proximity to the collection areas;
  - Better maintenance of the dumpsites;
  
- **Human resources, skills and competences**
  - Capacity building and training for the workers;
  
- **Waste management services**
  - Better waste treatment and recovery of resources;
  
- **Finance**
  - Improvement of their cash flows;
  - Access to loans from the banks.

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*9 Based on an extensive weighing campaign of the collected tonnages, of paths and collection times as well as an analysis of the costs of depreciation, maintenance, fuel, tires, collection employees, etc.*



Private contractors' staff loading waste into their truck



200 L plastic waste containers



Private contractors' staff emptying the truck using a shovel

# ASSESSMENT OF THE CURRENT CHALLENGES FOR PRIVATE SECTOR INVOLVEMENT

Street cleaning and solid waste management services are currently being provided in a sub-standard manner in Ibadan metropolitan area. Although the private contractors are involved in the collection and transport of waste in Ibadan, there are several factors that limit their productivity and ability to improve their services:

## 1. Deficient revenue collection of waste management fees

- Not all waste producers in Ibadan such as households, businesses and industries may not be willing to subscribe to private waste services or pay for waste management services. Due to the fact for some because they have never paid for such services, as waste was disposed indiscriminately or burned. For others, there is reluctance to pay for services that are either not reliable or not performed properly. For private contractors, the uncertainty related to payments for their services is a real challenge to ensure revenue and cover their costs.

## 2. Lack of data of solid waste management performance and costs

- A major issue is the lack of proper measuring and monitoring of waste management data and costs. Neither the private contractors nor OYOWMA have the data and methods to evaluate the productivity and quality of the waste management services. Shared information and knowledge of waste management activities between public and private actors is needed to for establishing balanced partnerships and determining feasible service management fees. For example, currently the actual costs of waste management and degree of cost recovery are not known.

## 3. Significant weaknesses in existing transport infrastructure and waste facilities

- The urban planning, roads and infrastructure in Ibadan are in such a poor state that they either prevent motorized vehicles to

access certain neighborhoods or cause the vehicles to breakdown. As Ibadan has no transfer stations, waste collection vehicles can only perform a limited number of collection rounds before they are filled and have to drive all the way out to the nearest dumpsite to be emptied.

The dumpsites in Ibadan are poorly managed and maintained. The leachate is not properly drained and the tracks are not correctly managed. None of the dumpsites in Ibadan comply with environmental and safety standards for landfills.

## 4. Poor public attitudes and behaviors regarding waste disposal

- Ibadan has a firmly entrenched culture of resistance to paying for waste management from the stakeholder events that this view is slowly changing, partly as a result of efforts by the State Government to raise awareness through various forms of media. The entrenched attitude has a direct impact on the viability of private sector participation, as a general trend not to pay for waste disposal has an impact on the levels of revenue that can be achieved by private collectors. This has impacted on the private sector's willingness to invest.

## 5. Weak enforcement of regulations

- Furthermore, a significant deficit in the number of enforcement officers, limits the capacity to enforce existing waste regulations. The legal framework found the legal framework to be adequate for the involvement of the private sector. The laws are also clear on the proper handling of waste by waste producers, as well as the attendant sanctions for non-compliance. For example, all households are legally required to have appropriate containers for the storage of waste on premises, and arrangements for the regular removal of the waste by paid service providers. The lack of proper en-

forcement of these legal requirements reinforces existing attitudes to waste management and is a missed opportunity to drive up behaviors that can boost revenues and increase the commercial viability of private operators.

#### 6. The contractual framework

- The allocation of operation permits for designated areas for private contractors is not based on an open competitive tendering process. This does not allow the most cost-effective companies to be identified. The short duration of the operation permit / agreement with OYOWMA is an obstacle for accessing finance and investing in equipment to improve productivity. The trucks and equipment used are old and often break-down. Financial institutions and investors are not willing to finance companies and projects, if there is not more certainty that there is sufficient time for investments to be profitable. The contractual framework is not supportive of the professionalization of the waste collectors and does not allow the private contractors to improve their productivity and performance. Private sector participants experience difficulties and delays in obtaining required approvals, bureaucracy and a lack of an enabling environment for public-private partnerships.

#### 7. Weak involvement of private operators in the waste processing and resource recovery activities

- At present, the private sector participates in a limited scope of solid waste management activities such as waste collection and transportation. The private sector could be involved in other activities such as street cleaning, waste processing, resource recovery<sup>10</sup> and landfill management, this would require that Oyo State has the right competencies and capacity to manage and monitor such types of public-private partnerships.

The informal sector is involved in solid waste management activities. These actors have a role to play in integrated solid waste management, but are currently not involved as private sector participants.

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*10 A waste-to-energy public-private partnership was launched in 2015 between Oyo State and Highland Energy Solution Services Limited (HESSEL).*

# BEST PRACTICES AND EXPERIENCES OF PSP IN SOLID WASTE MANAGEMENT

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This section presents the best practices and experiences identified in this study of private sector participation (PSP) in solid waste management in countries and cities that are in a similar situation as Ibadan. Based on different reports and studies from

other cities in Nigeria and other countries such as Ghana, Uganda and India, to identify best practices that could be replicable in Ibadan. The review of best practices also considered lessons learnt from unsuccessful initiatives.

## COLLECTION OF WASTE MANAGEMENT FEES / RECOVERY OF WASTE MANAGEMENT COSTS

A major challenge to recover the costs of waste management services in areas that are not used to having any waste collection services or have not paid for the services before. Kassim (2009) showed in his study in Tanzania that the collection of fees from households was not sufficient to cover the costs of waste management. In Lagos the major factors affecting the performance of the private waste operators were the delays in payment of fees by waste producers, low levels of subscription to a collection service by households and the inadequate enforcement of payments by defaulters (Idowu, 2011). There was also a lack of public awareness regarding the importance of the solid waste collection service. This was cited as one of the main reasons for the low level of interest of households in waste

collection, leading to poor rates of fees collected. There are different revenue collection mechanisms for formal waste services (UNEP & ISWA, 2015):

- Direct charging via a waste management bill, e.g. Lusaka (Zambia) and Moshi (Tanzania);
- Direct waste management fee + property tax, e.g. Bamako (Mali);
- Indirect charging via the utility bill, e.g. Nairobi (Kenya), Maputo (Mozambique);
- Financed via property tax (no direct fee), e.g. Dhaka (Bangladesh);
- Finance from general public funds.

Direct waste management fees are rarely able to recover the full cost of solid waste management, but

should aim to recover as much as possible. The best revenue collection mechanism depends on what there is tradition for doing and on the local culture.

A study on the application of economic instruments for sustainable solid waste management in low and middle-income countries found that integrated billing with utility bills has substantially improved cost recovery in numerous cases (GIZ, 2015). This type of revenue collection has the advantage of using the existing register and billing system of a utility and can be cost effective.

Maputo in Mozambique tried to introduce a waste management fee per household of roughly two dollars per month to finance the city's SWM (GIZ, 2013). Even though this represents less than 0.6% of the average household available income, the municipality had trouble collecting fees due to distrust of the government, poor service performance and no public information about the fee. A storm of protests led eventually to the fee's withdrawal. It was only later through a wide-spread awareness campaign that Maputo managed to collect the waste management fee charged through the electricity bill.

The Collaborative Working Group on Solid Waste Management in Low- and Middle-income Countries (CWG), an international network that encourages interaction between partners on key solid waste management issues, advises that the beneficiaries of waste management services such as households and businesses should be involved in the discussions and decision-making related to the plans and development of local solid waste management (Coad, 2005). In particular beneficiaries should be kept well-informed about the benefits that they can expect to receive from the proposed services. Based on different case studies, the CWG revealed that committees or stakeholder forums with local government representatives and community members were an effective way of communicating with the beneficiaries. A good relationship and communication with the beneficiaries facilitates the waste collection service and payment of fees.

Oduro-Kwarteng (2011) compared the practices of involving the private sector in solid waste collection in five cities in Ghana, including the cost recovery practices of the collection service. A policy in Ghana states that direct cost recovery from all users should be applied where it is possible to charge the full commercial price covering all operating and capital costs of solid waste collection. If this is not

possible, the shortfall should be subsidized by the authorities. Within this framework, and with the objective of reducing the financial burden of the local authorities in charge of solid waste collection, actions have been taken in order to involve the households in paying fees. A shift began recently towards cost recovery by charging households and other beneficiaries on a Pay-As-You-Throw (PAYT) basis for communal service and monthly fixed-charge for house-to-house collection in Accra, Kamusi and Tema. The PAYT approach is mainly used in the low-income areas, and the monthly service fees for the high income households (Mugagga, 2006).

Lagos and Ekiti States in Nigeria have had success in collecting waste management fees from waste producers by providing "waste bills" with the State Government's name and logo (Olugbenga, 2015). Payment is not made in cash directly to the private contractors, but to a bank or another intermediary. The payments are registered in a billing system that allows the tracking of waste producers' payments. The revenue collection system provides transparency and monitoring of payment of waste management fees for all parties.

It was key that Lagos Waste Management Authority (LAWMA) intensified enforcement and the drive to recover payments (e.g. through mobile environmental / sanitation courts) as well as communication and sensitization of payment of waste management fees to the general public, when implementing the distribution of waste bills.

## **BEST PRACTICE RECOMMENDATIONS**

The main recommendations emanating from these case studies to improve fees collection are as follows:

- improve the awareness of the public regarding the importance of the solid waste management services;
- correctly inform the public about the benefits they can expect from the services provided;
- use a Pay-As-You-Throw (PAYT) approach in low income areas;
- aim to increase cost recovery gradually through incremental increases in waste management fees that are accompanied by tangible improvements in the quality of service;
- ensure support is available to the waste producers that cannot afford to pay for waste management services / ensure that the costs of waste management is suffi-

ciently covered for private sector participants that operate in low income areas. OYOWMA is already attempting to implement these recommendations. Recently, during one of the stakeholder events, it en-

gaged in discussions with the local community leaders and associations, and the heads of the associations announced that they will ensure the proposed PAYT scheme is implemented within their communities.

## GOVERNANCE – THE ROLE OF PUBLIC AUTHORITIES

The competences and the governance capacity of the local government is one of the key success factors of private sector participation (Coad, 2005). Several factors contributing to the failure of public-private partnerships by the governance of the public sector have been identified. The first one is related to the style of management. If the public authority is not able to delegate and trust that the private contractor, this can hamper the private contractor's ability make its own decisions on how to best deliver the agreed service most efficiently. Similarly, if the public authority is too demanding and expects the private service provider to be at its command, irrespective of any contract conditions, this may result in the private contractors not being able to meet its contractual commitments, or simply abandon the contract.

Bureaucratic procedures are often put in place to prevent corruption, but unnecessary bureaucracy is another factor can cause delays in decision making and can be very costly to the contractor. Transparency is a much better defense against corruption. Failing to set clear objectives; inadequate preparation leading to serious delays in the tendering; contracting stages and execution; vague contracts leading to dispute and financial difficulties; or, inadequate monitoring to check the quality of the service that is provided; are other sources of failure that have been identified.

Furthermore, the concept of partnership is crucial to the success of private sector participation. Both sides should have rights that are upheld by the courts and duties that are backed up by the threat of sanctions. Based on the case studies, an equal partnership is much more likely to result in effective and economical services that continue for a long period.

The private contractor must be convinced that they are working with committed and reliable authorities (EY, 2013). Private companies involved in infrastructure projects have limited resources and many

competing opportunities. A country must market itself to the private sector and develop its PSP strategy with the domestic and international markets in mind. Only a governmental organization with a competent professional staff and an adequately designated authority with commensurate responsibility would be fully able to develop, negotiate, manage, monitor, and enforce a competent contract instrument (Cointreau-Levine, 1994).

In India an expert committee was formed by the Supreme Court of India in 1999 to provide recommendations for improving waste management practices (Athena Infonomics, 2012). The Ministry of Environment & Forest introduced Municipal Solid Waste (MSW) Rules in 2000, incorporating key recommendations of the Supreme Court-appointed Expert Committee. The MSW rules contained several remarkable features, e.g. door-to-door collection, segregation of waste at the source and scientific disposal of waste, among others. Prior to the announcement of the MSW Rules there were hardly any standards to measure the quality of MSW management services provided by the local authorities.

Laws influence the private sector significantly in its assessment of whether to become involved in the provision of municipal solid waste management services (Cointreau-Levine, 1994). Before committing financial resources on the development of bid documents in response to government procurement, private companies want assurance that the local government will follow procurement regulations governing fair competition.

A country's legislative framework needs to provide transparent and predictable legislation (EY, 2013). Well-defined PSP regulations must be in place along with sufficient protection for investors from another area or country. Other countries have planned or enacted primary legislation that addresses PSP and there are encouraging signs that Sub-Saharan African countries are seeing the need for a firm legislative foundation for PSP.

For low cost services to be achieved by contracting, the contract should be long enough to enable the private sector to depreciate capital expenditure for appropriate equipment.

## BEST PRACTICE RECOMMENDATIONS

The main recommendations related to governance of private sector participation are:

- adopt a transparent and partnership-oriented approach to managing private sector participation;
- develop the capacity of the authority to

manage public-private partnerships, e.g. how to set clear objectives, prepare tenders, follow the contracts, write clear contracts, monitor the quality of the services, etc.;

- develop a contractual framework where the public authority and the private service provider are bound by mutual commitments;
- develop standards to measure the efficiency and the quality of the services provided;
- follow relentlessly procurement regulations governing fair competition in order to gain trust from the private sector;
- extend the duration of the waste collection contracts to at least four years.

# WASTE MANAGEMENT SERVICE PERFORMANCE

One of the advantages of the private sector is its management flexibility (Cointreau-Levine, 1994). The private sector has greater ease in terminating the appointment of personnel for non-performance and in providing upward mobility for workers with good performance. Also, the private sector is not constrained to government hours and overtime constraints. In Petaling Jaya, Malaysia, the city reached an informal agreement with its waste collection workers to implement the “task” system of work, where workers may leave work whenever they finish their assigned route. In Indonesia, the constraining government hours have been a motivating factor for increasing private sector participation.

The productivity of private companies increases with increasing scales of operation and decreases when activities grow beyond an optimum scale of operation. According to Oduro-Kwarteng (2011) an optimum scale of operation is five to seven vehicles per company, but this depends on the local context. Another factor identified of good service performance was the supervision capability within the company. Good planning, in-house maintenance capacity, and high levels of worker morale led to higher productivity.

Regarding vehicles and maintenance, there should be one mechanic for every four to five solid waste collection vehicles (Cointreau-Levine, 1994). For an efficient solid waste management service, at any given time, no more than 20% of the equipment

should be out of service. Maintenance and repair service is one area in which the private sector has typically been able to perform very effectively.

## BEST PRACTICE RECOMMENDATIONS

The main recommendations related to the management of the private sector company are:

- create designated service areas big enough to allow private collectors to use more trucks (5 to 7 for a start) and benefit from economies of scale;
- allow the private sector to motivate staff by incentive payments and career development opportunities that typically would not be possible, if they were public sector employees;
- develop the capacity of the private operators to monitor their own operations and to plan, maintain and improve their management of equipment and human resources.

## INCENTIVES ACROSS THE WASTE MANAGEMENT VALUE CHAIN

In general, it is preferable to base payments of waste management services on performance. It is good practice to include bonus payments to private contractors that perform according to or beyond the agreed level of service (UNEP & ISWA, 2015).

In Kanpur, India, prior to the engagement of a private player, the municipal authority was responsible for waste collection and disposal (Athena Informatics, 2012). There was no mechanism for waste separation and no waste processing plant. In light of the waste management situation in the city, Kanpur decided to adopt a PPP framework to manage its solid waste. Two concessionaires were selected:

- a private developer (Concessionaire 1) was responsible for waste collection and transportation, and
- another private developer, (Concessionaire 2) was selected for waste processing and disposal.

After the start of operations of the processing plant by Concessionaire 2, it was realized that the waste transported by Concessionaire 1 to the unit did not hold enough calorific value to be converted into Refuse Derived Fuel (RDF), compost or bricks. This increased Concessionaire 2's financial risk as it was not able to generate revenue from selling the processed products to cover its operations and maintenance costs. In this context, the local authority terminated the waste collection and transportation contract with Concessionaire 1. Later, it entered into another contract with Concessionaire 2, making them responsible for both the aspects of solid waste management: collection & transportation and processing & disposal, and thus aligning incentives.

The concession agreement for collection and transportation of waste provides an incentive to the private contractor only in the form of a tipping fee paid based on the quantity of waste collected. This makes it challenging for the concessionaire responsible for the processing and the disposal of the wastes to mitigate its operational and financial risk, as it converts waste into revenue generating products. Hence, when solid waste management is decentralized with private sector participation for each segment of value chain, the resulting model may not be sustainable unless the tipping fee paid to the concessionaire responsible for collection and

transportation is based on both the quantity and quality of waste. A decentralized model can have a positive impact on community involvement. For example, scavengers in the informal sector that were originally making their own living on waste were integrated in the formal SWM activities by the private sector participant by training them in collecting waste, retaining them and paying them a monthly income.

In order to involve the private sector in sustainable resource recovery and waste conversion activities, waste collection should be better developed as the current means of collection in Ibadan is not providing consistent quantities of wastes to be commercial viable of downstream waste-to-wealth initiatives. It also seems very unlikely at this stage to find private investors willing to buy the waste in order to recover materials from it.

It was identified during the study period that there are private investors interested to develop facilities for waste-to-energy in Ibadan. Although, there is little interest to purchase the waste for the moment. Given the potential difficulties that the private investors may encounter, it should be an area that would require further investigation.

### BEST PRACTICE RECOMMENDATIONS

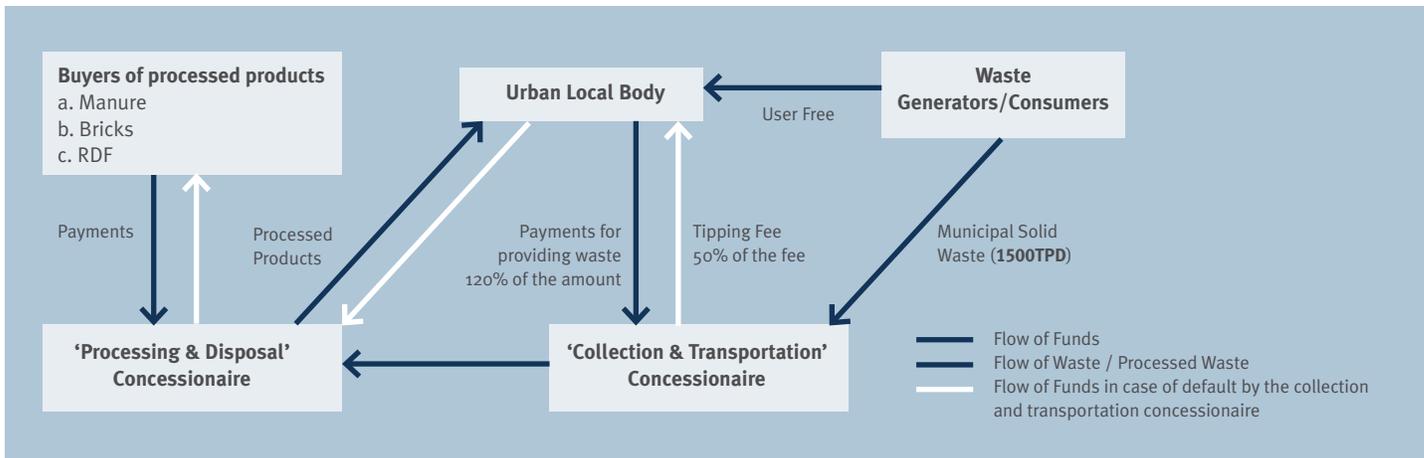
The main recommendations to ensuring incentives across the waste management value are:

- ensure that incentives are created for the private sector within their service delivery, but across the waste value chain, e.g. in order to make composting or recycling more attractive, the public authority should ensure that waste is sorted at the source.
- provide the right signals, e.g. through both 'carrot' incentives to make the behavior attractive financially, or in some other way and 'stick' penalties for non-compliance.

## INVOLVING THE INFORMAL SECTOR

In emerging countries, informal collection accounts for a good part of waste management activities – in particular material recovery. The informal sector is able to achieve high recovery rates leading to a huge variety of recyclables to be segregated and further processed.

The German Agency for Technical Cooperation (GTZ) showed the social advantages of integrating the informal sector (Gerdes, 2010). Waste workers often constitute the lowest level of society; they work under hard and unhealthy conditions. However, the integration of the informal sector aims to uti-



**Figure 8:** Stakeholder Model of a Reverse Integrated Solid Waste Management Project.

Source: (Athena Infonomics, 2012)

lize the entrepreneurial abilities of waste collectors to create business models that can be accommodated within the current economic situation. Integrating informal sector workers has the potential to significantly improve their living conditions.

- The integration of the informal sector within the solid waste collection service could have economic advantages. Even if the informal sector does not directly impact the cost recovery of the solid waste management service, through labor and employment created by scrap collectors, the informal recycling economy in solid waste management financially supplements the formal system. Scrap collectors are entrepreneurs who add value by collecting and then transforming waste into tradable commodities.

Some cities have had success in formalizing the cooperation with the informal sector by providing the conditions for them to earn a small revenue in return for providing waste management services that

are currently not feasible, economically or technically, for the public or private sector (UNEP & ISWA, 2015). The informal sector can typically be effective in the primary or pre-collection of waste in areas where motorized vehicles cannot access. For example, the Municipality of Maputo in Mozambique employs micro-enterprises for manual door-to-door collection using handcarts to perform primary collection of waste in suburban areas with narrow and sandy roads that previously did not have access to waste collection (UNEP & ISWA, 2015).

Besides providing a waste collection service, the informal sector can contribute to better material recovery and recycling. Depending on the cultural setting, the income level of the waste producers, the payment capacity of the public authority and the recyclable content of the waste collected, the waste collector may get paid for the collection service; may do the service for free in order to access the recyclables; or, may need to offer a small fee in exchange for the recyclables.

Involving the informal sector in private sector participation in solid waste management activities should not be a pretext to just minimize waste management costs by evading labor and health regulations. The aim is to include the informal sector and gradually support them in the process to become established waste management service providers with a secure employment and revenue. Community-based initiatives are typically the stepping stone for involving the informal sector in formal solid waste management.

An example of this is Wecyclers<sup>11</sup>, a social enterprise based in Lagos, that collect recyclable items from households using a fleet of cargo-bikes. In partnership with the Lagos Waste Management Authority (LAWMA), Wecyclers collect used plastic bottles, plastic bags and aluminum cans. Participating households receive points for every kilogram recycled, which can be redeemed for electronics, household items, training classes and even money. After collection Wecyclers sort and aggregate the materials, and then sell the high quality recyclable materials to recyclers. Another example is Nigeria Infrastructure Advisory Facility (NIAF) that has successfully piloted a community partnership for small-scale solid waste collection in the high density, low income district Zaria in Kaduna State (NIAF, 2015). Together with Ahmadu Bello University and Kaduna State Environmental Protection Authority, NIAF worked with the informal sector to establish a new and improved solid waste management system.

## **BEST PRACTICE RECOMMENDATIONS**

The recommendations for best practices for integrating the informal sector in the waste management services are:

- instead of excluding the informal sector and depriving it of its source of revenue, build on existing 'bottom-up', small-scale entrepreneurial recycling by integrating the informal recycling within the mainstream waste management activities;
- ensure the inclusion of the community and informal sectors within an integrated waste and resource management strategy and system.

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11 <http://wecyclers.com/>

# OPTIMIZING PSP IN SWM ACTIVITIES IN IBADAN

Greater private sector participation in solid waste management is no guarantee for better services or cost-efficiency. In order for private sector participation to be a success, there must be a stable political and financial backing that allows balanced public-private partnerships to work fairly and transparently in a non-corrupt environment. Both the public and private sector need to have clearly defined duties with agreed incentives and sanctions that are appropriately enforced.

This section aims to develop general guidelines and possible options for the PSP in Ibadan by:

- describing the external factors impacting waste management services in Ibadan;
- defining the general apportionment of activities between the private sector and the public sector;
- defining the conditions for success for each of the waste management activities;

The conditions for success can be used as guidelines by the local decision-makers in Oyo State to evaluate the progress of solid waste management activities in Ibadan metropolitan area.

## EXTERNAL FACTORS IMPACTING PRIVATE SECTOR WASTE COLLECTION SERVICES IN IBADAN

It should be noted that public-private partnerships (PPP) in waste collection can be complicated as there are many external factors or actors which can impact the effectiveness of waste collection, independently of OYOWMA or the private operators. For example:

- The waste producers themselves and their self-interests, attitudes and behavior;
- Buildings which may not have waste storage facilities;
- The roads in Ibadan which may prevent or make it difficult for waste collection trucks to penetrate into some districts;
- The Ministry of Environment and Habitat and the Local Government Councils' role in sensitization and awareness-raising efforts, and the deployment of a communication strategy to change waste disposal behavior;
- The Environmental Health Officers (EHO) and their role in monitoring street cleaning

and waste management performance, enforcing existing laws and changing the behaviors of the waste producers;

- The Board of Internal Revenue, responsible for collecting taxes and penalties due to Oyo State, in their role of supporting or ensuring revenue collection mechanisms for formal waste management services;
- The role of the Ministry of Physical Planning and Urban Development and the Local Government Councils in determining waste collection points and the siting of transfer loading stations and new landfills;

The public authority must be able to provide an effective framework for the engagement and management of private sector participation, when delegating waste collection to private contractors. Private sector participation should be carefully prepared and planned. The framework for public-private partnership should not just delegate the task of waste collection and transport, but also support the private operators to improve the quality and productivity of their services.

In Ibadan, before extending private sector participation in waste collection more widely, it will be useful to test and validate new solutions, for example:

- The introduction of waste collection vehicles that are well-adapted to non-asphalted roads;
- The creation of waste collection points that are suited for the unplanned districts and prepared for tropical rain / flooding;
- Innovative payment methods for the collection of waste management fees; and,
- The development of a systematic dialogue with other government administrations to improve the ability of waste collection trucks to go further inside districts and collect more waste efficiently.

## GENERAL APPORTIONMENT OF ACTIVITIES BETWEEN THE PRIVATE AND THE PUBLIC SECTORS

### ACTIVITIES BEST MANAGED BY THE PRIVATE SECTOR

The activities generally **best managed by private contractors are as follows:**

- Day-to-day management of operational staff: the supervision and the monitoring of field teams requires a flexible and rigorous organization structure, combined with performance and productivity based remuneration systems;
- Operation of equipment, vehicles and facilities e.g. waste collection points, transfer stations, landfills, garages, etc.;
- Investments in and implementation of new technologies and solutions adapted to the local context to increase performance and

efficiency. For example, the design and adaptation of trucks to the prevailing road conditions.

### ACTIVITIES BEST MANAGED BY THE PUBLIC SECTOR

The activities **generally best managed by the public authority are as follows:**

- Definition of the service quality levels and specifications;
- Definition of the amount of taxes or fees for waste management services as well as the justification of the fee levels;
- Communication to waste producers, i.e. citizens, companies and public administration staff about the service provided and the be-

haviors which are expected from them for the service to be provided correctly;

- Planning and location of facilities and infrastructure e.g. location of waste bins and containers, waste collection points, transfer stations, landfills, etc.;
- Maintenance and improvement of access and roads to waste collection sites and waste management facilities;
- Enforcement of sanctions when relevant for both waste producers and private waste contractors.

## ACTIVITIES SHARED AND/OR NEGOTIATED BETWEEN PUBLIC AND PRIVATE SECTORS

The activities that can be **shared and/or negotiated between the public authorities and private contractors are as follows:**

- The collection of waste management fees from waste producers for example:
  - The private waste company collects fees and pays a percentage to the government through OYOWMA - *this is the current practice*;
  - The Local Government Area or OYOWMA collects fees from the waste producers and pays private waste companies a tipping fee paid based on the quantity and quality of waste collected;
- Definition of different service levels and minimum quality levels in each local area or district based on the waste producer's ability to pay, and adapted to infrastructure constraints (e.g. access to collection points);
- Definition of fees or charges for waste management services;
- Duration of contracts and service agreements;
- Possibilities for sanctioning individuals and organizations for not following the rules and regulations related to solid waste management (e.g. littering, improper waste disposal, putting waste in proper bins or bags, taking waste out on collection day);
- Collection, reporting and sharing of data on waste collection and management;
- Development, definition and implementation of coordinated solid waste management-related strategies, objectives and action plans including communication and awareness-raising campaigns.

## ACTIVITIES REQUIRING THE POTENTIAL INVOLVEMENT OF PRIVATE WASTE CONTRACTORS

Aside from the above-mentioned activities, other relevant and related solid waste management activities and services may require the involvement of a range of waste experts from the private sector, if Oyo State does not have the necessary skills and competencies in-house. Examples of these are as follows:

- Design, production, modification or procurement of waste collection vehicles and waste management equipment;
- Legal advice for drafting clear, coherent and adapted specifications for tenders, and provisions for contracts with private contractors;
- Land planning and management: using GIS (geographic information system) and zoning to improve waste collection routes, improvement of urban infrastructure and facilities;
- Technical survey for the planning of urban and peri-urban waste management facilities and infrastructure e.g. garages, transfer stations, landfills;
- Design, construction and renovation of urban and peri-urban waste management facilities and infrastructure e.g. garages, transfer stations, landfills;
- Collection of waste management fees, making payments to private contractors and customer billing;
- Information and communication services to raise awareness and change waste producers' behavior e.g. public service announcements, billboards, posters, leaflets, etc.;

- Training staff to improve skills and competencies to be better able to perform their work effectively, efficiently and safely;
- Technical and management advisory services to develop and optimize the solid waste management framework and activities e.g. developing a Solid Waste Master Plan.

## OPTIONS FOR PSP INVOLVEMENT IN SOLID WASTE MANAGEMENT ACTIVITIES IN IBADAN

The extent of private sector participation in each step of the waste management value chain depends on the definition of the relevant financial and operating model, explained as follows:

- **The financial model** establishes how the capital and operational costs of waste management services can be best be financed through the capacity of the waste producer to pay for services, through the ability of private operators to generate income from the waste collected and through public funds;
- **The operating model** establishes the operating costs for a given level of service, and the economies of scale and/or investments in human resources, equipment, facilities and infrastructure that are needed to improve the performance and efficiency of waste management services.

Private waste contractors could be involved more in each step of the waste management chain, and in accordance with the general apportionment of activities. Areas for consideration in the context of Ibadan are as follows:

- Waste generation e.g. awareness raising, waste management fee collection, etc.;
- Street cleaning;
- Waste collection;
- Waste transfer and transport to landfills;
- Waste disposal / landfill management;
- Resource recovery e.g. recycling, waste-to-energy, composting, etc.

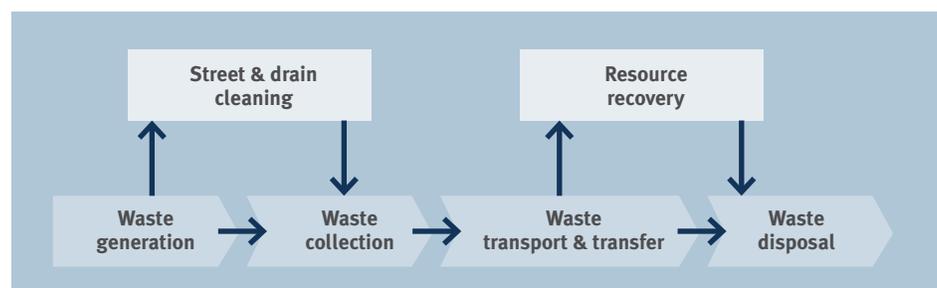
It should be noted that most of the workers employed by OYOWMA are on a temporary basis (i.e. apart from the management staff, mechanics and drivers), and this will reduce the challenge of transferring these workers to a private operator should certain functions be handed over to the private sector to operate.

### GENERAL OPTIONS FOR PSP IN IBADAN

Based on the current situation in Ibadan and on the apportionment of activities between the private and the public sectors, the most appropriate options for private sector participation for each waste management activity were proposed and are summarized in the table below.

This table can be used as a guideline for the different waste management activities, especially with regard to the conditions for success and the conditions for failure that are set out in the table and further expanded upon below.

These options need to be carefully considered as more data on the overall waste management services becomes available.



**Figure 9:** The different solid waste management activities in the waste management chain

**Table 13:** Options for PSP in solid waste management activities in Ibadan

SOLID WASTE MANAGEMENT ACTIVITY	DEFINITION OF THE ACTIVITY	PRIVATE CONTRACTOR'S RESPONSIBILITY	OYO STATE'S ROLE
<b>General</b>			Monitoring of the service provided
<b>Awareness raising and collection of waste management fee</b>	<p>Communications must target two distinct and complementary objectives:</p> <ul style="list-style-type: none"> <li>• Diffusion of knowledge allowing all the persons in charge to understand the various elements of waste management, as well as the factors of success and failure of the services to be implemented</li> <li>• Modification of the behaviors of waste producers.</li> </ul> <p>Different options are possible for money recovery:</p> <ul style="list-style-type: none"> <li>• Fees for waste management levied through utility bills or annual or monthly taxes (e.g. property taxes)</li> <li>• Fees for waste management collected directly by the private sector with support from OYOWMA</li> <li>• Development of government cost recovery agency</li> <li>• Subsidization of low income communities with high income communities or government funds</li> <li>• Avoid cash payments; formalize prices and methods of billing and introduce uniform security printed receipts by all waste collectors</li> </ul>	<p>Communication work mobilizing various media of varied competencies; for example:</p> <ul style="list-style-type: none"> <li>• Perform street animations</li> <li>• Develop radio spots, teaching material for schools, brochures, graphics for the waste management equipment</li> <li>• Delivery of training to the other stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Law enforcement</li> <li>• Engagement of community leaders, civil servants, teachers, religious leaders, shop and business owners on the importance of hygiene and cleanliness of public spaces</li> <li>• Communication to citizens and companies about the service provided and the behaviors which are expected from them for the service to be provided correctly</li> </ul>

PATTERN FOR SHARED PARTICIPATION	CONDITIONS FOR SUCCESS	CONDITION FOR FAILURE
	<ul style="list-style-type: none"> <li>• Protection of all the waste management facilities and equipment against theft and vandalism</li> <li>• Maintain roads, access roads to the waste management facilities and sidewalks in good shape</li> <li>• Monitor the quality of each service provided based on reliable data</li> <li>• Develop a shared and precise knowledge of the field reality</li> <li>• Quality of the contracts with clear definition of payment and fees</li> <li>• Definition of different service levels and minimum quality levels for each service adapted to the constraints (capacity to pay, facilities, etc.)</li> <li>• Regularity of the payments and respect of the commitments from all parties involved</li> </ul>	
<p><b>Communication towards all the stakeholders:</b></p> <ul style="list-style-type: none"> <li>• Training and information workshops</li> <li>• Courses specific to waste management</li> <li>• Models (scale models) of the infrastructures to be established and managed</li> <li>• Reports on the good practices carried out in countries with a GDP per capita similar to Nigeria</li> <li>• Forums and debates mobilizing the persons in charge of these problems</li> </ul> <p><b>Communication towards the waste producers:</b></p> <ul style="list-style-type: none"> <li>• Develop each year a communication strategy based a concerted effort between all key stakeholders and focused on the main awareness problems and behaviors to address</li> <li>• Communication to citizens about the reasons for keeping the streets clean and the sanctions that will be applied to non-compliance</li> </ul>	<ul style="list-style-type: none"> <li>• To develop each year a communication strategy based on a concerted effort between all key stakeholders, and focused on the main awareness problems and the behaviors to be addressed.</li> <li>• To adapt the message to the targeted public</li> <li>• To permanently seek to improve the educational-value of the messages</li> <li>• To develop easy to remember slogans that encourage good behaviors</li> <li>• To measure, using surveys, the impacts of communication actions and the evolution of the perception of waste management by the population (a survey every 6 months with the same questions)</li> <li>• To repeat, repeat and repeat again messages</li> <li>• Transparency for how waste management money is used</li> <li>• Enforcement of sanctions for waste producers (e.g. households and companies) for not paying for waste management services</li> </ul>	<ul style="list-style-type: none"> <li>• Not ensuring a permanent and continuous communication</li> <li>• To use an “advertising” communication (publicity of the waste management services) rather than a communication centered on the problems of people and the manner of solving them</li> </ul>

SOLID WASTE MANAGEMENT ACTIVITY	DEFINITION OF THE ACTIVITY	PRIVATE CONTRACTOR'S RESPONSIBILITY	OYO STATE'S ROLE
<b>Street Cleaning</b>	<p>Street cleaning includes:</p> <ul style="list-style-type: none"> <li>• Manual, regular and periodic sweeping of sidewalks, streets, squares, markets and different public roads</li> <li>• Mechanical sweeping of streets and parking lots</li> <li>• High-pressure washing for the stretch of roads or parking lots contaminated by substances that make traffic dangerous</li> <li>• Exceptional sweeping of areas after accidents, events, festivals, concerts, fires, etc</li> </ul>	<ul style="list-style-type: none"> <li>• The collection operator also provides street cleaning services</li> <li>• Supply and maintenance of the bins</li> <li>• Purchasing/Leasing of street cleaning equipment and vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Provide facilities for the storage of street cleaning equipment and of waste</li> <li>• Enforce sanctions for littering and improper waste disposal</li> <li>• Design of the messages written on the bins through a commission gathering the different stakeholders involved in environmental management in Ibadan</li> </ul>
<b>Waste collection from common waste collection points</b>	<p>This service includes:</p> <ul style="list-style-type: none"> <li>• Determining the location of the waste collection points</li> <li>• The information about the population concerned by these locations</li> <li>• The installation of these waste collection points;</li> <li>• The equipment for these waste collection points (containers)</li> <li>• The regular cleaning of these waste collection points and of their containers</li> <li>• The regular emptying of the containers</li> <li>• The repair and maintenance of the containers</li> <li>• The printing messages on the containers about the respect of cleanliness of the waste collection points and of the containers</li> </ul>	<ul style="list-style-type: none"> <li>• Supply of the containers</li> <li>• Collection and transportation of the waste</li> <li>• Cleaning and maintenance of the waste collection points</li> <li>• Writing of communication messages on the containers</li> </ul>	<ul style="list-style-type: none"> <li>• Design of the messages addressed to the users through a commission that gathers the different stakeholders involved in environmental management in Ibadan</li> <li>• Provide land for the waste collection points</li> </ul>

PATTERN FOR SHARED PARTICIPATION	CONDITIONS FOR SUCCESS	CONDITION FOR FAILURE
<ul style="list-style-type: none"> <li>• Location of bins</li> <li>• Definition of the minimum quality level for each area</li> </ul>	<ul style="list-style-type: none"> <li>• Have public bins located near schools, markets, shops, administrations, etc.</li> <li>• Have a local regulatory framework penalizing waste disposal to inappropriate places and communicate about it</li> <li>• Achieve a complete and efficient collection not only of household waste but also of inert waste (e.g. construction and demolition waste) and green waste (e.g. garden waste)</li> <li>• Build awareness of community leaders, civil servants, teachers, shop and business owners, religious leaders on the importance of hygiene and cleanliness of public spaces</li> <li>• Ensure sweeping teams are properly equipped with suitable and quality equipment</li> <li>• Have waste collection points for sweeping equipment near the areas of intervention</li> <li>• Have methods for evaluating the quality of work and the team's productivityImplement financial motivation for staff on the productivity and the quality of work</li> </ul>	<ul style="list-style-type: none"> <li>• Unsealed, unpaved or non-concrete areas to be cleaned. Ill-equipped, poorly supervised and/or poorly motivated (financially) cleaning teams</li> <li>• No public rubbish bins</li> <li>• No partnership with the retailers, the governments, the schools, etc. for the correct management of waste</li> <li>• No citizen awareness work</li> <li>• No sanctions against people who throw their waste on public roads</li> </ul>
<ul style="list-style-type: none"> <li>• Choice of the location of the waste collection points and of their equipment</li> <li>• Design of the waste collection points</li> <li>• Definition of the rules of use of the waste collection points</li> <li>• Develop a Pay-As-You-Throw system for unplanned areas</li> </ul>	<ul style="list-style-type: none"> <li>• The effective and efficient involvement of all stakeholders, under the administrative or political authority of a single legal or natural person having the sufficient authority</li> <li>• One waste collection point for each 200m of road suitable for trucks</li> <li>• Realistic planning and budgeting</li> <li>• Pilot project to enable each stakeholder to check the efficiency and the limits of the solutions implemented</li> <li>• Work on communication and follow up with waste producers related to the state and to the use of the waste collection points and containers</li> <li>• Reinforcement of the waste collection points that often overflow with a higher number of containers and/or larger containers</li> <li>• Mobilization of the communities to gather the waste along the main axes when the vehicles cannot drive inside the districts</li> <li>• Payment based on the amount of waste collected per collection point according to the agreed service level</li> </ul>	<ul style="list-style-type: none"> <li>• The use of open containers</li> <li>• Insufficient number of containers and under-dimensioned size of containers</li> <li>• Inefficient / inadequate placement of waste collection points or inappropriate equipment used at collection points</li> <li>• No regular cleaning of the containers</li> <li>• Lack of responsiveness to correct the situation when the waste collection points or the containers are damaged, dirtied or under-sized</li> </ul>

SOLID WASTE MANAGEMENT ACTIVITY	DEFINITION OF THE ACTIVITY	PRIVATE CONTRACTOR'S RESPONSIBILITY	OYO STATE'S ROLE
<b>Waste Collection - Door to Door Collection</b>	<p>The door-to-door collection of household waste includes the following steps:</p> <ul style="list-style-type: none"> <li>• Storage and conditioning of waste inside the buildings or inside the property</li> <li>• Delivery of the waste correctly conditioned to the collection services on the day of collection</li> <li>• Collection and transportation of the waste</li> </ul>	<ul style="list-style-type: none"> <li>• Collection and transportation of the waste</li> <li>• Purchasing of the collection vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Provide facilities or land for waste collection (garages, etc.)</li> </ul>
<b>Waste Collection - General</b>		<ul style="list-style-type: none"> <li>• Measure the amount of waste collected in each area</li> <li>• Day-to-day management of waste collection teams</li> <li>• Operation of waste collection vehicles and equipment</li> <li>• Internal monitoring of the service provided</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring of the amount of waste collected</li> <li>• Develop pre-collect activities in areas with poor road access (e.g. community-led collection and policing)</li> </ul>
<b>Waste transfer and transport</b>	<p>This service includes:</p> <ul style="list-style-type: none"> <li>• Choice of the transfer sites</li> <li>• Lay out of the site</li> <li>• Storage of the waste brought by the waste collectors</li> <li>• Transfer of the waste to the landfills</li> <li>• Regular clean-up of the transfer stations</li> <li>• Possible pre-sorting/separation of waste</li> </ul>	<ul style="list-style-type: none"> <li>• Delegation contracts between the authority and the service provider with commitments regarding investments, maintenance, operation and payment of the service</li> <li>• Day-to-day management of transfer stations</li> <li>• Purchase or leasing of waste transport truck</li> <li>• Operation of transfer stations and transport of waste to landfills (e.g. registration of waste received and dispatch of waste to landfills);</li> <li>• Repair and maintenance of waste containers</li> <li>• Measure the amount and the type of waste received</li> <li>• Payment based on waste received or transported to landfill</li> <li>• The operator of the transfer station should preferably be the operator of the closest landfill</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring the amount and the type of waste received at each transfer station</li> <li>• Provide facilities or land for the transfer station</li> </ul>

PATTERN FOR SHARED PARTICIPATION	CONDITIONS FOR SUCCESS	CONDITION FOR FAILURE
<ul style="list-style-type: none"> <li>Define the rules for the condition of waste</li> <li>Implement money recovery system such as yellow bags for market areas and poor households: people pay for plastic bags, and these plastic bags are the only ones collected</li> </ul>	<ul style="list-style-type: none"> <li>Population informed and respectful of the rules of waste management</li> <li>Buildings and land properties adapted to waste storage</li> <li>Legal framework in operation</li> <li>Transfer stations in operation</li> <li>Payment based on the amount of waste collected per household/shop/industry according to the agreed service level</li> <li>Require waste producers to have a room or a storage place for the waste inside the buildings or their property</li> <li>Require that waste producers take their waste bins out so they are easily accessible on the day of collection (and enforce the requirement not to place waste on the streets until the day of collection)</li> </ul>	<ul style="list-style-type: none"> <li>A part of the population served by the door-to-door collection rounds does not pay for the service</li> <li>Waste remains on the public road without any reaction from the waste collectors and/or no sanction for the offender</li> <li>The roads are not suitable all year long for the collection vehicles</li> <li>The transfer stations are not in operation, which increases collection costs by requiring the use of larger trucks and increases transportation time</li> </ul>
<ul style="list-style-type: none"> <li>Develop pilot projects to enable each stakeholder to check the efficiency and the limits of the solutions implemented</li> <li>Standardized methods of waste collection at the household level based on waste composition and income status to determine uniform costs in the metropolis</li> <li>Define a contractual framework and the penalties concerning improper performance of services</li> <li>Maintenance of waste collection vehicles: <ul style="list-style-type: none"> <li>All repairs and maintenance of vehicles are done centrally by private or public sector;</li> <li>Light repairs and maintenance are done locally by each private waste operator, while major repairs and maintenance is done centrally by Oyo State</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Definition of taxes or fees for waste collection and explanation for what the money is for and transparency for how it is used</li> <li>Collection methods adapted to the variety of districts in Ibadan</li> <li>No vehicles are parked so that they limit or block the circulation of waste collection trucks</li> <li>Enforcement of sanctions for waste producers (e.g. households and companies) for not paying for waste management services</li> <li>Regular monitoring of the services and penalties slightly higher than the cost of the improperly performed services</li> </ul>	<p>Neither sensitization nor supervision of the behaviors of the waste producers</p>
<ul style="list-style-type: none"> <li>Location of transfer stations</li> <li>Design and construction of transfer station</li> <li>Purchase of equipment</li> <li>Definition of the rule of use of the transfer stations</li> <li>Security at transfer station</li> <li>Maintenance of waste transport vehicles <ul style="list-style-type: none"> <li>All repairs and maintenance of vehicles are done centrally by private or public sector</li> <li>Light repairs and maintenance are done at each transfer station by each private waste operator, while major repairs and maintenance is done centrally by Oyo State</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Good localization and design</li> <li>Ensure that no vehicles are parked so that they limit access to the transfer station or landfill</li> <li>Regular monitoring of the services and penalties slightly higher than the cost of the improperly performed services</li> </ul>	<ul style="list-style-type: none"> <li>Access roads in bad shape</li> <li>Poorly designed contracts and poor regularity of payments</li> </ul>

SOLID WASTE MANAGEMENT ACTIVITY	DEFINITION OF THE ACTIVITY	PRIVATE CONTRACTOR'S RESPONSIBILITY	OYO STATE'S ROLE
<b>Waste disposal / Landfill management</b>	<p>The management of a landfill includes the following tasks:</p> <ul style="list-style-type: none"> <li>• Equipping the site (fence, road, track, weighbridge, cells, etc.)</li> <li>• Reception, checking, weighing and identification of entering and exiting vehicles</li> <li>• Creation of a database containing information on all vehicles that have come to bring waste</li> <li>• Implementation and maintenance of internal circulation tracks at the site</li> <li>• Establish waste cells</li> <li>• Organization of the internal circulation tracks of the site</li> <li>• Organization of spilling</li> <li>• Organization of the recovery, the sorting and the packing of reusable/recyclable waste</li> <li>• Perform leveling and compaction of waste</li> <li>• Implementation and operation of the de-gasification system</li> <li>• Implementation and operation of the drainage system and the leachate collection</li> <li>• Leachate treatment before releasing it into the natural environment</li> <li>• Valorization of biogas as heat, electricity or fuel – on the long term</li> <li>• Marketing of recyclable or recoverable waste</li> </ul>	<ul style="list-style-type: none"> <li>• Day-to-day landfill management</li> <li>• Purchase or leasing of landfill equipment and vehicles</li> <li>• Landfill operation: <ul style="list-style-type: none"> <li>• Reception, identification, checking, weighing of entering and exiting vehicles</li> <li>• Feeding the database of amounts of waste and vehicles received</li> </ul> </li> <li>• Establish and maintain waste cells</li> <li>• Waste leveling and compaction</li> <li>• Organization and maintenance of internal circulation tracks at the site</li> <li>• Operation and maintenance of de-gasification and drainage system</li> <li>• Operation and maintenance of leaching collection and treatment</li> <li>• Repair and maintenance of landfill equipment and vehicles</li> <li>• Organization of the recovery, the sorting and the packing of reusable/recyclable waste</li> <li>• Marketing of recyclable or recoverable waste</li> <li>• Integration of the informal workers already on site for waste sorting</li> </ul>	<ul style="list-style-type: none"> <li>• Setting up a database containing information on all vehicles that have come to bring waste</li> <li>• Support the informal workers (waste pickers) and the structuration of their work</li> <li>• Provide facilities or land for the landfill</li> <li>• Monitoring the amount and type of waste received at each landfill</li> </ul>
<b>Resource recovery</b>	<p>This service includes three distinct steps involving different actors:</p> <ul style="list-style-type: none"> <li>• Recovery of reusable, recyclable or recoverable waste from mixed waste.</li> <li>• Buying sorted and packed waste from multiple sites and grouping them at a central site</li> <li>• Recycling itself, which consists of producing secondary raw materials</li> </ul>	<ul style="list-style-type: none"> <li>• Sorting and selling of the waste</li> <li>• Packing the waste</li> <li>• Day-to-day management and operation of waste recovery activities, e.g. recycling, landfill gas recovery</li> <li>• Purchase or leasing of any equipment and vehicles</li> <li>• Repair and maintenance of any equipment and vehicles</li> <li>• Selling of recyclable waste, landfill gas, electricity and/or heat</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of premises and commodities for the waste pickers</li> <li>• Supervise the health of the waste pickers / scavengers and support the use of equipment to increase their productivity and reduce the drudgery of the work</li> <li>• Support waste pickers to improve their income and their social situation</li> <li>• Support the formal organization of the informal waste pickers</li> </ul>

PATTERN FOR SHARED PARTICIPATION	CONDITIONS FOR SUCCESS	CONDITION FOR FAILURE
<ul style="list-style-type: none"> <li>• Location of new landfills</li> <li>• Design and build of new landfills</li> <li>• Redesign, renovation and improvement of existing landfill infrastructure (e.g. roads, fences, weighbridge, waste cells, bottom liner, top cover, drainage system, leachate collection, storage and treatment system, etc.)</li> <li>• Purchase of equipment and vehicles</li> <li>• Landfill security</li> <li>• Definition of the rule of use of the landfills</li> </ul>	<ul style="list-style-type: none"> <li>• Have a clear and realistic tender with requirements based on measured and verified data (quantities and composition of waste, leachate quality and flow ...)</li> <li>• Master and rigorously implement the contract and its conditions</li> <li>• Development of knowledge, based on measurements of various operating parameters, shared between delegator and delegate</li> <li>• Cooperation of law enforcement forces to forbid site access to unauthorized persons (especially informal waste pickers) and to livestock</li> <li>• Maintain contractual flexibility on the activities of reuse / recycling / recovery to adapt them to reality and to the evolution of these markets</li> <li>• Workers equipped with proper equipment (including waste pickers)</li> </ul>	<ul style="list-style-type: none"> <li>• Late payments, especially if the service provider has to invest</li> <li>• Poorly managed coordination of the various trades carried out at the landfill, namely in case of a conflict between the collectors and those responsible for waste leveling</li> <li>• Electricity Distribution Company opposed to integrating small production units in its network</li> </ul>
<ul style="list-style-type: none"> <li>• Develop knowledge about the type of waste collected</li> <li>• Identify industrials willing to buy the recovered material</li> <li>• Negotiation of the integration of the waste pickers activities into all activities of the landfill</li> <li>• Maintain access roads in good shape</li> </ul>	<ul style="list-style-type: none"> <li>• Consider the waste pickers / scavengers as partners of the public authority and of the operator of the landfill and negotiate with them on the integration of their activities in all activities at the landfill and in the waste management chain in general</li> <li>• Develop a network that integrates recyclers and that reduces the number and the importance of intermediaries</li> <li>• Develop commercial agreements with companies that use secondary raw materials to reduce price fluctuations</li> <li>• Structure the waste pickers organization to improve their productivity, their working conditions and their selling prices</li> <li>• Establish internal regulations limiting site access to authorized persons only, and imposing rules of conduct and collaboration with waste pickers</li> <li>• Respect the rules regarding the proper equipment required to pick waste</li> </ul>	<ul style="list-style-type: none"> <li>• Not involving the authorities and the police in the management of the site, particularly for the prohibition of access to the site to non-authorized persons</li> <li>• Not incorporating recovery activities from the design phase of the landfill site</li> <li>• Not identifying all reuse/recycling/recovery sector actors and not initiating win-win relationship with the actors to bring real added value to the sector</li> <li>• Not trying to enhance the productivity and to reduce the drudgery of waste pickers' work</li> <li>• Not accompanying the waste pickers in improving their income and their social and health situations</li> </ul>

## STREET CLEANING

The waste collection operator also provides street cleaning services for the following reasons:

- Poor waste collection leads to more cleaning operations;
- The waste generated from cleaning must be removed by collection services;
- Mobile teams of worker managers can easily monitor the two services simultaneously.

## WASTE COLLECTION

It is important to differentiate two main means of waste collection:

• **Door to door collection: in areas suitable for trucks.** It would be difficult to conduct this kind of waste collection along the main asphalted roads where cars are parked along the road sides. This type of collection is more relevant for the planned residential areas that have large roads and buildings or land properties with ample space to store the waste;

• **Collection from communal waste collection points:** in unplanned areas or in communities with roads inaccessible to waste collection trucks.

In areas with waste collection points, pre-collection is also an option. This could be organized by involving the formal or informal sector to collect waste from households in the community and bringing it to the communal waste collection point.

Waste producers could sort their waste, e.g. organic, recyclable materials and other waste, to make resource recovery easier. The pre-collector could then charge different waste management fees for collecting sorted and un-sorted waste, and may also be able to recompense the waste producer for sorting the waste - based on the volume and value of the recovered materials.

The legal and regulatory framework must enable the following:

- Enforce the obligation to have a room or a storage place for waste inside the waste producers' premises, buildings and compounds;
- Enforce the storage of waste inside the waste producer's premises until the day of collection;
- Enforce the requirements around the condition of the waste collected from the waste producers;

- Forbid parking in areas that limit or block the movement of collection trucks;
- Sanction any waste disposal in public areas other than waste placed outside for collection on the day of collection.

## LANDFILL MANAGEMENT

The management of a landfill can involve different types of activities such as:

• **General management and operation of the landfill:** registration and weighing of waste collection trucks arriving to the landfill; unloading of trucks; landfilling, leveling and compaction of waste; maintaining the access roads and tracks; constructing cells; etc.

• **Leachate control and treatment: involving the biological or physical/chemical treatment of water.** Leachate decontamination is very complex because the nature and the composition of the pollutants evolve over time, which necessitates adjusting the process on a regular basis. Moreover, there is no one universal treatment process adapted to any climate and to any household waste composition. Therefore, it is crucial to evolve progressively in this field by developing specific knowledge on the leachates produced, based on the results of the operation of the site. Furthermore, as the means of leveling and covering the waste strongly impact the flow and quality of the leachate produced, this trade is generally conducted by the same company that equips the landfill and carries out waste leveling.

• **Biogas management: the control, monitoring and potential recovery of biogas generated in the landfill.** This activity is more linked to the energy trade than to the waste management. Often, the supplier of the system for biogas conversion and the generator unit operates the equipment and buys the biogas at a price based on its energy value. In the case of electricity production, it is also possible to sell the residual heat (50 to 60 % of the energy of the biogas) contained in the hot water or in steam that is generated.

These activities generally require high investments, with payback times of several years and low workforce numbers. The workforce is generally professionally qualified and specialized. Due to the high investments and specialized competencies needed, longer term service contracts are neces-

sary when involving the private sector in landfill management

The landfill management activities listed above are quite technical and require specialized technologies, equipment and human resources. In order to develop this level of specialization, it is often necessary to operate several landfills to achieve the best economies of scale and distribute research and development efforts across a number of sites. This is one of the waste management activities that typically could be operated by a private contractor.

Three scenarios are generally used to engage the private sector in landfill management:

- **Design, Build, Finance and Operate (DBFO):** The service provider makes the necessary investments using its own financing resources and the public authority pays a price per ton that covers the costs of the investment and of operation;
- **Design, Build and Operate (DBO):** The service provider conducts the construction work and is paid for it as soon as it is completed. Then the public authority pays a price per ton covering the operational costs of the service provider;
- **Separate DBO:** The public authority has the main construction work (enclosure wall, roads, tracks, weight bridge, offices, garages, cells, leachate storage pool, etc.) undertaken by a third party and the service provider makes complementary investments. The public authority pays for the main construction work, and then pays a price per ton to cover the complementary investments and the operational costs of the service provider.

The two last options are more attractive to the market as they reduce the financial risks to the private operator.

## RESOURCE RECOVERY

Resource recovery involves extracting valuable materials and energy from waste such as recycling, composting and waste-to-energy. Resource recovery often requires, or benefits from, sorting of waste. This can be undertaken at the waste producers premises and during waste collection. Many

private waste collectors do not sort waste during collection as it reduces the productivity of the collection teams. Some public authorities also ban the recovery of waste before collection in order to reduce the dispersion of waste and to improve the cleanliness of the public domain.

Waste recycling is formed of three distinct steps, usually conducted by different actors:

- **Step 1: Recovery of reusable or recyclable waste from mixed waste.** This is a labor intensive operation requiring unskilled or minimally skilled workers. The recovered items are sometimes pre-clean and packed before being sold to specialized recyclers or wholesalers. ;
- **Step 2: Buying sorted and packed waste from multiple sites and grouping them at a central site.** This is role is undertaken by the wholesalers and require a means of transport. The wholesalers sometimes perform an intermediary treatment before selling the recovered materials to recyclers;
- **Step 3: The recycling itself, which consists of producing secondary raw materials (possibly combined with other raw materials) that are marketed in the same trade channels as virgin raw materials.** This activity is mainly carried out by manufacturers seeking to lower their production costs.

At present the informal waste pickers or so-called scavengers perform the first step of recovering valuable materials from the waste at the dumpsites in Ibadan. The informal sector could be integrated into the solid waste management value chain and more professional material recovery facilities could be established to improve the recovery of resources as well as the productivity and health of the waste pickers.

Secondary raw materials are in competition with virgin raw materials. They are typically less expensive than virgin raw materials as they rarely have the same level of quality, often contain impurities and require some intermediate treatment before being integrated into the production process.

The raw material commodities market is often unstable and is impacted by events and/or decisions out of the control of local and national actors. This instability affects the purchasing prices for recov-

ered materials from waste, while the costs of recovery process (sorting and packing, etc.) are stable. In this context, initially profitable recovery processes can become unprofitable over time.

Furthermore, intermediaries sometimes take high commissions, while their added value is low. Finally, due to weaknesses in organization and in the ability to achieve a minimum level of investment, the productivity of recovery activities at landfills is sometimes very low and could be significantly improved by bringing in more capable management.

The public sector is often not well-adapted at resource recovery in developing countries. The quality of sorting and packing, which impacts waste picker-related labor costs must adapt very quickly to market fluctuations and the rigid and hierarchical structures of government are not suited to this type of management that requires flexibility and quick reactions. However, the public authority can promote the resource recovery by: the provision of premises and facilities, communication connec-

tions, water and electricity connections and by organizing different favorable activities such as sorting of waste at waste collection points and at the waste producers' premises.

There are several resource recovery initiatives that have been launched in Nigeria that could be applicable for Ibadan:

- WestAfricaENRG are the owner-operator of Nigeria's first Materials Recovery Facility (MRF) situated in Alimosho, Lagos. They recover the valuable fraction of plastic, metal and paper from the municipal solid waste for recycling. The facility was built in 2012 was built on the closed Solous 1 dumpsite under a public-private partnership (PPP) arrangement of Build, Operate, Manage and Transfer with 12 years tenure at a total cost of ₦1.3 billion (USD 6.5 million). The facility has the capacity to receive about 130 waste trucks per day and process more than 2,000 metric tons of waste every day.



**Figure 10:** The Material Recovery Facility (MRF) in Alimosho, Lagos (LAWMA, 2015)

- The World Bank sponsored Nigeria Earth-care Solid Waste Composting Project in Lagos is a state-of-the-art composting facility (World Bank, 2015b). Waste is collected at three food markets and treated to produce organic compost. The high quality compost is then given to Nigerian farmers to use in agriculture and horticulture. As composting avoids the methane emissions that would otherwise be released into the atmosphere and contribute to climate change, the project has been registered as a Clean Development Mechanism (CDM) project under the UNFCCC. It is estimated that it will reduce greenhouse gas emissions by 253,800 metric tons of carbon dioxide per year over 10 years. At its maximum capacity, the compost facility can process 1,500 metric tons of mainly organic waste per day. This reduces emissions, on average, by approximately 253,800 metric tons of carbon dioxide per year. The project employs about 90 workers.
- Waste-to-energy public-private partnerships have been announced in Ibadan (Channels Television, 2015), Lagos (Punch, 2013) and Abuja (Daily Independent, 2015), but none of these projects have been implemented yet. Lagos Waste Management Authority has piloted a small waste-to-energy project that produces biogas from organic waste from Ikosi Market and is used to operate 2kVA generator at the market.

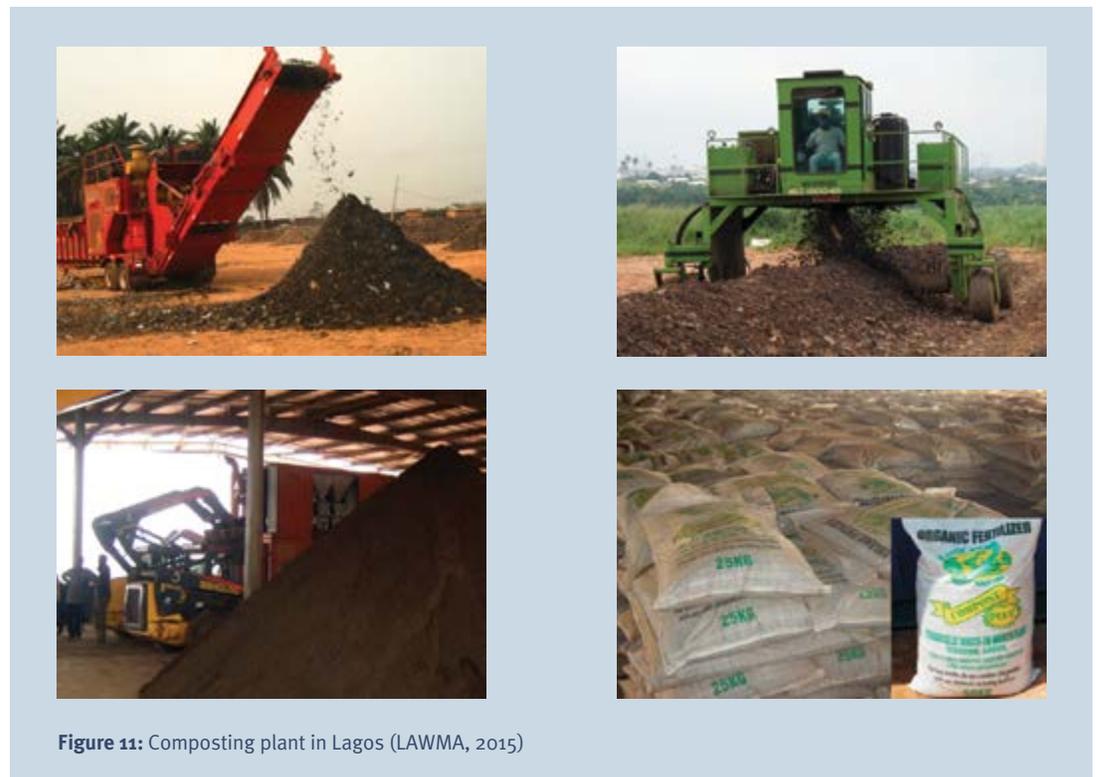


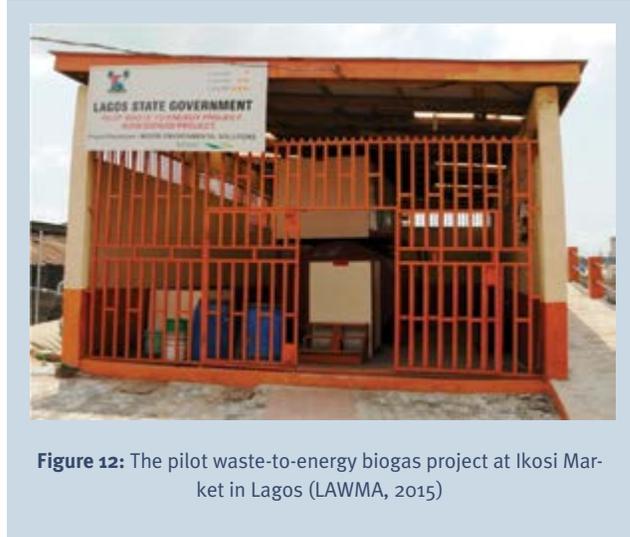
Figure 11: Composting plant in Lagos (LAWMA, 2015)

## DRAFTING OF PROVISIONS WITHIN A WASTE SERVICES AGREEMENT

There are a number of potential provisions that could be contained within a Waste Services Agreement (WSA) between OYOWMA and a private waste contractor. The specific details of the Waste Services Agreement and the applicability of the provisions below will depend on the choices made regarding the options already described in this chapter. The most important factors related to the contractual provisions are:

- the scope of the works/services being requested;
- how payment for the delivery of the works/services is to be received by the private waste company; and
- the expected size and capability of the private sector counter-party.

Annex 2 – Potential Waste Services Agreement Provisions provides details of the potential contractual provisions and considerations that need to be made.



# RECOMMENDATIONS AND OPTIMIZATION PLAN FOR PSP

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This section presents the study's recommendations and proposes an action plan for optimizing PSP in SWM activities in Ibadan metropolitan area. The action plan is based on the main challenges observed throughout the study (each of the challeng-

es identified are addressed by the action plan); the main recommendations from the stakeholders and the best practices from the case studies; the different options possible for improving PSP; and, the assessment of the current situation of SWM in Ibadan.

## MAIN RECOMMENDATIONS

Based on the assessment of the analyses and discussions with stakeholders in this project, a set of recommendations for Oyo State for how private sector participants could be more actively involved in improving the efficiency and quality of solid waste management in Ibadan metropolitan area (see Figure 13: Overview of actions to improve private sector participation in solid waste management activities in Ibadan). The two main focus areas with high priority are:

**1. Ensure cost recovery of waste management services and increase the revenue collection of waste management fees from waste producers.** In order to engage private companies in solid waste management activities, adequate and stable revenues for providing waste management services must be ensured. Full cost recovery of waste management is not currently possible in Ibadan, so Oyo State must secure funding from other sources. The first step is to determine

the true costs of waste management and then establish a financial model to cover the capital and operational expenditures for solid waste management. The next step is then to determine affordable and acceptable waste management fees for each type of waste producer (e.g. households, commercial businesses and industrial companies) in each of the different areas of Ibadan. Finally, Oyo State must support the private sector participants in collecting the waste management fees through an improved billing system and strict enforcement.

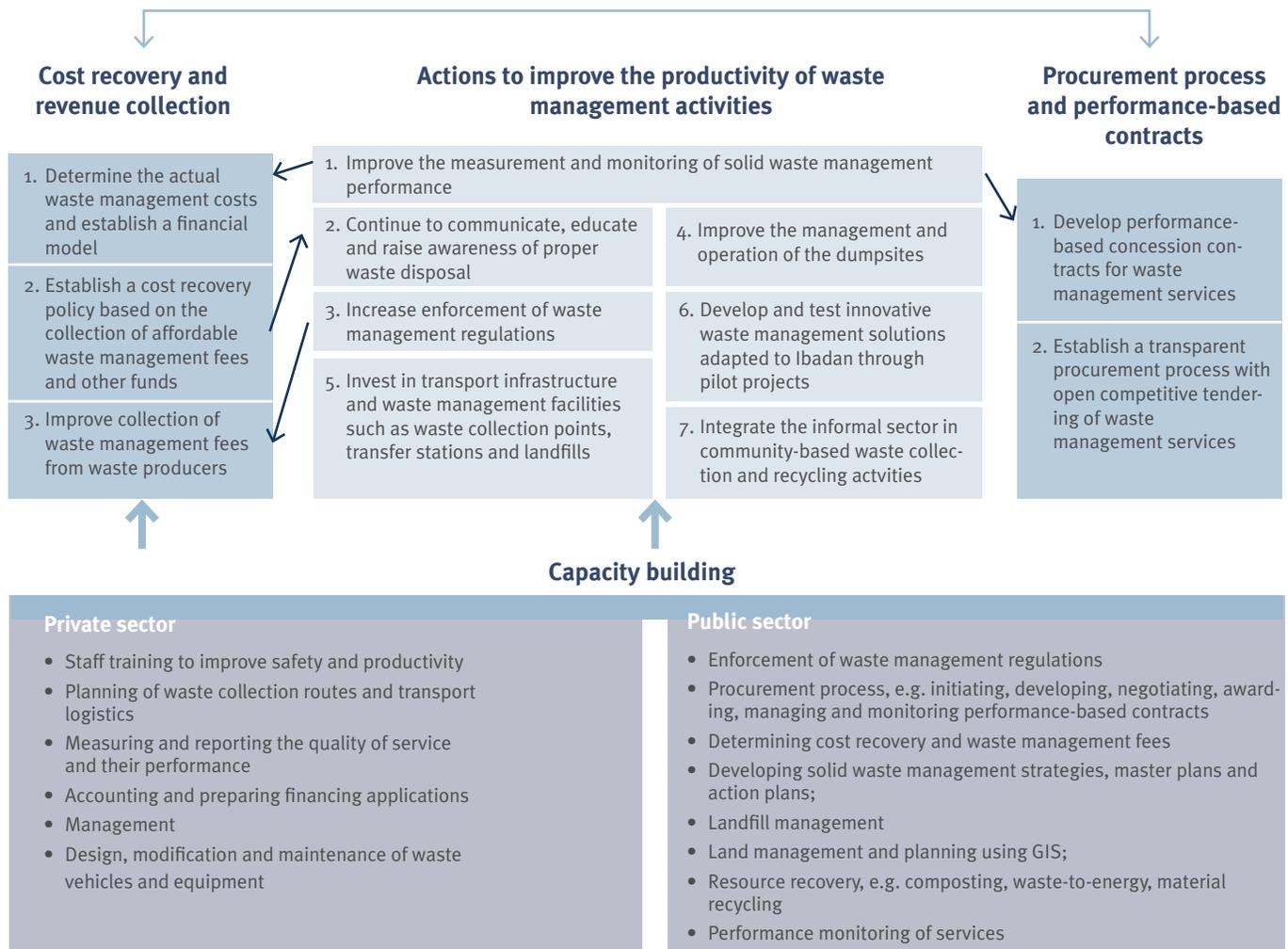
**2. Establish a transparent procurement process for private sector participants and develop performance-based contracts.** Another condition for successful public-private partnerships is clearly defined and balanced waste services agreements. Oyo State should develop performance-based contracts (with agreed incentives and sanctions) considering the potential concession agreement provisions proposed in this

study. This includes aspects such as extending the duration of contracts, allocating greater collection areas, defining service quality levels and introducing investment commitments. In order to attract private sector participants, the procurement process should be transparent and based on open competitive tendering. This requires that Oyo State has the competencies and capacity to initiate, develop, negotiate, award, manage and monitor such public-private partnerships.

Besides these two main areas Oyo State should over time implement a variety of measures that would improve the productivity of public and private sector waste management activities. First and foremost, OYOWMA should improve the measurement and monitoring of SWM performance. This is needed to determine the actual waste management costs, establish the financial model and serve to define service quality levels and incentives for the private contractors. Communication, education

and awareness-raising efforts should continue to change attitudes and behaviors of the general public related to waste disposal and payment of waste management fees. This should be complemented by strong enforcement of waste management regulations, particularly with regards to payment of waste fees. Improvements in transport infrastructure and waste management facilities such as communal waste collection points, transfer stations and proper landfills will require significant investments, but will reduce operational costs for both the private and public sector. Supporting pilot projects in waste management adapted to Ibadan is a good way of testing cost-effective innovative solutions before rolling them out on a greater scale. Finally, the informal sector should be involved through community-led initiatives to improve waste collection in low income areas and material recycling.

The recommended actions are interlinked, e.g. the performance-based contracts are dependent on the



**Figure 13:** Overview of actions to improve private sector participation in solid waste management activities in Ibadan

cost recovery and financial model. The actions to improve waste management productivity contribute to lowering costs and improving the quality of services.

To support the above mention actions, a range of areas in need of capacity building were identified. Areas for strengthening skills, competencies and abilities necessary for effective solid waste management were proposed for both the private and public sector.

Improving PSP is a comprehensive process that requires extensive interventions, consultations and strong regulation of both the waste producers and private operators in the waste management chain. It requires the reliable collection of waste management data for decisions to be based on actual per-

formance. It also requires significant investment to build infrastructure and human capacity that will improve productivity to create a viable and sustainable waste management system. If implemented correctly with incremental step-wise increases in waste management fees followed by real improvements in the quality of service, the level of public investment required will reduce over time, as the private sector demonstrates viability and delivers better services.

The actions to how the PSP can improve the efficiency and quality of solid waste management in Ibadan metropolitan area are detailed in the PSP optimization plan in the next section.

## **PLAN PSP OPTIMIZATION IN SOLID WASTE MANAGEMENT ACTIVITIES IN IBADAN**

Table 14 provides an overview of actions, resources required and a proposed timeline for optimizing private sector participation in SWM activities in Ibadan. The plan was developed based on the identification of the main challenges, the main recommendations from the various stakeholders and the conditions for success identified previously in this

report. Most of the proposed optimization actions should be conducted during the next two to three years, as can be seen in the table below.

## ASSUMPTIONS

For the calculations of the staff costs, the assumptions listed in the table below were used<sup>12,13</sup>:

<b>LOCALLY RECRUITED PERMANENT STAFF</b>	<b>ANNUAL SALARY (USD/Y)</b>	<b>ANNUAL SALARY (₦/Y)</b>
Minimum wage	3,150	630,000
Administrative employee	4,410	882,000
Management employee	7,560	1,512,000
GIS specialist	30,000	6,000,000
Inspector/Surveyors (checking the quality of the waste collection services)	12,000	2,400,000
Sworn inspectors	12,000	2,400,000
Law enforcement employee (checking that residents pay for waste collection)	6,300	1,260,000
Statistician	12,000	2,400,000
Economist	18,000	3,600,000
Auditor	18,000	3,600,000
Lawyer	36,000	7,200,000
<b>EXPERTS ENGAGED ON SHORT TERM CONTRACTS<sup>14</sup></b>	<b>DAILY SALARY (USD/D)</b>	<b>DAILY SALARY (₦/D)</b>
Economist	300	60,000
Accountant	100	40,000
Expert accountant	300	60,000
Auditor	450	90,000
Lawyer	300	60,000
Waste management expert	300	60,000

This action plan is designed for strategic planning, to provide an overview of the possibilities of PSP optimization. Therefore, every line of this action plan needs to be detailed further as each action includes several sub-actions. Moreover, many of the actions are inter-connected, and the estimation of the investment and operation costs of one specific action can depend upon the results of another action.

Decision makers using this action plan should also keep in mind the conditions for success and the conditions for failure developed in the previous chapter of this report.

<sup>12</sup> Based on discussion with a number of sources in Nigeria: waste collectors, OYOWMA officials and other Oyo State civil servants, locals currently employed in the stated roles, etc.

<sup>13</sup> The rates can vary widely, depending on the level of qualifications, proficiency, etc.

<sup>14</sup> The costs of engaging experts on short term contracts will be significantly higher than the cost of permanent local staff.



**Table 14:** Overview of costs and benefits of each action to optimize PSP in SWM in Ibadan<sup>15</sup>

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED
1.1	General issues	The poor state of the roads hinder the performance of the waste management services and the productivity of the teams	Continuously improve the state of the roads and traffic	<ul style="list-style-type: none"> <li>Have the collection rounds recorded in a GIS used by OYOWMA and the collection providers</li> <li>Discussion between the collectors, OYOWMA, the services in charge of the state of the roads to develop a coordinated program prioritizing the roads improvements</li> </ul>	<ul style="list-style-type: none"> <li>GIS Specialist</li> <li>Integrate the obligation to report the collection rounds in the concession contracts</li> <li>Initiate a coordination cell for waste/roads within Oyo State</li> </ul>
1.2	General issues	The private service provider teams are not motivated to deliver a good quality service and high productivity	Introduce financial motivation and incentives for staff on the productivity and the quality of work	<ul style="list-style-type: none"> <li>Integrate quality and quality measurement requirements in the concession agreement contracts</li> <li>Develop measurements of quality</li> <li>Integrate penalties for bad qualities which may lead to contract breach and disqualification of the service providers for other markets</li> <li>Develop an external claims management service (mobile app to introduce and follow the complaints) producing reports and statistical data on the complaints and transfer them to the related collectors</li> </ul>	<ul style="list-style-type: none"> <li>Develop a quality rating system</li> <li>Hire quality surveyors</li> <li>Mobile devices for real time surveys</li> <li>GIS database of the quality monitoring</li> </ul>
1.3	General issues	The solid waste management strategy and action plan is poorly written, communicated and discussed	Build OYOWMA' capacity to plan, regulate, follow-up, monitor and draft the technical and administrative requirements governing the services provided	<ul style="list-style-type: none"> <li>Strengthen the local capacities through training/support</li> <li>Proposal of a strategy and of an action plan by the services of OYOWMA to the board of OYOWMA</li> <li>Occasional mobilization of specific experts to quickly implement the actions</li> <li>Clear organization chart</li> <li>Computer based process to record the data and automatically produce indicators</li> </ul>	Specific expertise depending on the action validated by the board of OYOWMA

15 The estimations of the investments and the operations are given for individualized actions but some cost reduction is highly possible by grouping the proposed actions

The estimations are given for the prospect of a collection conducted at 100% by the private sector and considering that the 4 dumpsites are kept

	ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RE-SPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
	Unknown at this stage further investigation required	Half-time salary of a GIS specialist in OYOWMA (₦3,000,000/year)	<ul style="list-style-type: none"> <li>• Enable the use of bigger capacity trucks</li> <li>• Reduce the number of break downs</li> <li>• Improve the productivity of the teams</li> <li>• Improve the coverage of the collection services</li> </ul>	OYOWMA	Service Providers	Continuous efforts
	<ul style="list-style-type: none"> <li>• ₦2,000,000 : 3 training days per surveyors</li> <li>• ₦15,000,000 for mobile devices (N300,000 per mobile device per surveyor)</li> <li>• ₦6,200,000 to implement the system (Database expert for 40 days (N100,000/d) + 10 days on the ground (N120,000/day) + 10 days debugging and finalization (N100,000/day))</li> <li>• ₦15,000,000 for mobile devices (N300,000 per mobile device per surveyor)</li> <li>• ₦6,200,000 to implement the system (Database expert for 40 days (₦100,000/d) + 10 days on the ground (₦120,000/day) + 10 days debugging and finalization (₦100,000/day))</li> </ul>	<ul style="list-style-type: none"> <li>• ₦120,000,000/year: 50 surveyors at ₦2,400,000/year</li> <li>• (1 surveyor per 100,000 inhabitants)</li> <li>• ₦2,400,000/year for replacing / repairing the mobile devices</li> </ul>	<p>The service providers will be paid depending on the quality of the service provided through sanctions and penalties</p> <p>Thus they will motivate their team accordingly</p>	OYOWMA / LGA	OYOWMA / LGA / Service Providers / Oyo State	1 to 2 years
	₦6,000,000/year for capacity building (1 GIS expert, 1 Database expert, 1 Quality expert/law expert at ₦60,000/day each for 4 days per quarter of training and 4 days per quarter to implement corrective actions)	Not determinable	<ul style="list-style-type: none"> <li>• Enable the production of reliable and checked financial, technical, environmental and statistical data</li> <li>• Help professionalization of the waste management</li> <li>• Quality requirements more demanding</li> <li>• Better cost and price control</li> </ul>	OYOWMA	LGA / Oyo State	1 to 5 years

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED
1.4	<b>General issues</b>	The service providers do not have methods to evaluate the performance, quality and productivity of their work	Develop methods and build the service providers' capacity to evaluate the performance, quality and productivity of their work	<ul style="list-style-type: none"> <li>• Training/support for the methods to monitor mobile teams</li> <li>• Weighing of the trucks in the dumpsites</li> <li>• Data from 1.2 to evaluate the work of the employees and motivate them financially</li> <li>• GPS monitoring of the vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Receive the results for 1.2 in real time from OYOWMA</li> <li>• Master the GPS monitoring methods</li> <li>• Receive the data from 4.2</li> </ul>
1.5	<b>General issues</b>	The service providers do not have adequate capacity to properly evaluate the financial and management aspects of their activities	Develop methods and build the service providers' capacity in financing and management	<ul style="list-style-type: none"> <li>• Training/support for: accountancy, taxes, unit cost, financial applications, social care of the employees, etc.</li> <li>• Willingness of the private operators to receive the training</li> </ul>	<ul style="list-style-type: none"> <li>• Instructors</li> <li>• Accountants</li> <li>• Accountancy software</li> </ul>
1.6	<b>General issues</b>	Contractual framework not supportive of the professionalization of the waste collectors	<ul style="list-style-type: none"> <li>• Develop investment commitment in the contract (obligation to deposit 25% of the investment over a 18 months period)</li> <li>• Ensure the allocation of budget for guaranteed payment of the service providers</li> <li>• Allow processes to renegotiate the contracts with the service providers</li> </ul>	Actions 1.2, 1.3, 1.4, 1.5, 3.1, 4.1, 4.2, 4.3, 4.6	<ul style="list-style-type: none"> <li>• Lawyer</li> <li>• All data collection actions</li> <li>• A bank receiving monthly deposits from the companies in order to pay the non-borrowed part of the investments</li> <li>• OYOWMA checks the guarantee of capacity of investment of the Private Operators</li> </ul>
2.1	<b>Waste generation</b>	The waste is scattered around the collection containers causing aesthetic degradation and increase in disease vectors	<ul style="list-style-type: none"> <li>• Communication (awareness raising, information, law enforcement)</li> <li>• Inform the public about the benefits they can expect from the services provided</li> </ul>	<ul style="list-style-type: none"> <li>• Local regulations enabling low enforcement</li> <li>• Communication team specialized in behavior modification</li> <li>• Separate the recoverable waste from other waste in the waste collection points</li> </ul>	<ul style="list-style-type: none"> <li>• Lawyer</li> <li>• Communication firm</li> </ul>
2.2	<b>Waste generation</b>	Waste is scattered around the collection containers causing aesthetic degradation and increase in disease vectors	Have an appropriate number of waste containers and bins and locate them properly (near schools, markets, shops, administrations, etc.)	<ul style="list-style-type: none"> <li>• GIS of the city</li> <li>• Work in partnership with the communities</li> <li>• Work in partnership with the services in charge of the roads</li> <li>• Enforce the obligation to dedicate space for this equipment in every development project in the city</li> <li>• Enforce the equipment of a given number of waste collection points in the concession agreement contracts</li> </ul>	<ul style="list-style-type: none"> <li>• GIS Specialist (Action 1.1)</li> <li>• Buying of the containers by the collection operators</li> </ul>

	ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
	<ul style="list-style-type: none"> <li>• See Action 4.2 for the weigh-bridges</li> <li>• ₦50,000 per collection vehicles (passive tracking)</li> <li>• ₦2,000,000: 3 training days per private operator and per administrative employee of OYOWMA</li> </ul>	₦200,000/year: 1 day per week of the administrative employees of OYOWMA	<ul style="list-style-type: none"> <li>• Improve the quality and the productivity of the services to build trust overtime with the public</li> <li>• Help the professionalization of the waste management</li> <li>• Master the factors impacting productivity</li> </ul>	Service providers / OYOWMA	LGA / Oyo State	1 year
	₦12,000,000 : 3 days of training for the boss of each private collector (200 people)	₦1,500,000/year/Private Collector: Salary of the accountant (1 day every 2 week)	<ul style="list-style-type: none"> <li>• Improve the quality and the productivity of the services to build trust overtime with the public</li> <li>• Help the professionalization of the waste management</li> <li>• Sort out the good managers from the bad managers</li> </ul>	Service providers / OYOWMA	LGA / Oyo State	1 year
	₦1,800,000: 30 days of an expert accountant	<ul style="list-style-type: none"> <li>• Accountant from Action 1.5</li> <li>• ₦35,000/year: 10 days of an administrative employee of OYOWMA</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the quality and the productivity of the services</li> <li>• Improve the relationship between the private sector and the public sector</li> <li>• Prove the capacity to repay loans, give credence to the operators</li> <li>• Sort out good managers from the bad managers</li> <li>• Help the professionalization of the waste management</li> </ul>	OYOWMA / Service providers	LGA / Oyo State	2 to 3 years
	0	₦10/habitants/year	<ul style="list-style-type: none"> <li>• Change the behaviors</li> <li>• Reduce the proliferation of pests</li> <li>• Improve the aesthetics of the city</li> <li>• Improve the productivity of the collection teams</li> <li>• Reduce the cost of the collection</li> </ul>	OYOWMA	LGA / Oyo State	1 to 10 years
	This is a cost reduction action for the operators (depending on the evolution of the roads, the kind of containers, and the kind of trucks chosen)	This is a cost reduction action for the operators (depending on the evolution of the roads, the kind of containers, and the kind of trucks chosen)	<ul style="list-style-type: none"> <li>• Improve the productivity and reduce the amount of waste spilled</li> <li>• Improve the cleanliness of the city, reduce the damaging of the roads</li> </ul>	Private contractors / OYOWMA	LGA / Oyo State	1 to 10 years

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED	
2.3	<b>Waste generation</b>	The current rules and regulations regarding solid waste management are not adequately enforced, and this means existing attitudes and behavior regarding waste disposal remain entrenched	OYOWMA and the Ministry of Environment and Habitat, adequately enforce the laws which would protect all stakeholders	<ul style="list-style-type: none"> <li>• Develop judicial instruments (from the problems encountered) leading to an actual punishment for deviant behaviors</li> <li>• Have a legal and practicable solution for all the kinds of waste produced (namely C&amp;D waste and green waste)</li> </ul>	<ul style="list-style-type: none"> <li>• Imaginative and constructive lawyer</li> <li>• Mobile devices to keep track and document the problem encountered (pictures, notes, etc.)</li> </ul>	
2.4	<b>Waste generation</b>	Waste operators have trouble getting paid in some areas	Compel all households to pay fees for waste collection	<ul style="list-style-type: none"> <li>• Specific regulation requiring the population to prove they patronized a waste collector</li> <li>• Law enforcement units trained to manage the complaints of the waste collectors on waste producers that do not pay waste management fees</li> <li>• Evidence of payment sealed, numbered and protected against copy produced by the State (see Action 4.1)</li> </ul>	Lawyer	
2.5	<b>Waste generation</b>	The packing of the waste varies from one part of the city to the other	Define, develop and enforce the rules for waste packing	<ul style="list-style-type: none"> <li>• Develop legal instruments (from the problems encountered) leading to an actual punishment for deviant behaviors</li> <li>• Have a legal and practicable solution for all the kind of waste produced (namely C&amp;D waste and green waste)</li> </ul>	<ul style="list-style-type: none"> <li>• Imaginative and constructive lawyer</li> <li>• Mobile devices to keep track and document the problem encountered (pictures, notes, etc.)</li> </ul>	
3.1	<b>Street &amp; drain cleaning</b>	There is no planning of the cleaning services provided by OYOWMA	Identification of public spaces, markets, primary and secondary roads to clean and definition of cleaning frequencies	<ul style="list-style-type: none"> <li>• GIS with the characterization of all the areas to be cleaned</li> <li>• Measurement of the time needed for the cleaning</li> </ul>	GIS Specialist (Action 1.1) for 4 months	
3.2	<b>Street &amp; drain cleaning</b>	The quality of the collection services hinders the quality of street cleaning	Achieve a complete and efficient collection not only of household waste but also of inert waste (e.g. construction and demolition waste) and green waste (e.g. garden waste)	See Waste Collection		

	ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
	<ul style="list-style-type: none"> <li>• ₦3,000,000 for the initial study (1 lawyer for 20 days at N 60,000/day + 3 stakeholders workshops for 20 people at N600,000 each)</li> <li>• ₦15,000,000 for mobile devices ( N300,000 per mobile device per inspector)</li> </ul>	<ul style="list-style-type: none"> <li>• ₦120,000,000/year : 50 inspectors at N2,400,000/year</li> <li>• ₦2,400,000/year for replacing/repairing the mobile devices</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate illegal dumping of waste both by waste producers and waste collectors</li> <li>• Clean city</li> <li>• Productivity of the collection team improved</li> </ul>	Oyo State	OYOWMA / LGA	3 to 10 years
	₦1,200,000: 3 days of training for the law enforcement units	₦37,800,000/year : 30 law enforcement employees at ₦1,260,000\$/year	<ul style="list-style-type: none"> <li>• Improve the security of the payment</li> <li>• Reduce the fees for the waste producers</li> <li>• Enable to enforce high quality and productivity standards</li> </ul>	Oyo State / LGA	OYOWMA / Service providers	6 months
	<ul style="list-style-type: none"> <li>• ₦3,000,000 for the initial study (1 lawyer for 20 days at ₦ 0,000/day + 3 stakeholders workshops for 20 people at N600,000 each)</li> <li>• ₦15,000,000 for mobile devices (N300,000 per mobile device per inspector)</li> </ul>	<ul style="list-style-type: none"> <li>• ₦120,000,000/year: 50 inspectors at N2,400,000/year</li> <li>• ₦2,400,000/year for replacing / repairing the mobile devices</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the productivity</li> <li>• Improve the quality of the service provided</li> <li>• Reduce the amount of waste spilled on the roads due to bad packing</li> </ul>	Oyo State	OYOWMA / LGA	3 to 10 years
	0	Half-time salary of a GIS specialist in OYOWMA (N3,000,000/year)	<ul style="list-style-type: none"> <li>• Have a clear definition of what needs to be done</li> <li>• Capacity to communicate this definition of the service to all the stakeholders</li> </ul>	OYOWMA / LGA	OYOWMA / LGA	4 months
			Reduce the amount of waste to be removed from the streets and drains			

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED
3.3	<b>Street &amp; drain cleaning</b>	The cleaning team does not use appropriate cleaning equipment	Provide the workers with the appropriate equipment, train them for its proper use and sanction loss of equipment	<ul style="list-style-type: none"> <li>Buy several models, test them, conduct ergonomics studies (in partnership with local universities) to have a model well adapted to the local constraints</li> <li>Have a plan for the disposal of the quantities collected by the cleaning service</li> </ul>	<ul style="list-style-type: none"> <li>Workshop for the manufacturing of the prototypes</li> <li>University team to follow up the work and the impressions of the users</li> <li>Design of at least three evolutions of the prototypes</li> <li>Definition of the final design</li> <li>Production of the final design</li> </ul>
3.4	<b>Street &amp; drain cleaning</b>	The cleaning team does not use appropriate cleaning equipment	Have safe storage areas for sweeping equipment near the areas of intervention, in locations secure from theft and vandalism	<ul style="list-style-type: none"> <li>GIS including the zoning of the cleaning areas</li> <li>Definition of the cleaning teams</li> <li>Identification of 20 to 50m<sup>2</sup> areas to building a storage facility</li> </ul>	<ul style="list-style-type: none"> <li>GIS Expert</li> <li>20 to 50m<sup>2</sup> area to build a storage facility for every team of 30 to 50 sweepers</li> </ul>
4.1	<b>Waste collection</b>	There is insufficient data and information on the levels of revenue that can be achieved within the areas franchised for waste collection	<ul style="list-style-type: none"> <li>Provide evidence of payment (receipts) printed by the State with the fee paid written on it</li> <li>Account the receipt books handed to each service provider and inform the population that it must pay only in exchange for this kind of receipt</li> <li>Print the date of payment and month concerned on the receipts (done by the service providers)</li> <li>This receipt should be kept as a proof that the waste producer patronized a waste collector</li> </ul>	<ul style="list-style-type: none"> <li>A good knowledge of the actual and full prices of waste collection</li> <li>A good knowledge of the realistic service coverage rates</li> <li>Consultation between OYOWMA and the collectors</li> <li>Communication to the population in order to keep the receipts</li> <li>Law enforcement actions against people who cannot present a receipt</li> <li>Start at first on pilot areas for at least one year before generalizing (first to the more affluent districts)</li> <li>For low income area, see action 4.4</li> </ul>	<ul style="list-style-type: none"> <li>OYOWMA officials</li> <li>Bosses of the private collection companies</li> <li>Specialized printer (fiscal stamps printer for example)</li> <li>Communication team</li> <li>Sworn inspectors</li> <li>Regulatory framework enabling to prosecute households not able to present a receipt</li> <li>Lawyer</li> </ul>
4.2	<b>Waste collection</b>	There are no normalized measurements of the quantity of waste delivered to the dumpsites	Install a weighbridge in each dumpsite with an computer system with 3G to transfer in real time the results of the weighing to OYOWMA	<ul style="list-style-type: none"> <li>Design the layout of the entrance of the dumpsites correctly</li> <li>Buy and install a weighing system with maintenance contracts of at least five years</li> </ul>	<ul style="list-style-type: none"> <li>Weighbridges</li> <li>Databases</li> <li>Statistician to analyze the data and produce indicators</li> </ul>

ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
<ul style="list-style-type: none"> <li>• ₦16,000,000 (₦12,000-₦16,000 per broom/shovel/cart)</li> <li>• ₦600,000 preliminary assessment (5 field inspectors for 5 days at ₦10,000/day each + 1 expert for benchmarking and analysis for 5 days at ₦60,000/day)</li> <li>• ₦2,400,000 for the design of the prototypes: ₦800,000 for each prototypes (₦260,000 for the production of the prototype + 5 field inspectors to monitor the use of the prototype for 5 days at ₦10,000/day each + 1 expert for 5 days at ₦60,000/day)</li> </ul>	<p>₦4,000,000 (₦4,000 per broom / shovel / cart)</p>	<p>Reduce the difficulty of the job and improve the productivity</p>	<p>OYOWMA / LGA / Cleaning service providers</p>	<p>OYOWMA / LGA / Cleaning service providers</p>	<p>6 months</p>
<ul style="list-style-type: none"> <li>• ₦100,000,000 for the storage facilities (about 40 facilities throughout the city 40m<sup>2</sup> each at ₦60,000/m<sup>2</sup> + study and monitoring fees)</li> <li>• ₦1,200,000 for the initial GIS study : GIS expert for 20 days (₦60,000/day)</li> </ul>	<p>₦3,000,000 for maintenance (3% of the investment)</p>	<ul style="list-style-type: none"> <li>• Promotion of the work</li> <li>• Improve the efficiency of the work</li> <li>• Dumping of the waste of the cleaning services by the collection services</li> <li>• Longer equipment life</li> </ul>	<p>OYOWMA / LGA</p>	<p>OYOWMA / LGA</p>	<p>1 to 3 years</p>
<ul style="list-style-type: none"> <li>• ₦1,200,000 for the regulatory framework (1 lawyer for 20 days at ₦60,000/day)</li> <li>• ₦200,000 for the printing of the receipts</li> <li>• ₦1,200,000 for the precise and scientific follow up of the pilot areas (1 scientist for 20 days at ₦60,000/day)</li> <li>• ₦600,000 for the training of the inspectors (2 training at ₦300,000 each)</li> <li>• A safe box to store the receipt books for OYOWMA</li> </ul>	<ul style="list-style-type: none"> <li>• ₦200,000/year : 1 employee, 1day/week to monitor the receipt books and analyze the reports from the collectors regarding the collected fees</li> <li>• ₦12,000,000/year : 5 sworn inspectors for the pilot areas</li> </ul>	<p>The private collectors and the government will have a better knowledge of the revenues that can be generated which will form the basis of the projected remuneration of the private collectors</p>	<p>OYOWMA / Private contractors</p>	<p>LGA / Oyo State</p>	<p>2 years (1 years for preparation, 1 year for the pilot areas)</p>
<p>₦40,000,000 (4 weighbridges at ₦10,000,000 each)</p>	<ul style="list-style-type: none"> <li>• ₦5,000,000/year for maintenance (database maintenance and upgrading, electronic of the weighing system, calibration at least twice a year, replacement of the captors, damage related to rain or thunder, etc.)</li> <li>• ₦600,000/year (25% of the salary of the statistician)</li> </ul>	<p>Reliable statistical data</p> <ul style="list-style-type: none"> <li>• New possibilities to pay the waste collection services</li> <li>• Possibility to correlate this data with other available data (demographic, cost recovery, etc.) to produce management indicators for better decision-taking</li> </ul>	<p>OYOWMA / Potential dumpsite operator</p>	<p>Company specialized in weighing systems / University of technical institution to produce new knowledge from the data generated</p>	<p>6 months for the implementation  (continuous effort)</p>

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED
4.3	<b>Waste collection</b>	Currently there is no financial model to estimate the cost of solid waste management in Ibadan	<ul style="list-style-type: none"> <li>The financial model for investments and operation of waste management activities in Ibadan should be established. This should define the fees that need to be collected to cover the costs of operating and upgrading waste management to ensure that the operators are adequately remunerated. The fees/taxes collected should depend on the affluence of the waste collection areas.</li> <li>Include the obligation to provide the information required to establish the financial model in the contracts with private contractors</li> </ul>	<ul style="list-style-type: none"> <li>Actions 1.4,4.1 and 4.2 achieved with the expected results</li> <li>Concession agreements should be improved to integrate the commitment to deliver data quarterly to OYOWMA (operational reporting, financial reports, discounting of assets, etc.)</li> <li>Build the capacity of the private collectors so their teams can produce the data required</li> </ul>	An economist working one month every six months on the analysis of the reports delivered by the private sector
4.4	<b>Waste collection</b>	Waste operators have trouble to get paid in some areas and some areas are not easy to reach by trucks specifically in low income districts where door to door collection cannot be done	<ul style="list-style-type: none"> <li>To foster community led collection and empowering community associations to enforce the collection of waste into waste collection points</li> <li>Inform the waste producers about the benefits they can expect from the services provided</li> <li>Apply actions from 4.1 to these community associations</li> </ul>	<ul style="list-style-type: none"> <li>A good knowledge of the actual and full prices of waste collection</li> <li>A good knowledge of the realistic service coverage rates</li> <li>Consultation between OYOWMA and the collectors</li> <li>Communication to the communities in order to keep the receipts</li> <li>Law enforcement actions against communities who cannot present a receipt</li> <li>Start at first on pilot areas for at least one year before generalizing</li> <li>Try a Pay-As-You-Throw approach in some pilot areas and different money collection option (community money collection among others)</li> <li>Start at first on pilot areas for at least one year before generalizing</li> </ul>	<ul style="list-style-type: none"> <li>OYOWMA and Oyo State officials</li> <li>Bosses of the private waste collection companies</li> <li>Community leaders</li> <li>Specialized printer (fiscal stamps printer for example)</li> <li>Communication team</li> <li>Sworn inspectors</li> <li>Regulatory framework enabling to prosecute communities not able to present a receipt</li> </ul>

ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
The investments are made in Actions 1.4, 4.1 and 4.2	₦600,000/year : Salary of the economist (40 man day per year)	<ul style="list-style-type: none"> <li>• More precise concession agreements</li> <li>• More accurate knowledge about the costs and revenues</li> <li>• Possibility to write open tender offer with an accurate estimation of the cost and the fees of the services and the quality of the service demanded clear and communicable to the waste producers</li> <li>• Price of the service justified by the open tender process</li> </ul>	OYOWMA / Private contractors	LGA / Oyo State	2 to 5 years
<ul style="list-style-type: none"> <li>• ₦1,200,000 for the regulatory framework (1 lawyer for 20 days at N60,000/day)</li> <li>• ₦200,000 for the printing of the receipts</li> <li>• ₦1,200,000 for the precise and scientific follow up of the pilot areas (1 scientist for 20 days at N60,000/day)</li> <li>• ₦600,000 for the training of the inspectors (2 training at N300,000 each)</li> <li>• A safe box to store the receipt books for OYOWMA</li> </ul>	<ul style="list-style-type: none"> <li>• ₦200,000/year : 1 employee, 1 day/week to monitor the receipt books and analyze the reports from the collectors regarding the collected fees</li> <li>• ₦12,000,000/year : 5 sworn inspectors for the pilot areas</li> </ul>	Enable collectors to access to bank loans and to buy better quality equipment along with securing the market for potential bigger investors	OYOWMA / Oyo State / LGA / Private contractors / Community leaders		2 years (1 years for preparation, 1 year for the pilot areas)

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED	
4-5	<b>Waste collection</b>	No incentives, financial or otherwise are offered by the Oyo State Government	Oyo State Government could provide incentives to the PSP operators especially those working in the low income areas when allocating waste collection areas	<ul style="list-style-type: none"> <li>• Actions 4.2 and 4.3</li> <li>• Transfer of all the operational costs regarding waste management by OYOWMA and LGA to a dedicated account to pay the private collectors in these areas</li> <li>• Payment of the collectors per ton of waste collected in these areas</li> </ul>	<ul style="list-style-type: none"> <li>• OYOWMA, LGA and Oyo State officials for the governing of this account and of the services provided</li> </ul>	
4-6	<b>Waste collection</b>	Contracts for the private contractors are only renewed every year – too short to encourage long-term investments and attract financing	Develop concession contracts lasting several years, the contracts may first be extended to 2 or 3 years as a transition and then the contract duration should be preferably at least 7 to 8 years	Actions 1.4, 4.1, 4.2, 4.3, 4.4	A lawyer and an economist	
4-7	<b>Waste collection</b>	Inadequate maintenance and repair facilities for trucks, i.e. garage and engineering equipment, as well as the difficulty of getting spare parts	Oyo State offers lands and facilities to attract companies selling and maintaining heavy-duty vehicles (minimum two areas of 1ha each)	<ul style="list-style-type: none"> <li>• Identify two potential heavy-duty vehicles resellers in Nigeria</li> <li>• The resellers should master the maintenance of the vehicles and have an agreement with at least two or three renowned brand of trucks</li> <li>• Improve the cash flow of the private operators</li> </ul>	<ul style="list-style-type: none"> <li>• 2ha of industrial area connected to the networks (road, electricity, water, etc.)</li> <li>• Attractive financial offer, for instance:</li> <li>• provision of the land for the first 20 years and definition of the buying price at the term of the 20 years</li> <li>• tax facilities, employee training, etc.</li> </ul>	
4-8	<b>Waste collection</b>	Areas allocated to Private Collectors are too small	Develop a zoning of the city providing balanced collection areas (mix between low/middle/high income areas are economically balanced areas) and leading to a daily tonnage corresponding to at least five collection trucks	Actions 4.1, 4.2, 4.3, 4.4	<ul style="list-style-type: none"> <li>• Specialized consulting firm (1 senior engineer, 1 junior engineer, 1 technician)</li> <li>• Workshop between OYOWMA and the private operators</li> </ul>	
4-9	<b>Waste collection</b>	Trucks not adapted to the roads in Ibadan	Mobilize advanced technical expertise (an engineering firm specialized in mechanical engineering) to produce designs, manufacturing templates, mounting and maintenance instructions required to equip four-wheeled medium size trucks (five to eight tons) according to the needs expressed by the private collectors	<ul style="list-style-type: none"> <li>• Mobilize a supporting fund/gift to finance the work of the mechanical engineering firm to define precisely the requirements for trucks adapted to the local constraints</li> <li>• Construction of a prototype</li> <li>• Workshops/Discussions with the private contractors</li> </ul>	Specialized engineering firm	

	ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
	Unknown at this stage further investigation required	<ul style="list-style-type: none"> <li>Existing official with training/support of ₦600,000/year ( 2 workshops to present and discuss the financial analysis at ₦300,000 each)</li> <li>₦600,000 preparation of the workshops (1 financial expert for 6 days at ₦100,000/d)</li> <li>₦3,000,000/year Auditor (1 Auditor, 4 days private company assessing 8 company per year at ₦90,000/d)</li> </ul>	Have a solution for waste collection including the very low income districts or the districts where money recovery will be very hard	OYOWMA / OyoState / LGA /Private contractors		2 to 5 years
	₦4,200,000 for the drafting of the agreements (1 lawyer for 50 days at ₦60,000/day + 1 economist for 20 days at ₦60,000/day)	₦4,000,000 every 3 years to revise the agreements	<ul style="list-style-type: none"> <li>Bigger investments for the collection means</li> <li>Access to loans for the private sector</li> <li>Improvement of the quality of the services at a fixed price</li> </ul>	OYOWMA / Private contractors	Banks/OYO State/LGA	2 to 5 years
	₦120,000,000: 2ha of equipped (electricity, roads, water, et. ;) land at ₦6,000/m <sup>2</sup>	0	Settlement of transportation vehicles professionals	OYOWMA / LGA / OYO State		3 to 5 years
	<ul style="list-style-type: none"> <li>₦60,000,000: one year of the consulting firm</li> <li>₦4,000,000 to 6,000,000: 10 to 15 workshops (for the rental of the venues and the equipment and the salary of the workshop leader)</li> </ul>	₦20,000,000/year for three years: follow up of the zoning by the consulting firm	<ul style="list-style-type: none"> <li>Cover all the territory</li> <li>Enable the grouping of private operators to contribute to the professionalization of the sector</li> <li>Structure future delegation markets</li> </ul>	OYOWMA / LGA / Private contractors	Oyo State	4 years
	<ul style="list-style-type: none"> <li>₦10,000,000 for the prototype</li> <li>₦60,000,000: one year of the engineering firm</li> <li>₦2,400,000: 6 workshops</li> </ul>	0	Develop local expertise adapted to the local constraints and enabling to use vehicles simple to maintain and repair	OYOWMA / Private contractors	Oyo State / Universities	2 years

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED
4.10	<b>Waste collection</b>	OYOWMA charges dumping fees for each dumpsite used by an operator. In addition, OYOWMA also levies an annual licensing fee, however, this fee varies, depending on the areas and categories of operations.	Standardization of these fees and clear communication on them will help to foster PSP	Actions 4.1, 4.2, 4.3, 4.4	<ul style="list-style-type: none"> <li>• An economist to analyze all the data collected</li> <li>• Potentially academic studies</li> </ul>
5	<b>Waste transport &amp; transfer</b>	There are no transfer stations in Ibadan - this increases the costs for waste transportation	Oyo State should establish transfer stations around the metropolitan area as they are the most efficient solution to quickly improve the current performance of waste collection and transport	<ul style="list-style-type: none"> <li>• GIS representation of the services</li> <li>• Actions 4.2 and 1.4</li> <li>• Accurate knowledge of the costs</li> <li>• Expert report on the evolution of the vehicle park based on the operation data</li> <li>• Land use analysis to determine the available areas</li> </ul>	<ul style="list-style-type: none"> <li>• GIS Expert</li> <li>• 2,000 to 5,000m<sup>2</sup> per transfer station depending on the waste streams</li> <li>• Civil engineering office</li> <li>• Construction company</li> <li>• A weighbridge for each transfer station</li> </ul>
6.1	<b>Resource recovery</b>	There is no reliable data on the current rate of resource recovery	Assess the work of the scavengers in the dumpsites	<ul style="list-style-type: none"> <li>• Weigh, keep a record and characterize all the quantities going out of the dumpsites</li> <li>• Action 4.2</li> </ul>	Action 4.2
6.2	<b>Resource recovery</b>	Exclusion of informal workers such as scavengers in resource recovery	<ul style="list-style-type: none"> <li>• Identify the informal workers in Ibadan</li> <li>• The waste pickers collect directly the waste from the waste producers in areas difficult to access: the waste producers pay less if they sort their waste</li> </ul>	<ul style="list-style-type: none"> <li>• Action 6.1</li> <li>• Develop pilot cases: informal stakeholders identified, structured in an association, provided with a place to store and pack the waste they collect</li> <li>• The supervisor of the storage/packing facility contributes to the improvement of the incomes of the informal waste pickers</li> </ul>	<ul style="list-style-type: none"> <li>• 1 supervisor for three years</li> <li>• 3,000m<sup>2</sup> facility with access to water and electricity</li> <li>• Small collection equipment (tricycles, etc.) and waste packing equipment (compactor, crusher, etc.)</li> </ul>
6.3	<b>Resource recovery</b>	There is limited resource recovery such as waste-to-energy and composting	<ul style="list-style-type: none"> <li>• Develop the whole waste management value chain to support resource recovery activities</li> <li>• Have a characterization of the waste conducted according to a standard method</li> </ul>	All other actions	
6.4	<b>Resource recovery</b>	Lack of waste sorting by households	Action 6.2		

	ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
	₦4,000,000 (1 economist for 60 days at ₦60,000/day + ₦400,000 communication)	₦4,000,000 every 3 years to revise the analysis	<ul style="list-style-type: none"> <li>Improvement of the operation of the dumpsites</li> <li>More transparency in the cost recovery (better governing)</li> </ul>	OYOWMA / Private contractors	Oyo State/LGA	2 to 5 years
	<ul style="list-style-type: none"> <li>₦300,000,000 for 6 transfer stations</li> <li>₦10,000,000 weighbridge</li> <li>50m<sup>2</sup> of buildings at ₦70,000/m<sup>2</sup></li> <li>80m of closing wall at ₦8,000/m</li> <li>3,000m<sup>2</sup> of land acquisition at ₦6,000/m<sup>2</sup></li> <li>1,500m<sup>2</sup> of asphaltting at ₦6,000/m<sup>2</sup></li> <li>10% for studies and levelling)</li> <li>₦1,200,000 for the initial GIS study : GIS expert for 20 days (₦60,000/day)</li> </ul>	<ul style="list-style-type: none"> <li>Cost reduction for transportation</li> <li>₦9,000,000 for maintenance (3% of the investment)</li> </ul>	The transfer stations would enable the collection vehicles to remain longer in the collection areas every day and to reduce the risks of damage to the collection vehicles on their way to the landfills.	OYOWMA / Private contractors / LGA	Oyo State	2 to 5 years
	Action 4.2	0	<ul style="list-style-type: none"> <li>Better knowledge on the potential recycling</li> <li>Possibility to entrust private companies for these operations through open tenders</li> </ul>	OYOWMA	Scavengers of the dumpsites	1 to 2 years
	Depends of the number of informal workers	₦1,512,000: salary of the supervisor	<ul style="list-style-type: none"> <li>Streets cleaner in the areas covered by the informal sector</li> <li>Professionalization of the activity</li> <li>Improvement of the income</li> <li>Sorting of the waste</li> <li>Formalization of the informal sector</li> </ul>	OYOWMA / Recycling industrials / Informal stakeholders	OYO State	3 years

ACTION #	SWM ACTIVITY	ISSUE / CHALLENGE	PROPOSED ACTION	COMMENTS / CONDITIONS	RESOURCES REQUIRED	
6.5	<b>Resource recovery</b>	While the economic feasibility of resource recovery is very uncertain, some companies have already proposed to develop waste-to-energy and material recovery facilities in Ibadan	<ul style="list-style-type: none"> <li>• Monitor very closely the private companies willingness to invest in resource recovery activities as the whole waste management value chain should be more mature to develop these kinds of activities at a full scale</li> <li>• Improve the management of the landfill to reduce the area covered by waste and free space for this kind of activity</li> <li>• Initiate a first negotiation with these companies to elaborate the requirements in order to prepare an open tender and write the terms of reference</li> </ul>	<ul style="list-style-type: none"> <li>• Action 1.3</li> <li>• Action 6.1</li> <li>• Initiate a dialog with these industrials to draft the requirements and to define the financial commitments (investments) they are willing to respect and the penalties</li> <li>• Clearly define the processes to renegotiate the contracts</li> </ul>	<ul style="list-style-type: none"> <li>• Well managed landfills</li> <li>• Validate, explain et justify the prices proposed by the industrials</li> <li>• Have a specialized firm drafting requirements that the industrials are willing to accept with penalties for non-compliance</li> <li>• 1 engineer to monitor at part-time</li> </ul>	
7	<b>Waste disposal</b>	<ul style="list-style-type: none"> <li>• Dumpsites poorly laid out creating truck traffic issues and leachate issues</li> <li>• No mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the quality of the inner tracks of the dumpsites</li> <li>• Higher levelling of the waste</li> <li>• Use of covering soils</li> <li>• Have a network to collect leachate and rain water</li> <li>• Have leachate storage pounds</li> <li>• Treat the leachate</li> <li>• Have enclosure wall of at least 3m high around the sites</li> <li>• Have administrative facilities, garages, changing rooms, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Private operators mastering the civil engineering methods and the treatment of waste water required to the implementation of the different actions</li> <li>• Recover all the waste that can avoid to be dumped</li> </ul>	Company specialized in the levelling works and capable of treating wastewater or a company already experienced in landfill management	

ESTIMATED INVESTMENT COSTS	ESTIMATED OPERATION COSTS	EXPECTED BENEFIT / OBJECTIVE	PRINCIPAL ACTOR / RESPONSIBLE	SUPPORTING ACTORS / STAKEHOLDERS	TIME HORIZON
Action 7	<ul style="list-style-type: none"> <li>• Cost reduction for the land-filling</li> <li>• ₦1,250,000/year : 1 part-time engineer for 5 years</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of the quantity of waste arriving to the landfills</li> <li>• Cost reduction</li> </ul>	OYOWMA / Industrial already identified by OYOWMA	Oyo State / Ministry of Environment and Habitat/ Ministry of Trade, Investment and Cooperatives	5 to 10 years
<ul style="list-style-type: none"> <li>• ₦1,300,000,000 for minimal operations : ₦325,000,000 per dumpsite (see below for the details of the calculation)</li> <li>• ₦4,000,000,000 for operation including mitigation measures to significantly reduce the impacts of the dumpsites</li> </ul>	<ul style="list-style-type: none"> <li>• ₦2,000/ton without the mitigation measures</li> <li>• ₦5,000 to ₦10,000/ton with more or less demanding mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>• Dumpsites with a longer life cycle</li> <li>• Reduce the disturbances for the surroundings</li> <li>• Reduce the risk of truck break-downs in the dumpsites</li> <li>• The inner tracks can be used by packer trucks</li> <li>• Reduce the impact on the environment</li> </ul>	OYOWMA / Oyo State	LGA / Private contractors	6 months for the improvement inner tracks  3 to 10 years

## COST RECOVERY AND REVENUE COLLECTION

### REVENUE COLLECTION MECHANISM

The waste collection service providers must be paid by the recipients of the service, and the service is mandatory in order to maintain public health. Hence, it is necessary to develop shared actions between the operators and the public authorities in order to monitor and sanctions any bad payers.

For the waste producers that can afford to pay, a number of options are possible to address the challenges around revenue collection, for example:

1. The Local Governments pay the private contractors and collect a fee from waste producers to finance the service. In this case, the creation of a dedicated account for waste management services could help to secure the service contract and reduce the risk of late payment (which is often an issue for private waste collectors in countries similar to Nigeria). In this way private sector participation becomes more attractive and the costs of the service can be lowered.
2. OYOWMA and the private contractors negotiate a basic service and its fee. The fee and its constituent elements are made public. The waste producers pay the private contractors the set waste management fee for providing the agreed services. If a waste producer wants a better service (e.g. more frequent collection) than the basic one, they must negotiate the price of this extra service with the contractor of their choice. Where a waste producer does not pay the contractor, the contractor reports the waste producer to OYOWMA which can:
  - a. Impose a fine under existing laws on behalf of Oyo ;
  - b. Ensure a special cleaning service invoiced at a very high price;
  - c. Sensitize the waste producer and inform him or her in writing about possible sanctions;

Discussions with stakeholders during this study showed a preference for the second option given the current local situation in Ibadan, but it likely

that different models should be tested before the solution that is most adapted to Ibadan's local context and the different social categories of the waste producers can be identified.

For the areas where people do not have the capacity to pay, an innovative 'pre-pay as you go' solution could be implemented. The suggested recommendation is that the waste is put inside of tough brightly colored (e.g. yellow) plastic bags or sacks that people can buy at a fixed price. This solution may be particularly effective for community markets and for poorer households, where the affordability of the monthly waste collection fee set by OYOWMA is an issue, but where there is still some willingness to pay. A carefully devised price could be set per bag (each bag would have a minimum capacity of 50L). It was estimated that ₦50 to ₦100 per bag will be affordable for most market traders, depending on the actual capacity of the bag. The appropriate price for the bags will depend on a range of factors, such as the cost of production and distribution, and the levels of revenue that can be generated based on the perception of affordability. The lower the price, the more likely the scheme will be well received.

Private collectors or OYOWMA will then only collect the yellow bags from the designated collection points. Strict enforcement of the scheme will be required through community/residents associations, market associations, neighborhood watch schemes and similar to prevent defaulters placing their waste for collection in bags other than the yellow bags. In essence, the scheme is more likely to be successful if local community associations ensure that no traders, residents or members place refuse in the designated areas without using the bags. It may be possible to concentrate the work of the Environmental Health Officers (EHOs) in these areas to enforce compliance.

Yellow bags can be security printed (e.g. bar coded and numbered). They could also be reusable. The printing, distribution, sale, collection of used bags, can all be done by the private sector.

The actions related to cost recovery and revenue collection (i.e. collecting waste management fees) are as follows: 2.4; 4.1; 4.3; 4.4; 4.5; 4.10.

### DETERMINING WASTE MANAGEMENT COSTS AND FEES

There are currently no financial models to estimate the cost of waste management in Ibadan, and a

financial model for investments and operation of waste management activities in Ibadan should be established. This should be the basis to define the fees that need to be collected to cover the costs of operating and upgrading waste management facilities and to ensure that the operators are adequately remunerated. That said, the decision for which means of revenue collection to apply either a tax (which depends on the capacity of the person to pay and is redistributive) or a fee (which is based on the service provided) is a political choice.

In order to manage waste management costs and develop an economically feasible system involving the private sector, it is important to:

- Officially determine the “real” cost of collection services in different situations;
- Decide on equitable fees for the different kinds of waste producers based mainly on the waste producers’ capacity to pay;
- Carry out a broad communication campaign on waste collection fees.

The service provided must be universal, hence there is a need for the waste collection fees to be more equitable. The equity of collection fees will also help reduce the level of ‘reluctance to pay’ and will help secure the revenue streams of the private contractors. The equity of collection fees can be based on the weight of the generated waste and on an accurate costing of all factors affecting the collection process. For example, the distance from the households or districts to the dumpsites: some areas may be located far from the dumpsites sites, which may mean their collection costs and fees are higher than those of other areas that are situated closer to dumpsites.

In order to generalize the collection services to all households, the payment of the fees should be more coercive and compulsory and it is necessary to demonstrate and explain that the fee asked is reasonable or the most cost-effective possible. The non-compulsory nature of the payment of the fees or the lack of a rigorous control of the fees from Oyo State are obstacles for the economic feasibility and the generalization of private waste collection services to cover the entire metropolitan area. Moreover, waste management fees are also based on the fee collection rates, as, if the number of people paying the fees increases, the fees to be paid by each household should decrease. Enforcing the payment for every waste producers leads to more revenues to the private collectors and Oyo State, and may in

aggregate lead to reductions in set waste management fees.

Being strategic and optimal in the location of waste collection points and transfer stations may also help reduce waste collection costs and fees even further.

## CONTRACT RELATED ACTIONS

### SUPPORT INVESTMENT AND PERFORMANCE-BASED CONTRACTS

The contractual framework should also support the professionalization of the private waste collectors. Hence, it should include as a minimum the following points:

- Penalties in case of non-compliance;
- Longer duration of the contract;
- Performance commitments and targets;
- Investment commitments (for example, an obligation to deposit 25% of the investment over a 18 month period on a dedicated bank account) especially for resource recovery activities;
- Control methods;
- Objective and data driven performance measurements;
- Mandatory reporting of waste management performance from the private contractor;
- Budgets allocated and guaranteed;
- Processes to renegotiate the contracts.

It should also support investments, hence, it could also involve to:

- Define by agreement with the current contractors the possible evolution of their profession: the current private waste collectors in Ibadan have a clear idea of what can be done to help them improve the quality and the productivity of their work and they have a very good understanding of the situation on the field. This definition of the possible evolution of the profession should also be based on reliable field data about the potential revenues, the characteristics of the different areas of the city, etc.;
- Introduce five year contracts (or licenses) with investment commitments for the private contractors starting in the first year;
- Help private contractors to negotiate loans so they are more likely to be granted finance;
- Mobilize advanced technical expertise to produce designs, manufacturing templates, mounting and maintenance instructions required to equip four-wheeled medium size trucks (five to eight tons) according to the needs expressed by the private collectors;

- Develop a technical training center for vehicle maintenance and repair in partnership with heavy-duty vehicle resellers in Nigeria. This technical training center could be led by the private sector or by the vehicle resellers in Nigeria. The possibility for the private collectors to use this facility and to train its staff in this center should be part of the service contract.

Finally, the following steps should be included for performance-based contracts:

- Define precisely the service and quality level that must be achieved, the methods to measure quality and stipulate penalties if quality levels are not reached, and the conditions which may lead to contract breach and disqualification of the service provider;
- Define precisely the activities to be performed and the service outcomes;
- Define how to objectively measure the performance of the service provider;
- Define what should be done when a contractor does not respect the contract:
  - Foresee the process for identifying any non-conformities: How to establish the incident of non-conformity, and what actions should be taken;
  - Foresee the process for quickly implementing corrective actions for non-conformities;
  - Foresee financial sanctions which will ensure the service even though the corrective actions are not implemented;
  - Foresee adapted and realistic processes aligned with the resources of the regulator, and sanctions proportionate to both the non-conformity and the remuneration level of the contractor.

See Annex 2 – Potential Waste Services Agreement Provisions for more detail on contractual provisions.

The actions related to the implementation of a contractual framework to support investment and performance-based contract are the following : 1.2; 1.6; 3.2; 4.3; 4.5; 4.6; 4.10; 6.5; 7.

## COMMUNICATION, EDUCATION AND AWARENESS-RAISING

The behavior of the general public is crucial to the achievement of efficient waste management in Ibadan. It is important to address the waste producers' 'heads' (by arguments to prove the importance of good waste management), 'hearts' (by raising

awareness) and 'wallets' (by setting waste management fees appropriately, ensuring the polluter pays and introducing potential fines for non-compliance). All of this can be achieved through a broad communication strategy.

A major communication strategy is required to change waste disposal behavior and improve the general level of knowledge of good waste management practices in Ibadan. This can be deployed via schools, churches, mosques, associations, television, radio, etc. It is noted that some awareness-raising programs were already being initiated as at the end of the fieldwork in this study (the last quarter of 2015).

Furthermore, there is a need for waste management service providers to build the trust of the waste producers in the quality and reliability of services being provided.

The actions related to communication and awareness-raising are as follows: 1.2; 2.1; 2.2; 2.5; 4.1; 4.3; 4.10.

## ENFORCEMENT OF WASTE MANAGEMENT REGULATIONS

There is also a need for more effective persuasive enforcement of rules and legislation. There is currently a huge gap in the number of EHOs required to properly cover a city the size of Ibadan. There are currently less than 500 EHOs for the whole city, with the majority approaching retirement within a few years. The Youth Empowerment Scheme for Oyo State (YES-O program) may be helpful in providing a pool of resources to address this gap.

The actions related to law enforcement are as follows: 1.2; 2.1; 2.2; 2.3; 2.4; 4.4; 4.10.

## INVESTING IN WASTE MANAGEMENT INFRASTRUCTURE AND FACILITIES

The actions related to the planning waste management infrastructure and facilities are as follows: 2.2; 3.4; 4.7;

## CREATING TRANSFER STATIONS

Transfer stations would definitely contribute to improvements in collection efficiency. They could be

located on the main roadways leading to the dumpsites, about halfway between the center of the city and the dumpsites. These transfer stations could reduce collection costs, primarily by allowing the trucks to make more collection rounds per day. This will improve their productivity and reducing the time wasted in transportation. There are also wider benefits to the collectors, as the use of transfer stations will reduce their costs, wear and tear on the vehicles, etc., as the collectors will no longer need to drive to the dumpsites. As previously noted, driving inside the dumpsites is a major cause of breakdowns given the current state of the dumpsites and their inner road tracks. Transfer stations are key to cost reduction but must be properly managed and not develop into temporary dumpsites. Therefore, the waste arriving at transfer stations should be compacted and not stay more than 12 hours in the transfer station. The stations should also be cleaned daily.

A challenge to establishing transfer stations in Ibadan is finding suitable available sites as the city is already very densely built up. As mentioned under section , securing the land for transfer stations may involve resettlement of the people that already live on the plot of land.

The actions related to transfer stations are listed under Action 5.

### INSTALLING WASTE COLLECTION POINTS

Waste collection points can also help improve the efficiency of waste collection. In particular, collection points could:

- be installed on the asphalted main roads of the city, with closed containers that are emptied and cleaned on a regular basis;
- be used more intensively along asphalted roads with large capacity containers (3 to 5m<sup>3</sup>) that are emptied and cleaned on a regular basis.

The local communities can help to use and organize the waste collection points. They can also help with the identification of the ideal locations for such points.

The strategic and optimal location of the collection points is also key to cost reduction and improvements in productivity.

The actions related to the waste collection points are the listed under 2.2 and 2.5.

### CREATING STORAGE FACILITIES FOR CLEANING EQUIPMENT

It would be helpful to install storage facilities in the different districts of the city, to allow the cleaning teams to store their equipment, and to have a container to store the waste that they collect (20m<sup>2</sup> to 50m<sup>2</sup> buildings). This is important regardless whether the cleaning is conducted by the private or public sector. Given the current situation, it is very unlikely that the private sector will have the capacity to finance such facilities, and so the responsibility to provide these facilities will be with the Oyo State.

### LAND ACQUISITION BY THE OYOWMA WASTE MANAGEMENT FACILITY INSTALLATION

Before establishing any new waste management infrastructure and facilities, Oyo State must ensure access to and acquire the necessary land to the planned waste management facilities. The land is needed in central areas in Ibadan metropolitan area for:

- Installing transfer stations equipped with weighbridges;
- Making available to the private contractors areas to park and maintain their vehicles;
- Develop attractive areas for potential heavy-duty trucks resellers;
- Create facilities to process the recyclable materials collected in the town.

It can be a challenge identifying suitable locations and plots of land in Ibadan as many inner city areas are already occupied. Oyo State would need to undertake significant work to ensure suitable sites, e.g. land identification and acquisition, performing an environmental impacts assessment and any other relevant survey as well as guaranteeing planning and construction permissions.

## INVESTING IN OTHER URBAN INFRASTRUCTURE

The following are recommendations that may be beyond the scope of private sector participation, and should be implemented by the public sector in order to improve the overall efficiency of waste management services.

### IMPROVING THE ROADS

The current penetration rate of waste collection vehicles (the percentage of streets that are reached by the collection vehicles) is quite low in areas without asphalted roads. Some minor road improvements, covering a few meters, could enable the trucks to go deeper inside the districts that currently do not benefit from waste collection services. It is estimated that about 30% to 50% of truck breakdowns are linked to the poor state of the roads.

An inventory of road locations using a geographical information system (GIS) could be used to develop a plan for improving and maintaining the roads that would improve the penetration rate of waste collection vehicles in Ibadan. Fitting each vehicle with a GPS would allow for better data collection and performance monitoring as well. Once the roads are improved, an increase in waste collection rate will follow. The road improvements would benefit not only the waste management services but all the public services using the road (e.g. fire brigade, police, etc.), as well as the populace.

A short-term action for road improvement would be to repair the current roads inside the districts, and make them accessible. They do not need to be asphalted but just to be cleared, and potholes and bumps removed so they are relatively flat and safe to drive on. The second step would be to asphalt the roads enabling two trucks to pass one another at 60 km/h on the same road. This measure is unrealistic in a SWM perspective alone; however, it could be integrated in a comprehensive multi-year development plan of the city.

Another point is to enforce the integrity of the urban roads by clearing the roads of parked cars that prevent access to waste containers.

The actions related to improving the roads in Ibadan are listed under Action 1.1.

### DEVELOPING BUILDINGS ADAPTED FOR WASTE COLLECTION

It is important to develop buildings adapted for

waste collection which include a dedicated room or area to keep waste out of the rain. This area should be connected to the road (for container transportation), and designed in a way to prevent waste from being spilled out onto the street. The need to improve waste collection efficiency by improving the packing of the waste could also be built into the design. The accessibility of the waste storage area must be linked to the roads by a driveway, allowing the waste to be easily transported by the waste producers to the area where it will be collected. This could be implemented by developing building codes that require new buildings to have adequate storage for solid waste and that the area must be accessible by waste collectors. Construction permits would not be given to buildings that do not respect these guidelines.

## PILOT PROJECTS

The actions related to the development of pilot projects are as follows: 3.3; 4.1; 4.4; 4.5; 4.9; 6.2; 7.

The various specificities of Ibadan do not allow the direct application of waste management solutions that work effectively in other countries without a process to adapt these solutions to the local context; validate their effectiveness in the Ibadan context; and, develop new and innovative solutions. Hence a phase of testing and improvement is necessary before implementing a general roll-out of any solution across the whole metropolitan area.

As the general state of waste management in Ibadan currently does not attract foreign companies experienced in solid waste management, and as OYOWMA does not currently have the requisite experience in the drafting and the monitoring of long-term contracts; Oyo State should rely upon existing waste management stakeholders in Ibadan to develop and test innovative solutions in order to progressively increase the volume and the general quality of the services.

### TECHNOLOGICAL INNOVATION RELATED TO WASTE MANAGEMENT VEHICLES AND EQUIPMENT

The productivity of the cleaning and the collection services relies heavily on the adaptation of the equipment being used to the constraints in the field.

Today, the private collectors in Ibadan have valuable experience in the design and the adaptation

of trucks given the local context. However, these adapted trucks could be lighter and more reliable if the various elements of the tipper truck were designed and optimized by a specialized engineering firm.

Hence, the pilot project in this instance will be about:

- a. defining adapted truck design specifications through collaboration between the private collectors and the specialized engineering firm;
- b. designing and optimizing the trucks especially regarding ergonomics;
- c. building prototypes and testing the designs by several collection teams to propose further improvements; and
- d. finalizing the design and generalizing the design of the waste collection trucks.

The same approach could be used for the design of street cleaning equipment.

### USING DIFFERENT MEANS OF WASTE COLLECTION

In order to optimize the current waste collection process, it is important to differentiate the means of collection throughout the city and to undertake in pilot areas prior to city wide implementation, for example:

- The packer trucks can be used on the main motorways, if these motorways are in good shape;
- The improved small trucks (similar to those currently used by the private collectors) can be used in the districts with non-asphalted roads. These trucks are the most cost-effective in this situation because larger trucks have a high rate of breakdowns in poor quality roads and have trouble navigating narrow roads;
- For the areas unreachable by trucks, waste collection points can be installed at the periphery of these areas to gather waste for

subsequent collection by the smaller trucks. The creation of waste collection points will require investments. In these areas, it may also be possible to develop community-led collection, and/or waste collection and sorting by the informal sector.

There is not one single solution, and careful planning is vital to provide an appropriate response to the waste collection challenges in Ibadan, e.g. determining where and how many waste collection points should be installed.

Various cost recovery options, solutions and innovations could also lend themselves to piloting in small areas.

### USE DATA AND GIS FOR PLANNING OF SOLID WASTE COLLECTION AND TRANSPORT ACTIVITIES

It is very important to develop a digital platform to capture and share the representation and the characterization of the city. The different stakeholders working within Ibadan should make their data available to the other stakeholders and there should be cross-sharing of GIS data by all stakeholders. During the last workshop of this study, OYOWMA announced that it was going to implement modern databases to collect data on waste management services. This initiative should be encouraged, supported and sustained.

Knowledge could be shared:

- On the state of the roads in the metropolitan area;
- On the need for waste collection points and their possible locations;
- To test new collection methods for the unplanned districts;
- On spaces available for the location of urban waste management facilities;
- To characterize the existing services (e.g. performance, quality, productivity, revenues, etc.), to define what new services are needed, and how to achieve improvement; and,

- On the characterization of the waste to encourage better waste management and resource recovery.

This shared knowledge would enable the different stakeholders to have the same view on the current situation in SWM in the metropolitan area. The best way to share territorial information is via a GIS and should include the following:

- the waste collection rounds;
- the quality of the service in the different districts;
- the state of the roads;
- the layout plan of the city;
- the location of the waste collection points;
- the different level of revenue in the city;
- information on the cleaning areas (state of the roads and sidewalks, storage facilities, areas, zoning, etc.);
- the zoning of the waste collection services; and
- the location of the transfer stations.

Today many technologies are becoming increasingly accessible and affordable even for developing countries. However, these technologies are sometimes operated by costly software. Where labor costs are lower, some of these software systems are less cost effective, and in many cases, the costs of acquiring the software and training staff presents a barrier.

However, many open source or low cost alternatives are becoming available, with similar performance levels and functionalities. For example:

- Mobile terminals: Android smartphones rather than rugged terminals under Windows CE or Windows Mobile (at least twice more expensive for the same performance/results);
- Software for mobile terminals downloadable via Google Play Store (e.g. using prepaid cards purchasable worldwide);
- Open source GIS software: QGIS;
- Using data and drafting model documents using Libre Office Suite (an open source software applications);
- GPS data logger – at a low cost and with the ability to migrate later to smartphones and allow real time tracking.

This approach also promotes the integration of new technology and human resources, by enabling talented young people to apply new technologies (e.g. smartphone) to develop products or services adapted to the local context at an affordable cost. Combinations of this type of solutions can be used to foster a dynamic of innovation based on the production of new knowledge from the current situations and from local data. The resulting information will help promote citizen satisfaction, as set out in the diagram below. This diagram also shows that the production of knowledge should be seen as an investment that provides leverage for other investments, and ultimately promotes the development of the city.

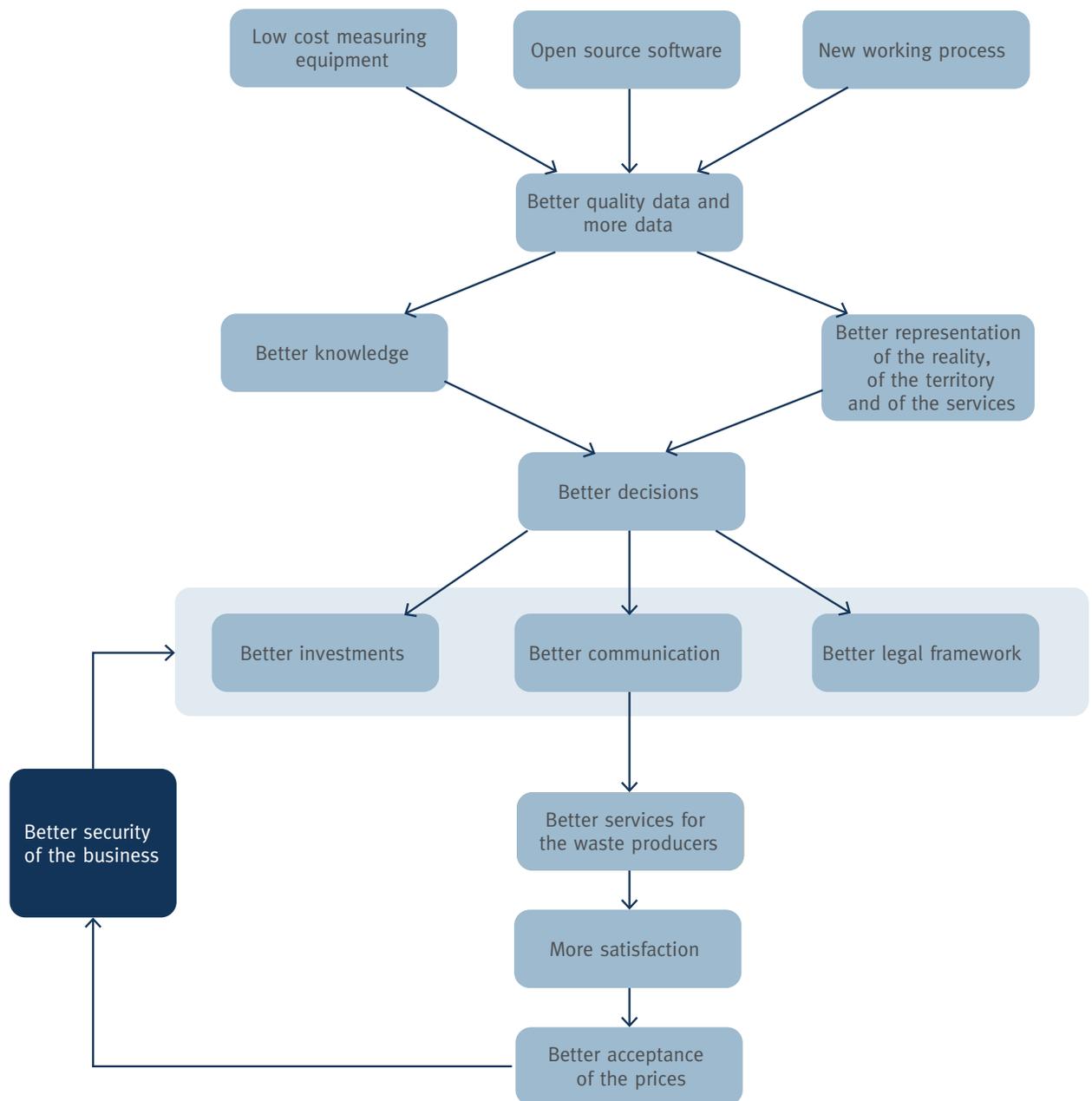
The actions related to the production of reliable data and the improvement of shared knowledge are as follows: 1.1; 1.2; 1.3; 1.4; 2.2; 3.1; 3.4; 4.1; 4.2; 4.3; 4.4; 4.8; 5; 6.1; 6.2; 6.3.

The actions related to the development of a GIS representation of the city are as follows: 1.1; 1.2; 1.4; 2.2; 3.1; 3.4; 4.8; 5.

## IMPROVING THE MANAGEMENT OF DUMPSITES

The storage of waste produces pollution and creates nuisances that should be address at a manageable cost. The environmental and health impacts of dumpsites could be mitigated by applying modern levelling methods, creating secured tracks on top of the waste as well as implementing leachate and biogas management techniques. Many of these actions can be conducted using local means and materials. However a preliminary study of the useful local means is necessary before mobilizing the viable low cost options in order to design appropriate solutions or combinations of solutions. Post the completion of this study it would be highly recommended that a pilot project to be undertaken to validate the conclusions and expectations of the preliminary studies, and to adjust the proposed solutions before rolling them out across all of the dumpsites in Ibadan.

The achievement of a level of quality equivalent to those of sanitary landfills should be the objective for improvements to the existing dumpsites. Well managed dumpsites are key to improving the productivity of waste management services. Indeed, well-maintained sites will lead to a reduction in the number of truck breakdowns inside the dumpsites, and provide data to measure productivity. It will also help improve the design of waste management



**Figure 14:.** Production of knowledge as a leverage for investment

operations, and be able store waste more safely. The following multiple aspects are involved: planning, operations and monitoring, as detailed below.

### PLANNING

Improve the access roads:

- To the dumpsite; and
- Inside the dumpsite, for example, by covering dumpsite tracks with soil and elevating the tracks so they are drained more easily when it rains.

Develop action plans:

- Preparing and using key documents, such as a landfill implementation program, landfill operational plan, landfill design information, drainage design plan for the dumpsites, etc.;
- Measuring and gathering data to be used in the calculation of the water balance of a landfill;
- Developing a leveling plan and ensuring surface optimization.

## OPERATIONS

- Improve waste leveling in the dumpsites, and create tracks for the trucks on top of the waste. This will improve site life expectancy and reduce spilling areas;
- Provide intermediate and final soil coverage (not just one layer);
- Repair the enclosure walls;
- Equip the dumpsites with weighbridges to weigh the trucks when they come in and out of the landfills, obtain a precise measurement of the waste collected, and gather such information on a regular basis;
- Training and capacity building for dumpsite staff, for example, on how to operate and maintain the new equipment, and to keep reliable records;
- Health, Safety and Environment (HSE):
  - Improve water management, including storm water and leachate;
  - Ensure the safety of the temporary motor boys and girls on the trucks during transport from collection points within the metropolis to the dumpsites;
  - Improve worker's health and safety by using protective kits; PSPs can be required to provide and maintain their own protective equipment;
  - Provide shelter from bad weather;
  - Provide changing rooms, toilets and washing facilities.

## PERFORMANCE MONITORING

Examples of performance data to be monitored on an ongoing basis are as follows:

- The number of trucks per day;
- The dumping duration per truck;
- The waiting time per truck;
- Amount of soil used for the intermediate and the final coverage layers;
- Amount of waste collected (measured by using weighbridges);
- Health, Safety and Environment (HSE):
  - Leachate production and composition, collection of weather data (insolation, rain, wind, air, humidity, etc.);

- Monitoring of air quality to ensure compliance with approved standards in industrial sites and dumpsites
- Proper monitoring against fire outbreak due to spontaneous ignition of waste

Regarding resource recovery, rigorous waste quantification and characterization is necessary in order to have reliable and accurate data of waste and waste management that can be used to initiate, develop and conduct negotiations with companies interested in investing in solid waste management in Ibadan.

## CAPACITY BUILDING

The actions related to the capacity building are the following: 1.3; 1.4; 1.5; 4.9; 7.

## FOR THE PRIVATE WASTE CONTRACTORS

The private waste contractors in Ibadan would benefit from being assisted with capacity building support in the following areas:

- Staff training to improve safety and productivity;
- Staff monitoring of health and safety, e.g. develop regular medical check-ups and health insurance for workers that are exposed to environmental hazards, and discourage workers from sitting on the collected waste during transport;
- Management of human resources;
- Personal Protective Equipment (PPE);
- Training on management and the calculation of unit costs;
- Mobile team monitoring and quality management;
- Using GIS to monitor and organize waste collection;
- Planning waste collection routes and transport logistics;
- Accounting and preparing financing applications;
- Engineering support for four-wheels vehicles (five to eight tons) to continuously improve quality, ergonomics and productivity;
- Design and modifications of waste collection vehicles;
- Vehicle maintenance;
- Training of mechanics;
- Landfill management.

### FOR OYO STATE

The public sector can be assisted with capacity building support in the following areas:

- Developing, implementing and enforcing solid waste management regulations, e.g. sorting of waste at the waste producers' premises, building codes to ensure adequate storage of waste and access; collection of waste management fees, etc.;
- Procurement process, e.g. initiating, developing, negotiating, awarding, managing and monitoring performance-based contracts;
- Determining cost recovery and waste management fees as well as setting penalties;
- Developing solid waste management strategies, master plans and action plans;
- Land management and planning using GIS;
- Modes of waste processing and resource recovery;
- Performance monitoring of services.

Oyo State should pay particular attention to the drafting of the contracts, financial commitments and the penalties to be applied in the event that expected benefits from investments are not achieved. Indeed, if the penalties are not correctly set, private contractors may try to take advantage by not passing the expected benefits (e.g. profits made on selling recovered materials) on to the public sector. Due care and attention is required on the part of the public authorities, especially around private sector investments into resource recovery operations.

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# **ANNEXES**

**ANNEX 1 - LEGAL FRAMEWORK**

**ANNEX 2 - POTENTIAL WASTE  
SERVICES AGREEMENT PROVISIONS**

**ANNEX 3 - STAKEHOLDER INTERVIEWS**



## ANNEX 1 – LEGAL FRAMEWORK

# ASSESSMENT OF THE LEGAL FRAMEWORK OF PRIVATE SECTOR PARTICIPATION IN SOLID WASTE MANAGEMENT ACTIVITIES IN IBADAN

### INTRODUCTION

Further to the Preliminary Report dated 8 April 2015 on the legal framework of Solid Waste Management in Ibadan, Oyo State, please find below our Report on the legal framework in respect of the following aspects:

- Incentives/disincentives available for use by the various government levels;
- Regulatory gaps and inconsistencies; and
- Government constraints in Private Sector Participation (“PSP”).

### INCENTIVES/DISINCENTIVES AVAILABLE FOR USE BY THE VARIOUS GOVERNMENT LEVELS

Largely, the legal framework on solid waste management in Oyo State covers all aspects. However, there are certain provisions of the relevant laws on solid waste management below that may appear to be deterrents to PSPs. We will attempt to point out the provisions of these relevant laws that appear to either encourage or discourage the involvement of private sector participants in solid waste management.

### FEDERAL LAWS

#### NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT, 2007 (“NESREA ACT”)

The NESREA Act establishes the National Environmental Standards and Regulations Enforcement Agency (“**NESREA**”) which is charged with the responsibility for the protection and development of the environment in Nigeria and for related matters.

#### • SERVICES AND RESPONSIBILITIES

The responsibilities of the Agency include:

- (i) To enforce compliance with environmental regulations on the importation, exportation, production, distribution, storage, sale, use, handling and disposal of hazardous chemicals and waste generated in the non-oil and gas industries; and
- (ii) To enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment, including chemicals, hazardous wastes, pollution, sanitation and such other environmental agreements as may from time to time come into force.

#### • EMPOWERMENT

The Agency shall have the power to:

- ( i ) Submit to the Minister for his approval, proposals for the evolution and review of existing guidelines, regulations and standards on environment other than in the oil and gas sector including - waste management and environmental sanitation; and
- ( ii ) Establish programs for setting standards and regulations for the prevention, deduction and elimination of pollution and other forms of environmental degradation. This power shall be exercised in collaboration with other relevant agencies and with the approval of the Minister.

#### • INCENTIVES

There appear to be no incentives to PSP under the NESREA Act. A potential incentive/disincentive identified is the fact that the Agency, the state environmental protection agency and waste management authority can grant and revoke licenses. However, it was confirmed that the Agency can only issue licenses for waste management treatment.

#### • DISINCENTIVES

There appear to be no disincentives to PSP under the NESREA Act.

### NATIONAL ENVIRONMENTAL (SANITATION AND WASTE CONTROL) REGULATIONS, 2009 (the “regulation(s)”)

The purpose of these Regulations is the adoption of sustainable and environmentally friendly practices in environmental sanitation and waste management to minimize pollution. The Regulation is administered by the NESREA.

The Regulations impose general duties on the public on the control of solid waste these duties include:

- ( i ) The duty on any person whose activities generates waste to ensure that the waste is handled by a person licensed to transport and dispose of the wastes in a designated waste management facility; and
- ( ii ) The duty on all owners and occupiers of premises to provide waste receptacles for storage before collection by licensed waste managers.

#### • SERVICES AND RESPONSIBILITIES

The responsibilities of the NESREA include:

- ( i ) Ensuring the implementation of the provisions of the National Environmental Sanitation Policy and Guidelines at all levels of Government;
- ( ii ) Ensuring compliance with the provisions of the regulations;
- ( iii ) Ensuring that the waste management facilities comply with the Environmental Impact Statement;
- ( iv ) Embarking on intensive environmental education and awareness campaign on sound environmental sanitation and waste management;
- ( v ) Ensuring that states and local governments make provisions for land for waste management facility; and
- ( vi ) Ensuring safe and sustainable control of waste generated by specialized agencies.

#### • EMPOWERMENT

The powers of the NESREA include:

- ( i ) The power to grant licenses to persons qualified to offer services and the power to revoke such licenses as contained in the National Environmental (Licensing and Permitting systems) Regulations, 2009.
- ( ii ) The power to serve enforcement notices on any owner or occupant in care of premises or in control or management of a business who is in contravention or is likely to contravene the provisions of any regulation, guideline or condition of the permit.

The enforcement notice shall specify the matters constituting the contravention and specify the steps that must be taken to remedy the contravention and the period within which those steps must be taken.

#### • INCENTIVES

There appear to be no incentives to PSP under the Regulations.

#### • DISINCENTIVES

There appear to be no disincentives to PSP under the Regulations.

## LAWS OF OYO STATE

### OYO STATE SOLID WASTE MANAGEMENT AUTHORITY LAW 2004 (“OYOWMA LAW”)

The OYOWMA Law provides for the establishment, functions and powers of the Oyo State Solid Waste Management Authority (“OYOWMA”/ “the Authority”) and other matters connected therewith.

Under Section 2 of the OYOWMA Law, solid waste includes garbage, refuse and other discarded solid materials resulting from domestic, industrial, commercial and agricultural activities from the community.

#### • RESPONSIBILITIES OF OYOWMA

Section 6 provides for the duties of OYOWMA and it includes:

- (i) The storage, management, conversion, transfer and disposal of solid waste for the State;
- (ii) Appointment, registration and control of private refuse contractors;
- (iii) Enforcement of all laws and regulations concerning Solid Waste Management and any other sanitation laws and regulations as may be in force in the State;
- (iv) Preparation, collection and use of data and management information on Solid Waste Management; and
- (v) Carrying out the management of Solid Waste throughout the State.

#### • EMPOWERMENT

The OYOWMA Law empowers the Authority to carry out the following activities:

- Acquire land and equipment necessary for its operations for the purpose of Solid Waste Management in the State;
- Enter land premises in order to carry out its objectives under the Law; and
- Register refuse contractors and fix necessary amount as registration fees which shall

be renewable annually and subject to review from time to time.

#### • INCENTIVES

There appear to be no incentives to PSP in the OYOWMA Law.

#### • DISINCENTIVES

In view of the fact that the registration fee payable by the refuse collectors are renewable annually, it is clear that the duration of licenses issued to private waste collectors by OYOWMA is for only one (1) year. One of the challenges identified by the private waste collectors is that it is difficult to obtain loans from financial institutions because of the short duration of these licenses as financial institutions desire longer license periods which would serve as guarantees.

### OYO STATE SOLID WASTE MANAGEMENT AUTHORITY (AMENDMENT) LAW 2012 (“OYO WMA AMENDMENT LAW”)

The OYOWMA Amendment Law amends Section 37 of the OYOWMA Law which provides for the power of the Authority.

#### • EMPOWERMENT

Section 4 of the OYOWMA Amendment Law which substitutes Section 37 of the OYOWMA Law empowers the Authority to do the following:

- Register refuse contractors and renew such registration annually;
- Charge the refuse contractors registration and renewal fees amounts to be fixed by the Authority from time to time;
- Regulate and monitor the activities and operations of the Refuse contractors in the state;
- Ensure compliance with the provisions of this law or regulations made thereunder;
- Make regulations subject to the approval of the executive council; and

- Demand the production of evidence of registration from a contractor by a written notice and for the purpose of inspection of any such evidence; an authorized officer may enter the contractor's premises between 8am and 4pm.

#### • INCENTIVES

There appear to be no incentives to PSP in the OYOWMA Amendment Law.

#### • DISINCENTIVES

Under the OYOWMA Amendment Law, the Authority has the power to review and vary registration and renewal fees without notice. The law is silent on issuing notice of a variation and therefore it appears that the Authority may exercise this power arbitrarily.

### MINISTRY OF ENVIRONMENT AND HABITAT LAW, 2011 (“MEH LAW”)

The MEH Law establishes the Ministry of Environment and Habitat (“**MEH**”) in Oyo State, which provides for the functions of the MEH and other matters connected therewith.

Solid waste under MEH includes garbage, refuse and other discarded solid materials. In addition, air pollution in the MEH includes gaseous or noise emission originating from industrial, commercial, musical, domestic, sports, recreational, transportation, and other similar activities.

#### • RESPONSIBILITIES OF THE MEH

The MEH Law states that the responsibilities of the MEH shall include the following:

- Formulation and enforcement of policies, statutory rules, and regulations on waste collection and disposal, general environmental protection, control and regulation of the ecological system and all activities related thereto;
- Establishment and taking of measures to ensure effective environmental structures in the State for flood control through dredging solid and liquid wastes collection and dis-

posal, water and air pollution eradication, noise control and general sanitation; and

- Coordinating the activities of the environmental monitoring units and sanitary inspectors of the Local Governments in the State.

#### • EMPOWERMENT

The MEH Law empowers the MEH to inter alia:

- Register the environmental management contractors and impose such conditions necessary for carrying on the environmental management business;
- Enter into contracts with other organizations or companies for the fulfilment of its functions and responsibilities under this Law;
- Declare a day as environmental sanitation day, restrict movement for specified hours and mobilize the populace for environmental sanitation activities; and
- Oversee the activities of the Oyo State Solid Waste Management Authority and Agencies in charge of environment matters.

#### • INCENTIVES

There appear to be no incentives to PSP in the MEH Law. While the term “Environmental Management Contractor” is not defined, it was confirmed that registration of a waste chain collector is only done with OYOWMA; therefore only one registration, rather than multiple ones, is needed.

#### • DISINCENTIVES

Section 14(4) of the MEH Law provides that the Permanent Secretary may suspend or revoke any registration if it was not renewed after twenty one (21) days when same was due, if a condition of registration was violated by the contractor or for any other reason it is in the opinion of the Permanent Secretary, reasonable and just to suspend or revoke the registration.

Suspension or revocation may however be reversed upon satisfaction that the reasons therefore have

been redressed and the contractor has paid a fine of ₦5000.

It appears that this is a disincentive because it vests a substantial amount of discretion in the Permanent Secretary to determine whether or not a license should be suspended or revoked. Furthermore, some of the parameters on which the Permanent Secretary may base the decision to suspend or revoke appear unduly rigid towards an operator, for example, the requirement to renew a registration within twenty one (21) days of expiration.

### MINISTRY OF PHYSICAL PLANNING AND URBAN DEVELOPMENT LAW 2012 (“MPPUD LAW”)

The MPPUD Law establishes the Ministry of Physical Planning and Urban Development (MPPUD), which is charged with the responsibility of formulating and implementing state policies for urban and regional planning, physical development of the state including the spatial location of infrastructural facilities. The responsibilities of the MPPUD include:

- ( i ) Formulating and implementing state policies for urban and regional planning, physical development of the state including the spatial location of infrastructural facilities;
- ( ii ) Providing technical and professional assistance including capacity building to state Government Agencies, Local Planning Authorities and other Physical Planning Agencies;
- ( iii ) Overseeing and coordinating physical planning projects and programs which are technically and financially supported by international donor agencies;
- ( iv ) Processing and granting planning approval and clearance to prospective developers and various land users in the state;
- ( v ) Initiating, formulating and implementing strategies for development of urban and rural settlements;
- ( vi ) Controlling outdoor advertisement, signage and bill boards in the state; and
- ( vii ) Coordinating and implementing all United Nations Programs on habitat, urban development and human settlements, including the World Habitat Day.

#### • EMPOWERMENT

Under the MPPUD Law, the MPPUD is empowered to impose sanctions on any person who violates any provisions of the MPPUD Law. Section 12 of the MPPUD states that any person who engages in development without approval, contrary to the physical development plan or approval of the Ministry, shall be liable to ₦30,000 fine or nine months' imprisonment.

In addition, Section 35 provides that a stop work order may be issued on a developer where it appears that an unauthorized development is being carried out or where the development does not comply with the development permit. Non-compliance with a stop work order renders the person liable to a fine not exceeding ₦10, 000 and in the case of a corporate body the fine is ₦50, 000.

#### • INCENTIVES

The MPPUD Law is a law about physical planning and urban development of Oyo State and its functions include the formulation and implementation of state policies for urban and regional planning, physical development of Oyo State including the spatial location of infrastructural facilities. Therefore, it is useful with respect to various developers wishing to construct dumpsites for the management of waste in the state.

Consequently, Section 23 of the MPPUD Law provides that a development permit is valid for 2 years from the date of communication of the approval but subject to revalidation. In addition, a dissatisfied holder of a development permit may appeal against the decision of the MPPUD to the Urban and Regional Planning Tribunal with respect to the revocation of its permit.

In relation to Section 25 (i) of the MPPUD Law, which allows for the revocation of a development permit, where the site is required for overriding public interest, the law does not specify any information on compensation. However, under Nigerian Law, parties are free to agree on any terms and conditions so far as there are no vitiating elements, e.g. fraud, duress, misrepresentation etc. Therefore, even though the law is silent on compensation, it does not preclude the coverage of compensation and exit fees in a separate contract/agreement.

## • DISINCENTIVES

Section 25 of the MPPUD Law provides that a development permit is subject to revocation on grounds which include:

- (i) Where the site is required for overriding public interest; and
- (ii) Where false information was given by the developer who applied for the permit.

As regards Section 25 (i) of the MPPUD Law, since a development permit may be subject to revocation where the site is required for overriding public interest, it may create skepticism for any potential PSP. This is due to the fact that it is difficult to determine when the Government may decide that an area which has been developed or undergoing development should be acquired for overriding public interest.

It may be pertinent to also add that the MPPUD Law is silent on compensation in this regard, and as such may be difficult to obtain same from the Government in such event.

## OYO STATE ENVIRONMENTAL PROTECTION AGENCY LAW 2012 (OSEPA LAW)<sup>16</sup>

The OSEPA Law, which repealed the Oyo State Environmental Protection Agency Law 1999, established the Oyo State Environmental Protection Agency (OSEPA). The OSEPA Law makes provision for the constitution, functions, duties and powers of OSEPA and for other matters connected therewith. The OSEPA Law also establishes the Advisory Technical Committee on the Environment (the "Committee"), the Local Government Environmental Protection Bodies and the Environmental Protection Tribunal ("the Tribunal"). The Tribunal has the jurisdiction of a Chief Magistrate Court.

## • SERVICES AND RESPONSIBILITIES

The functions of OSEPA include the following:

- (i) Formulating and enforcing policies, statutory rules and general environmental protection, controlling and regulating the ecological system and all activities related thereto; and
- (ii) Initiating measures to ensure pollution free air, land and water throughout the state.

Whilst the functions of the Committee include:

- (i) Recommending management options such as minimization, recycling of waste for industries and government operations in order to reduce degradation of the environment;
- (ii) Reviewing and recommending the basic standard requirements for solid, liquid, gaseous or toxic or hazardous waste management in the State; and
- (iii) Establishing and recommending acceptable safe methods of collection and disposal of hazardous and toxic waste.

## • EMPOWERMENT

The powers of OSEPA include:

- (i) To require to be produced, examine and take copy of any license, permit, certificate or any document required under the OSEPA Law; and to apply enforcement measures to combat environmental degradations in manufacturing, commercial and residential premises and government operations;<sup>17</sup>
- (ii) To apply enforcement measures to combat environmental degradations in manufacturing, commercial and residential premises, and government operations;
- (iii) Enter into programs agreements of technical assistance with public or private bodies concerning environmental protection; and
- (iv) Establish environmental criteria, guidelines, specifications or standards for the protection of the air, land inter-state waters as may be necessary to protect the health and welfare of the population from environmental degradation.

<sup>16</sup> The OSEPA structure is not yet in place. Currently the Pollution Control Unit of the Ministry of Environment and Habitat exercises the functions and responsibilities of the Agency.

<sup>17</sup> It is our understanding that this includes waste management, given the functions of the Committee established by the OSEPA law. It must be noted however that the OSEPA structure is not yet in place. Its intended functions and responsibilities are currently performed by the Pollution Control Unit of the Ministry of Environment and Habitat.

- **INCENTIVES**

There appear to be no incentives to PSP under the OSEPA Law.

- **DISINCENTIVES**

There appear to be no disincentives to PSP under the OSEPA Law.

## LAWS OF LAGOS STATE

### ENVIRONMENTAL SANITATION LAW 2003

This Law provides for environmental sanitation in Lagos State and imposes general duties in relation to keeping the streets of Lagos clean, including prohibiting dumping of waste in public areas. The ESL establishes the Environmental Sanitation Corps and stipulates that no person shall dispose of domestic refuse or waste except through a Private Sector Participation Operator. The Environmental Sanitation Enforcement Agency collaborates with the Ministry of Environment and Physical Planning in carrying out its functions under the ESL including registration and licensing of PSPs.

- **SERVICES AND RESPONSIBILITIES**

Pursuant to the ESL, it is the duty and responsibility of individuals to:

- a. Keep clean the sidewalk and gutter area along the building frontage, side and back at all times;
- b. Put refuse into securely tied plastic bags or leak proof dustbins with tightly fitting lids;
- c. Keep refuse dustbins within their premises until the time of collection; and
- d. Not litter, sweep out or throw ashes, refuses, paper, nylon and rubbish into any street, public place or vacant plot.

- **EMPOWERMENT**

- (i) The ESL empowers authorized officers of the Ministry of the Environment and Physical Planning (the “**Ministry**”) and Local Government (LG) between the hours of 8

a.m. and 6 p.m. to enter and examine any tenement or frontage, back or any side of a tenement in order to ascertain the existence of any nuisance;

- (ii) The ESL further empowers the Ministry to construct any structure which may be deemed necessary for the clearing, cleaning or inspection of a drain or drainage system;
- (iii) The Local Government may authorize in writing any of its officers to:

- Inspect any open space, public place, recreation ground, drain or drainage system, restaurants and such places as may be designated; and
- Carry out other work in a lawful manner on a drainage system for the continuous flow of such drain or drainage system.

Section 23 of the ESL empowers the Ministry in collaboration with the LG to designate certain areas in the state as refuse disposal sites for the deposit of refuse or waste.

- **INCENTIVES**

The ESL protects the interests of registered private sector participants by penalizing any person who fails to patronize an appointed private refuse operator by subjecting such persons to the payment of fines and/or penalties.

- **DISINCENTIVES**

There appear to be no disincentives to PSP under the ESL.

### ENVIRONMENTAL SANITATION ENFORCEMENT AGENCY LAW 2003 (“ESEA LAW”)

The ESEA Law establishes the Environmental Sanitation Enforcement Agency (ESEA).

- **SERVICES AND RESPONSIBILITIES**

The ESEA is tasked with the responsibility of enforcing the provisions of all Laws relating to environmental sanitation in the State as well as any other duties as may be directed by the Governor. These Laws include:

1. Street Trading and Illegal Markets (Prohibition) Law;

2. Sand Laterite and Gravel Spillage (Prohibition) Law;
3. Road Traffic (Removal of Abandoned Vehicles) Law;
4. Survey Law and its Regulations;
5. Environmental Sanitation Law;
6. Town and Country Planning Law and its Regulations;
7. Environmental Pollution Control Law.

#### • EMPOWERMENT

Pursuant to the ESEA Law, the ESEA shall have the power to:

- a. Demolish any structure constituting public nuisance; and
- b. Impound or take custody of any vehicle, goods, wares, articles or things found in any place that is prohibited under any of the Laws.

Further to the provisions of the ESEA Law, a Special Offences Court is empowered to inter alia, try all offenders who contravene any of the provisions of the Laws specified in the Schedule to the ESEA.

#### • INCENTIVES

There appear to be no incentives to PSP in the ESEA Law.

#### • DISINCENTIVES

There appears to be no disincentives to PSP in the ESEA Law.

### ENVIRONMENTAL POLLUTION CONTROL LAW 2003 (“EPC LAW”)

The EPC Law was enacted to provide for the control of pollution and protection of the environment from being abused due to poor waste management. The EPC Law establishes the Environmental Pollution Control Advisory Committee (the “Advisory Committee”) and the Environmental Pollution Control Advisory Sub-Committee (the “Sub-Committee”).

The Ministry of the Environment and Physical Planning (the “Ministry”) is enjoined to work with the Advisory Committee in furtherance of the provisions of the EPC Law. Under the EPC Law, the

dumping of waste or burying of toxic or radioactive and other harmful wastes is strictly prohibited.

#### • SERVICES AND RESPONSIBILITIES

The functions of the Advisory Committee include formulating policies on environmental sanitation, pollution and environmental conservation matters.

The functions of the Sub-Committee as stated in the EPC Law include:

- Establishing and recommending basic standard requirements for solid, liquid, gaseous or toxic waste management in the State;
- Examining and recommending recycling of waste as a management method for the industries and State government; and
- Establishing and recommending acceptable safe methods of collection and disposal of hazardous and toxic waste in the State.

The Ministry shall be responsible for implementing any policy formulation of the Advisory Committee and shall provide the Advisory Committee with the data required for policy formulation.

The responsibilities of the Ministry include:

- Monitoring and surveying solid, gaseous and liquid wastes generated in the State;
- Educating the public on the types of disposal methods acceptable by the State government for domestic and industrial waste; and
- Initiating and reviewing environmental protection legislation to reflect the latest discoveries and practices.

#### • EMPOWERMENT

The powers of the Ministry are exercised by the Environmental Pollution control and Sewage Department and include the powers to:

- Demand Pollution Discharge Charge from any industrial/commercial company discharging any form of pollutant (including solid) into the environment; and

- Control siting and management of waste dump sites.

Sections 11, 12, and 13 of the EPC Law provide that the Ministry may issue to any person who generates waste in in the process of manufacturing operations, written permission to discharge said waste provided the waste has been purified and treated to the satisfactory standards of the Ministry.

Prior to discharge, once the waste has been treated and certified by the Ministry as being in compliance with its standards, the Ministry shall issue a written permission, renewable every twelve months to such person for such discharge. A copy of the written permission obtained shall be displayed at the premises where the waste is generated.

Any industrial/commercial company who fails or neglects to pay the Pollution Discharge Charge mentioned above shall upon conviction be liable to a fine not exceeding ₦500,000.

#### • INCENTIVES

There appear to be no incentives to PSP in the EPC Law.

#### • DISINCENTIVES

There appear to be no disincentives to PSP in the EPC Law.

### LAGOS STATE ENVIRONMENTAL PROTECTION AGENCY LAW 2003

The LASEPA Law establishes the Lagos State Environmental Protection Agency (LASEPA). The LASEPA Law also establishes a body known as the Advisory Committee (the “**Committee**”). LASEPA is the environmental regulator for Lagos State.

The LASEPA Law makes specific provisions for the discharge and treatment of waste by prohibiting the discharge of waste into the environment.

#### • SERVICES AND RESPONSIBILITIES

The functions of LASEPA include:

- a. Monitoring and controlling the disposal of solid, gaseous, and liquid waste generated by both government and private facilities in the State;

- b. Carrying out public enlightenment and education of the general public on sound methods of environmental sanitation and management;
- c. Co-operating with Federal, State and Local Governments, statutory bodies and research agencies on matters and facilities relating to environmental protection;
- d. Promoting co-operation in environmental science and technologies with similar bodies in other countries and international bodies connected with the protection of the environment; and
- e. Co-operating with the Federal, State and Local Governments, statutory bodies and research agencies on matters and facilities relating to environmental protection.

The functions of the Committee include:

- (i) Examining and recommending on continuous basis other management options such as minimization, recycling of waste, etc. for industries and government operations in order to reduce degradation of the environment;
- (ii) Reviewing and recommending the basic standard requirements for solid, liquid, gaseous or toxic waste management in the State; and
- (iii) Establishing and recommending acceptable safe methods of collection and disposal of hazardous and toxic waste in the State.

#### • EMPOWERMENT

In carrying out its functions as stipulated under the LASEPA Law, LASEPA is empowered to, inter alia:

- a. Require to be produced, examine and take copy of any license, permit, certificate or any other document required under this Law;
- b. Enter into programs, agreements of technical assistance with public or private bodies concerning environmental protection;
- c. Apply enforcement measures to combat environmental degradations in manufacturing premises and government operations; and

- d. Make regulations generally for the carrying into effect the purpose of the LASEPA Law in particular waste management options.

#### • INCENTIVES

There appear to be no incentives to PSP in the LASEPA Law.

#### • DISINCENTIVES

There appear to be no disincentives to PSP in the LASEPA Law.

### LAGOS STATE WASTE MANAGEMENT AUTHORITY LAW (“LAWMA LAW”) 2007

This Law was passed to establish the Lagos State Waste Management Authority (the “**Authority**”) and to regulate other matters connected therewith. The day-to-day administration of the Authority is carried out by the Governing Board (the “**Board**”).

It also regulates the licensing of private waste collectors. Section 9 provides that no person shall establish or operate any waste collection business without a license issued by LAWMA.

#### • SERVICES AND RESPONSIBILITIES

The Authority’s responsibilities under LAWMA Law include:

- ( i ) The removal, collection and disposal of domestic, commercial and industrial waste;
- ( ii ) Clearing and maintaining public drainage facilities;
- ( iii ) Cleaning the streets;
- ( iv ) Preparing and updating master plans for waste collection and disposal in the State;
- ( v ) Controlling the waste system within the State;
- ( vi ) Approving and monitoring all waste disposal systems in the State;
- ( vii ) Monitoring the enforcement activities and operations of private sector participants;
- ( viii ) Ensuring compliance with waste management activities;

- ( ix ) Issuing, renewing and revoking licenses of private waste collectors; and
- ( x ) Making provisions for waste management services to State agencies, local government, industries, business entities and private persons within the State by receiving waste at the Authority’s facilities pursuant to contract agreement between the Authority and such other party.

Under the LAWMA Law, the Authority may carry out its functions in association with any other person or body lawfully empowered to do so in accordance with the provisions of the LAWMA Law.

#### • EMPOWERMENT

By virtue of the provisions on LAWMA Law, the Authority is empowered to:

- a. Set, collect and revise rates/charges for the use of facilities or services provided by LAWMA;
- b. Establish and manage organizational structure for recycling in the State;
- c. Enter into agreement which may be necessary for and incidental to the discharge of its functions under the LAWMA Law or any other enactment;
- d. Enter into contracts with Local Governments, State agencies, regional authorities and private persons to provide waste management services and to design, construct and manage/operate solid waste disposal and processing facilities on their behalf; and
- e. Charge commercial tariffs which may vary from area to area and make direct charges on users for services rendered where such circumstances may arise.

Furthermore, the Board may, with the approval of the Governor, make regulations for the efficient implementation of this Law with respect to matters including:

- a. The price and charge for removal and collection of waste;

- b. The amount to be paid for issuance and renewal of licenses; and
- c. The prescription of penalties for offences against any regulation made under this section.

It is worthy of note that the Lagos State government shall have the power to designate a place as sanitary landfilled area where waste collected may be dumped and that LAWMA exercises the sole right to design, plan, operate, manage, construct and maintain such designated areas.

- **INCENTIVES**

There appear to be no incentives to PSP in the LAWMA Law.

- **DISINCENTIVES**

The limited validity period of licenses (one year) issued to private sector participants is a disincentive, as it may be a challenge for private sector participants to obtain loans from financial institutions or private investors.

### **SAND, LATERITE AND GRAVEL SPILLAGE PROHIBITION LAW 2003**

This Law prohibits spillage of sand, laterite and gravel on the highways and other roads in the State. Section 1 of this Law requires the driver of any vehicle carrying sand, laterite or gravel to cover said vehicle with tarpaulin or plastic to prevent spillage. It also prohibits drivers from discharging sand, laterite or gravel on the side of any highway or road in Lagos.

- **AUTHORITY**

Environmental Sanitation Enforcement Agency (ESEA)

- **EMPOWERMENT**

Any driver who fails to cover the vehicle with tarpaulin or plastic in accordance with section 1 or discharges the sand etc. on the side of the road shall be liable upon conviction to a fine of ₦50.00 or three months imprisonment.

Any driver who negligently spills sand etc. on any

highway or road in Lagos shall be liable upon conviction to a fine of ₦100.00 or six months imprisonment.

- **INCENTIVES**

There appear to be no incentives to PSP in this Law.

- **DISINCENTIVES**

There appear to be no incentives to PSP in this Law.

## **REGULATORY GAPS**

The study has taken out a comparison between Oyo State Waste Management Laws and those of Lagos State (which is the largest urban State in Nigeria) in order to provide a report on the regulatory gaps we have identified in certain Oyo State Waste Management Laws.

### **1. Oyo State Solid Waste Management Authority Law 2004 (OYOWMA Law) and Oyo State Solid Wastes Management Authority (Amendment) Law 2012**

- a. **LICENCES**

There appears to be no regulatory gap between the OYOWMA Law and LAWMA Law. The OYOWMA Law is the equivalent to the Lagos State Waste Management Authority ("LAWMA") Law 2007, in Lagos State. Under the LAWMA law, PSPs are expressly provided for and issued upon application, a Private Waste Collector License. Similarly, under the OYOWMA Law, refuse contractors are required to register with the Oyo State Waste Management Authority (OYOWMA) and subsequently issued a license to operate. Licenses issued by LAWMA and OYOWMA are valid for one (1) year and may be renewed upon expiration.

Section 10 of LAWMA Law provides that:

*"Subject to the provisions in this law with respect to the suspension or cancellation of license for contravention, a license shall remain in force for a period of one (1) year from the date of issue and shall expire at the end of that period."*

Similarly, section 37 (2) of the OYOWMA Law provides that:

*“The Authority shall also have power to fix necessary amount as registration fees which shall be renewable annually and also subject to review from time to time.”*

#### **b. DESIGN AND MAINTENANCE OF DESIGNATED AREAS**

In Lagos State, LAWMA exercises *the sole right* to design, plan, operate, manage, construct and maintain areas designated by the Lagos State Government as sanitary landfill areas where waste collected may be dumped. The OYOWMA Law does not vest such power and authority in OYOWMA; even though section 6(1) of the OYOMA law states that the authority shall be responsible for the maintenance of sanitary Land fill sites around the State and charging rates for their usage. Although Section of 22 of the OYOWMA Law states that for the purpose of carrying out any of its objects under the law, the Authority may after giving notice to the owner or occupier of any land or premises within the State, enter upon any such land or premises and thereon do other acts reasonably necessary for carrying such objectives and enter any road or place to which the public have access for carrying out such objectives; it may be pertinent to have the law specifically have a provision giving OYOWMA the sole right to design, plan, operate and maintain landfills.

#### **2. Ministry of Environment and Habitat Law, 2011 (“MEHL”) DISPOSAL OF REFUSE OR WASTE THROUGH A PSP OPERATOR**

Under the MEHL, the Ministry of Environment and Habitat (“MEH”) of Oyo State is empowered to declare any day as environmental sanitation day, restrict movement for specified hours and mobilize the populace for environmental sanitation activities. In Lagos, the Environmental Sanitation Law 2003 (“ESL”) and the Environmental Sanitation Enforcement Agency Law (“ESEA”) provide for environmental sanitation in Lagos State and impose duties on the general populace to keep the streets of Lagos clean. ESL further stipulates that no person shall dispose of domestic refuse or waste except through a PSP Operator.

The MEHL contains no such provision however, the MEHL states that no person shall engage in the business of solid or liquid wastes disposal, soak away pits evacuation, horticultural practice or any other business connected with the sanitation, pro-

tection, beautification or maintenance of the environment without registration. As indicated above, this registration takes place with OYOWMA; multiple registrations with different authorities are not required.

#### **3. Ministry of Physical Planning and Urban Development Law 2012**

This law regulates regional planning, physical development of the State including the spatial location of infrastructural facilities. The Ministry of Physical Planning and Urban Development processes and grants planning approval and clearance to prospective developers and various land users in the State. It would appear that this would also apply to developers of prospective land fill sites or other infrastructural developments related to waste and its disposal.

However, in Lagos, LAWMA, as stated above exercises the sole right to design, operate and construct designated waste disposal areas. In view of the fact that OYOWMA is tasked with the responsibility of storing, managing, converting, transferring and the disposal of solid waste, it may be helpful for OYOWMA to be able to exercise the above mentioned right.

### **INCONSISTENCIES**

The World Banks’ review of the Oyo State Waste Management Laws; it appears that there are no inconsistencies in the provisions of these laws.

### **INFORMATION FROM OYO STATE WASTE MANAGEMENT AUTHORITY**

From the World Bank engagements with OYOWMA information was provided on the general processes at OYOWMA, we were provided with information on the general processes and procedures adopted by OYOWMA with respect to registration and licensing of PSP operators. These are outlined below:

#### **1. Procedural Requirements:**

- a.** The proposed PSP must submit an application form for the category or categories in which they intend to operate:

- ( i ) Domestic - ₦2,500.00;
- ( ii ) Commercial - ₦5,000.00;
- ( iii ) Industrial - ₦10,000.00;

- b.** The prospective PSP must be registered in accordance with the provisions of the Companies and Allied Matters Act 2004;
- c.** Evidence of registration of business premises with the Ministry of Trade and Investment, Oyo State;
- d.** Copies of the company's financial records for the three (3) years immediately preceding the application for registration/license;
- e.** Tax clearance of two (2) directors of the company for three (3) years consecutively;
- f.** Evidence of ownership of at least one (1) refuse compactor truck of 10-30 metric tons capacity;
- g.** Copy of the company's profile containing information on key staff, operational bank details and experience; and
- h.** Evidence of registration with the Environmental Health Officers Registration Council of Nigeria.

## 2. Duration of Contract

A license granted to operate as a PSP operator is valid for one (1) year and may be renewed at an assessed fee to be determined by OYOWMA. This suggests that there is an element of discretion as regards fees for renewal. This is likely to pose some difficulty to prospective PSP operator who would require at least, an idea of what costs are associated with registration and subsequent renewals.

## 3. General Information

As regards billing, private sector participants in Oyo State are expected to bill end users directly for the services they offer. However, PSP operators are mandated to remit 20% of their monthly income to the State Government.

## INFORMATION FROM LAGOS STATE WASTE MANAGEMENT AUTHORITY

The World Bank team made enquiries at LAWMA, speaking with a member of the Customer Care Unit

of LAWMA, who provided details on, inter alia, the procedure for becoming a licensed PSP operator and informed the study to follow:

### 1. Procedural Requirements:

- a.** The applicant must submit an application to LAWMA on the company's letter head;
- b.** The applicant must purchase and present two (2) compactors for inspection within a specified number of days;
- c.** The compactors will be inspected by authorized LAWMA officials to ensure they are in good and satisfactory condition; and
- d.** The compactors must be branded with the company's Logo.

In addition, private waste collectors are required to pay a registration fee of ₦200,000, payable annually and the applicant is also required to submit a certificate of incorporation and the vehicle documents in relation to its trucks. Furthermore, LAWMA imposes a fee on PSP operators for the use of TLS at the rate of ₦1,000 per trip.

### 2. Government Constraints and Challenges

The World Bank team was informed that the government has promulgated legislation which safeguards operators and insulates them from risks within the business. Also under PSP arrangements, operators are at liberty to bill end users directly for the services offered. In addition, there is a mandatory remittance rate of 40% of earnings to the State Government; however this is applicable only to commercial waste operators.

One of the challenges faced by the operators and Lagos State Government is malfunctioning of the waste-management equipment owned by the operators. Where this occurs, the government is usually obliged to take over the waste management services in the interim. However, should this downtime persist for a protracted period of time, LAWMA will be compelled to suspend the contract and to assume full responsibility for waste management services over the franchised area.

### 3. Duration of Contract

LAWMA will issue a provisional license first which

is valid for a period of six (6) months – one (1) year. Thereafter, a permanent license will be issued, the terms of which may be negotiated by the parties.

We were unable to get confirmation on the maximum validity period which may be negotiated for a license. An annual registration fee is however levied on operators.

#### 4. General Information

Generally, PSPs in Lagos State are permitted to charge end users directly for the services they provide. However, the Lagos State Government has set a fixed fee which an operator may impose on end users in respect of some areas, such as low-brow areas on the mainland. With respect to services provided in highbrow areas such as the Island, operators may determine the amount of fees charged, subject to a maximum cap imposed by the government.

A proposed operator is required to conduct an assessment of the relevant franchised area which will form the basis of the projected remuneration that is likely to be generated by the operator. The operator will then submit this assessment/projected remuneration to LAWMA and will consequently be expected to make up to 60% of the projected emolument. LAWMA conducts annual audits on the operators in order to ensure fulfilment of the 60% requirement. If the operator's earnings fall short, the government will advise the operator on ways to improve performance and boost profits.

Furthermore, where there is a short fall, the government may provide support to operators in the form of financial incentives in order to cover the shortfall and to sustain the viability of the business in the short-term. Such financial incentives are typically granted to PSP's operating in low brow/income areas. However, operators in highbrow/income areas may apply for loans from the government as may be required to stay afloat.

## RESEARCH CONDUCTED ON TWO (2) PRIVATE SECTOR PARTICIPANTS IN LAGOS STATE

### Musiliu Asim Nigeria Company

#### 1. Registration

It is a requirement for interested PSP operator to

register with LAWMA. A minimum of two (2) compactors must be presented for inspection by authorized LAWMA officials at the time of registration.

#### 2. Categories of Operators

There are two (2) categories of operators under the PSP Scheme in Lagos namely domestic and commercial operators:

- **Domestic Operators:** These operators are primarily responsible for the collection and disposal of waste generated from domestic settings. They go from house to house collecting waste and disposing same.

- **Commercial Operators:** They are responsible for the collection and disposal of two (2) types of waste, namely medical waste and industrial waste which are collectively known as Commercial Waste. Medical waste is waste which emanates from healthcare facilities whereas Industrial waste is produced from industrial sites such as factories.

LAWMA occasionally awards franchises to large PSPs for the performance of waste management services in areas known as "Franchised Areas". Where an operator is awarded a franchise area, this empowers them to exclusively perform waste management services in respect of the relevant franchised area. It also permits an operator to bill directly for the provision of the foregoing services. The operator is however required to remit a fee of 10-15% of its annual turnover to LAWMA. In addition the Lagos State Government is empowered to audit the accounts of any operator as part of its supervisory functions.

#### 3. Government Assistance

The Lagos State Government provides an enabling environment for operators to thrive in the form of laws and regulations some of which mandate that every household must dispose of its waste through a PSP operator.

#### 4. Duration of Contract

PSP contracts are renewable annually but may be negotiable. Franchise contracts on the other hand are usually awarded for a duration of 5 (five) - 10 (ten) years. The standard PSP contract is for one (1) year. However, PSP operators can renegotiate their contracts with LAWMA and will then be treated on an individual basis. LAWMA will also review the

PSP's operations based on their performance, effectiveness, frequency of evacuation, mandate given, capacity and number of compactors.

### Grace-X (OGX)

OGX confirmed the above categories of operators under the PSP scheme, namely domestic and commercial operators and a third category (Public Waste Operators) responsible for the collection and disposal of public waste.

- **Public Waste:** This is waste that originates from public areas such as bins positioned closely to markets and waste gathered from public highways. Management of this category of waste is usually assigned to public waste operators.
- **Domestic Operators:** Local Government Areas in Lagos State, for the purposes of PSP operations are divided into wards. Domestic Operators who deal with domestic waste are therefore usually awarded franchises in respect of these wards.
- **Commercial Operators:** LAWMA outsources management of commercial waste to commercial operators. However, payments for these services are directly remitted to the government who will first deduct a certain percentage (between 20%-40%) as a fee and then remit the outstanding balance to the PSP operators. The percentage deducted by the government varies between 20%-40% and depends on a variety of factors including the types of facilities utilized by the operator, etc.

#### 1. Duration of Contracts

An employee of OGX also confirmed that the duration of PSP contracts are negotiable. They, however, stressed the importance of performance which he highlighted as a key factor in determining the duration of contracts. They specifically mentioned by way of example, that a contract of 3 (three) years could be shortened/withdrawn should an operator fail to perform to a satisfactory standard. The World Bank team was informed that the contract may be revised upon complaints by residents in the area allocated to the PSP operators. Examples of perfor-

mance criteria include: capacity levels (such as vehicular capacity and staff) and frequency of evacuations. Performance criteria are set in the contracts however; it may be reviewed at subsequent meetings with the PSP operators.

#### 2. Financial Support

In some areas in Lagos State such as Ajegunle and Ijora, operators often face difficulty in collecting payment for services rendered. In these circumstances, the government may subsidize these expenses by providing stipends to operators to ensure that they continue to provide waste management services in those areas.

## RESEARCH CONDUCTED ON TWO (2) PRIVATE SECTOR PARTICIPANTS IN OYO STATE

**Poroku & Co.**

### 1. Registration Formalities:

- The applicant is required to submit an application to OYOWMA after which the applicant will be invited for an interview;
- The applicant must demonstrate financial capacity, competence (in the form of experience and technical know-how) and capability (in the form of manpower);
- The applicant must also present two (2) compactors for inspection and its corporate documents including:
  - Certificate of incorporation;
  - Tax clearance certificate for the preceding three (3) years; and
  - Vehicle documents etc.;
- OYOWMA will then issue a provisional license to the applicant. This license authorizes an operator to commence operations on the condition that it will settle any outstanding payments (if any) and meet any outstanding requirements upon commencement of operations;
- Upon the issuance of a provisional license, OYOWMA will assign an area of operation to the licensee in any of the following three (3) categories:
  - Industrial (such as waste generated by manufacturing industries);
  - Commercial (waste emanating from offices, businesses, banks, eateries, markets, etc.); and
  - Domestic (waste gathered from domestic settings).;
- It is pertinent to mention that after commencement of operations, and upon the satisfaction of any outstanding requirements, OYOWMA will replace the provisional license with a permanent license. In addition, if there are no available areas of operation in Ibadan, OYOWMA will assign the operator to other areas outside Ibadan such as Iseyin.

### 2. Government Fees

OYOWMA charges dumping fees in respect of each landfill utilized by an operator. In addition, OYOWMA also levies an annual licensing fee however this fee varies, depending on the areas and categories of operations.

### 3. Guarantees

The Oyo State Government (OSG) does not offer any guarantees to operators.

### 4. Incentives and Disincentives / Financial Incentives

No incentives, financial or otherwise are offered by the OSG. This is unlike in Lagos State, where the Lagos State Government offers subsidy for payment to encourage the PSP operator stay functional where revenue collection proves difficult from certain customers.

### 5. Government Assistance

There is no assistance offered by the OSG to the operators.

### 6. Duration of Contract /Billing Procedure

The contract with OYOWMA is typically valid for one (1) year and is renewable annually subject to satisfactory performance and payment of the annual renewal fee.

With regard to the billing procedure, operators are authorized to bill their clients directly.

### 7. Leasing and Maintenance of Equipment

Under Oyo State Waste Management laws, OYOWMA is empowered to lease its equipment to operators. However, in practice, OYOWMA usually experience shortfalls and sometimes lease equipment from the operators themselves.

## Development Planning Consortium Limited (“DPCL”)

### 1. Registration

In DCPL it is a requirement for interested PSPs to register with OYOMA and for OYOMA to inspect the equipment to be utilized for the disposal of waste. The equipment must be suitable for the proper disposal of waste / be able to convey solid waste efficiently. The World Bank team was informed that any such equipment must be branded with the company’s logo.

## 2. Incentives and Disincentives / Financial Incentives

A member of the DPCL stated that they are not aware of any incentives to participating in solid waste management in Oyo State but added that a major disincentive is the fact that the agreement with OYOWMA is constantly changing. Consequently, that there is no job guarantee.

In addition, although DCPL does not have any form of financial support from the State, it has an internally arranged support programs through a co-operative society.

## 3. Government Assistance

OSG provides no proper structure and it appears that OSG is nonchalant whether the private sector is involved in waste management in the State. In addition, the OSG does not enforce the proper disposal of waste by the residents in the State.

## 4. Duration of Contract /Billing Procedure

PSP contracts are for 1 (one) year, renewable annually.

## 5. Leasing and Maintenance of Equipment

A member of the DPCL stated that in the past it was possible to lease equipment from OYOMA; however, this is no longer possible as OYOMA trucks are worn-out due to lack of maintenance. Consequently most PSPs in Oyo State lease trucks / equipment from private companies.

## CHALLENGES

From a review of the relevant laws and interviews with the above mentioned PSPs, the World Bank team is of the view that the following are the major challenges for private sector participation in solid waste management in Oyo State:

- Monitoring and enforcement of the various laws by the relevant authorities;
- The duration of licenses issued to private waste collectors in Oyo State is limited (currently one year). This should be increased to ensure long term investment on the part of the operators: ranging from 3-4 years for waste collection (2-3 years could be applied during a transition phase) to between 8 and 25 years for waste processing such as material and energy recovery and landfill management;

- OYOWMA can change the registration and renewal fees without notice, which creates uncertainty for the private sector participants.
- The Oyo State Government should amend the law in order to ensure that OYOWMA (like LAWMA in Lagos State) has the sole right to design, build and operate areas designated as sanitary landfill areas in Oyo state;
- Oyo State laws should be reviewed with a view to vesting greater powers in OYOWMA to do any acts reasonably necessary for carrying out its objectives; and
- Significant amounts are expended by prospective PSPs in order to comply with all the requirements for registration and obtaining a license. This may dissuade a lot of potential operators from venturing into the waste management business.

## RECOMMENDATIONS

- The current rules and regulations regarding solid waste management are not adequately enforced, and this means existing attitudes to waste disposal remain entrenched. Considerable effort should be put towards ensuring that the relevant authorities in Oyo State, tasked with the supervision of solid waste management, e.g. OYOWMA and the Ministry of Environment and Habitat, adequately enforce the laws that would protect all stakeholders, particularly PSPs. This is because, where the government fails to enforce the provisions of the laws, such as the requirement on householders and business owners to properly dispose of waste through authorized waste management contractors, this results in losses for the PSPs and decreases their interest as well as their ability to operate with a profit;
- There is insufficient information on the levels of revenue that can be achieved within the areas franchised for waste collection. The Oyo State Government should ask for private waste operators in Oyo State to conduct an assessment of relevant franchised areas which will form the basis of

their projected remuneration and submit their assessment/projected remuneration to OYOWMA. In order to gather unbiased information we should:

- implement weighbridges;
  - design and feed databases;
  - produce quarterly and annual operation reports;
  - strengthen the human resources capacities of OYOWMA;
- Currently there are no financial models to estimate the cost of waste management in Ibadan. The financial model for investments and operation of waste management activities in Ibadan should be established. This should define the fees that need to be collected to cover the costs of operating and upgrading waste management to ensure that the operators are adequately remunerated. Still the decision to choose between a tax (which depends on the capacity to pay of the person and is redistributive) and a fee (which is based on the service provided) is a political choice. The scenarios resulting from this choice will be developed in the final report;
  - Areas where waste operators face difficulty in collecting payment for services rendered, the Oyo State Government may provide guarantees and subsidize expenses incurred by the operators to ensure that they continue to provide waste management services in those areas;
  - There are no transfer stations in Ibadan which increases the cost for waste transportation. Oyo State should establish transfer stations around the metropolitan area as they are the most efficient solution to quickly improve the current performance. The transfer stations would enable the collection vehicles to remain longer in the collection areas every day and to reduce the risks of damage to the collection vehicles on their way to the landfills. Larger and more robust waste truck could be used to transport waste from the transfer stations to the landfills;
  - The PSP should be expanded in the short to medium term to street cleaning, the operation of transfer stations and landfills and integration of the informal sector in recycling. On the medium to long term improvements in equipment, facilities and infrastructure should also be open to public-private partnerships, e.g. Build-Operate-Transfer. Before all of that can be implemented we need to clearly define:
    - the technical, financial and environmental requirements for the Private Sector (e.g. whether the private operator can change its pricing after two or three years?);
    - which entity owns the technical means when the contract ends or when the depreciation period is over;
    - the public service commitments of the service providers (the service providers can never stop their activities);
    - the means of action of OYOWMA in case of failure of the service provider.
    - All of the above requires a comprehensive thinking and a minimum of time.

## CONCLUSION

The Oyo State Government recognizes the importance of legislation as an instrument for ensuring an effective and integrated waste management system. However, as stated above, the current laws on solid waste management are not adequately enforced. Therefore, enforcement of existing laws and regulations is vital to improving solid waste management and increasing interest and profitability of private sector participants.

Furthermore, there is room for growth in the area of solid waste management in Oyo State, for example the area of waste treatment is virtually unexplored. Notwithstanding the apparent saturated list of private sector participants, much of this is in relation to waste collection and disposal. There are very few waste treatment plants being operated in Nigeria as such, this is an area that private sector participants in Oyo State could further explore.



## ANNEX 2

# POTENTIAL WASTE SERVICES AGREEMENT PROVISIONS

### INTRODUCTION

Set out below are a number of potential provisions that could be contained within a Waste Services Agreement between OYOWMA (“the Authority”) and a private sector waste company (“Waste Company”). The detail of the Waste Services Agreement and the applicability of the provisions below will depend on a number of factors that will need to be determined by the Authority. The most important of these factors are:

- ( i ) the scope of the works/services being requested;
- ( ii ) how payment for the delivery of the works/services is to be received by the Waste Company; and
- ( iii ) the expected size and capability of the private sector counter-party.

**Table 15:** Potential Waste Services Agreement Provisions

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Public Sector Party	<p>The exact identity of “the Authority” will need to be confirmed as it is not currently clear whether the Oyo State Solid Waste Management Authority or the relevant regional government will be the contracting party. This may depend on the proposed area that the Waste Services Agreement is intended to cover (i.e. whether there is intended to be a single Waste Services Agreement covering the entirety of Ibadan or a number of separate Waste Services Agreements covering smaller areas within Ibadan).</p> <p>The interface between the contracting Authority and other interested public sector parties will need to be considered.</p>	<p>The Oyo State Solid Waste Management Authority are the entity that currently provides the operational permit (the “Operation Permit”) to waste contractors.</p>
Private Sector Party	<p>The level of complexity of the Waste Services Agreement, the size of the area that the Waste Services Agreement covers and the risk transfer sought under it will be dependent on the type of organisation that the Authority is seeking to contract with.</p> <p>If the proposed waste companies remain small local operators with little or no financial strength (similar to those carrying out the current waste management services) then a significant degree of risk transfer, a large collection area and the inclusion of any major facility maintenance or construction obligations are likely to be inappropriate.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
	<p>If, however, the procurement process will contain financial and technical prequalification that will favour larger waste management companies with more experience and financial backing (either through their own balance sheet or by being able to secure suitable external funding) and the Authority is willing and able to structure the terms of the Waste Services Agreement so as to attract such larger waste management companies then there is scope for greater risk transfer and area coverage and an expectation of an improved and more streamlined service.</p>	
Term of Agreement	<p>The intention of the Waste Services Agreement should be to set out a long term partnering arrangement between the Authority and an appropriate Waste Company and the length of the Agreement should reflect this principle.</p> <p>If the intention is for waste companies to bid against each other for the right to enter into a Waste Services Agreement then the length of the Agreement has to be sufficient for these waste companies to see value in the time and cost associated with entering into a competitive process. If the terms of the Waste Services Agreement also envisage the successful waste company having to incur any up front capital expenditure (for instance if any construction or major maintenance work is required or if new equipment would be needed) then the Waste Services Agreement needs to be of sufficient length to allow the Waste Company to recover such capital expenditure under the WSA. Finally, if the Waste Company is intended to have to secure external funding, the term of the Waste Services Agreement must be of sufficient length and certainty to allow such funding to be obtained.</p> <p>The length of the WSA would always be subject to the right of the Authority to terminate the WSA where the Waste Company is in default (see further details below).</p>	<p>The current approach in Ibadan involves the issuance of an annual Operation Permit. A term renewable annually would not be appropriate for a more detailed Waste Services Agreement.</p> <p>Local legal input is required as to whether the Waste Services Agreement would supersede the Operation Permit or whether the Operation Permit needs to be issued in accordance with relevant legislation and would therefore need to sit alongside the WSA. If the Operation Permit is still required then the WSA should require the Authority to grant the Operation Permit annually, with termination of the Operation Permit as a result of default by the Waste Company also being a termination event under the WSA.</p>
Obligations on Service Provider	<p>The WSA will specify the Services required of the Waste Company and the standards that the Waste Company must meet in the performance of those Services. The Waste Company will be required to comply with all applicable legislation, guidance and good industry practice and (unless there are specific exclusions listed within the WSA) to obtain, maintain and comply with all necessary consents (whether granted by the Authority or a third party)</p>	<p>The obligations contained within the Operation Permit can be included within the WSA (and expanded upon where necessary).</p> <p>As per the terms of the Operation Permit, the Waste Company may still be separately prosecuted for breaches of any legislation.</p>

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Exclusivity	<p>The Authority will need to determine whether a number of WSA will be entered into in relation to different waste collection areas (for instance, having one WSA for each of the 11 local government areas within Ibadan) or whether the procurement is designed to attract waste companies of sufficient size (or able to form a consortium of sufficient size) that a single WSA can be entered into in relation to the entire Ibadan area.</p> <p>In either event, the Waste Company should be granted exclusivity over the specifically identified area within the WSA to avoid competition from other waste companies or the Authority itself.</p> <p>The Authority should also consider the interface between the public sector waste collection and the Waste Company. It would not be unusual for the public sector waste collection service to be taken over by the Waste Company to avoid any unnecessary interfaces and ensure that the Authority need only deal with the Waste Company on matters relating to waste management.</p>	<p>The Operation Permit already provides exclusivity protection in respect of allocated areas and includes a penalty for breach by the Waste Company of the exclusivity protection offered to other waste companies. This penalty could be included within the WSA (unless only one WSA is intended to be entered into, in which case the provision would not be necessary).</p> <p>It is understood that the Oyo State Solid Waste Management Authority would ideally like to cease its waste collection activities and that a transfer of the public sector waste collection services to the Waste Company would be preferable. Street sweeping activities will not be passed to the Waste Company.</p>
Waste Collection	<p>The main Services to be provided will relate to waste collection. Identified in the report it was expected that the Authority would specify the Services required on an “output” rather than an “input” basis. This means that the Authority sets out in general terms what their requirements are (for instance, the area and premises/collection points to be covered by the waste collection service and the frequency of collection) but expects the Waste Company to confirm the detail of how the Authority’s general requirements are to be met (for instance by specifying the collection route and collection timetable, the number of required staff and number of required vehicles).</p>	<p>Technical adviser input will be required in relation to the exact scope of works/services.</p>
Existing Landfill Operation	<p>One consideration for the Authority is whether the Waste Services Agreement should also cover the operation/management of the existing landfill sites to avoid interfaces between the Authority employees in control of the landfill sites and the Waste Company employees (including potential issues relating to the transport of waste from the point of collection to the point of landfill). This may only be possible if the existing landfill operations are fit for purpose (as otherwise the Waste Company may not want to take on such operations) or if the Waste Services Agreement includes requirements on the Waste Company to upgrade such existing landfill operations (in return for appropriate payment).</p>	<p>The Operation Permit envisages that 20% of the monthly collection charges are paid to, or retained by, the Authority for its administrative charges and maintenance of the landfill sites. It may be more efficient to allow the Waste Company to keep the monthly collection charges and control the landfill site operations themselves.</p> <p>If the existing landfill sites require major maintenance or other upgrading then the Authority will need to consider how this would be paid for. The Authority could agree to upgrade such facilities themselves prior to the Waste Company taking over such facilities, or the Authority could seek a</p>

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
		<p>Waste Company that is capable and willing to procure the upgrade itself under the Waste Services Agreement. Either of the above options is dependent on the Authority having the appropriate funds to pay for the development, either initially or through the WSA, as the Waste Company is unlikely to be able to generate sufficient revenues from the landfill site operation to be able to cover any initial or on-going capital expenditure.</p>
<p>Construction of New Facilities</p>	<p>More complex WSA often include construction obligations as well as services obligations. If the Authority is considering new landfill site operations or the construction of transfer stations (or any other waste management related sites) in order to increase the efficiencies of the waste collection service, it is possible to consider the inclusion of such construction as part of the WSA. However, note that this would require that the waste companies bidding for the right to enter into the WSA's either have construction expertise or, more likely, are able to appropriately sub-contract the construction obligations to an entity that does have such expertise.</p> <p>If new facilities are to be proposed then the Authority would need to undertake significant work prior to entering into the WSA to enable the relevant sites to be available for the Waste Company (for instance land identification and acquisition, environmental impact assessment and any other relevant surveys and any planning and other permissions).</p>	<p>The more complex the construction, the greater the risk of a construction related default under the WSA. It would be possible to separate out the construction and service obligations so that a construction default didn't necessarily also lead to termination of the services but if this approach was to be taken it may be preferable to source any new construction outside of the terms of the Waste Services Agreement and bring the facilities into the scope of the WSA once they have been completed. This would align the approach to other infrastructure improvements that would assist with the efficiency of the waste collection service but which would be procured outside the terms of the WSA (for instance in relation to improvement of the road network).</p> <p>Construction of new facilities would also involve additional considerations in relation to consents, for instance any planning permissions or permits that would be required. It is unlikely that the Waste Company could take the risk of obtaining all of the potential additional consents.</p>
<p>Property Matters</p>	<p>Property matters would not be a significant consideration if the scope of the WSA was limited to a waste collection service. However, if the Waste Company was also required to take control of existing Authority sites (such as the landfill sites) and/or new Authority sites (if any new construction was anticipated) then the Authority would need to ensure that the Waste Company had the appropriate property rights. Unless the Authority provided a warranty that there were no property matters that could impact on the Waste Company and its performance under the WSA, it may be necessary to carry out due diligence on the relevant properties to ensure there are no such restrictions.</p>	<p>Local legal advice would be required in this area as it will require knowledge of Nigerian property law.</p>

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Ground Condition, Contamination and Environmental Matters	<p>The Waste Company should be responsible for any contamination or other environmental liabilities that it causes.</p> <p>Where existing landfill sites and/or new facilities are to be included within the scope of the WSA it will be necessary to allocate responsibilities in relation to the condition of the ground and any existing contamination at the relevant site.</p>	
Maintenance and Replacement Obligations	<p>The Waste Company will be required to be responsible for all maintenance and replacement of its own equipment needed to provide the services (for instance the waste carrying vehicles). The Authority may want to specify the level of replacement/maintenance that it expects (for instance that the waste carrying vehicles must be of a certain type and/or must always comply with applicable legislation).</p> <p>The WSA could also pass other maintenance and replacement obligations onto the Waste Company, for instance any waste receptacles used by low income households as primary waste delivery points (as an increased number of receptacles is likely to increase waste management within poorer areas and provides a partial solution until the road network is sufficient in all areas to allow door to door collection). However, it would be important to understand how the Waste Company would be paid in respect of such additional maintenance or replacement obligations.</p> <p>The Authority may want the right to undertake surveys of any equipment or facilities to ensure that the Waste Company is complying with its obligations</p>	<p>The Operation Permit specifies which vehicles can be used and also specifies the standard of equipment required (albeit in very general terms). If required, these provisions can be included in the WSA along with the penalties contained in the Operation Permit for any infringement.</p>
Payment	<p>This is a key area. The Waste Company will have difficulty being able to offer an increased service level above the level that is currently being experienced if it is expected to take the risk of recovery of any monies from third party users. The ideal and recommended position for the Waste Company is that all payments are made directly by the Authority to the Waste Company and that the Authority then puts in place mechanisms to recover relevant amounts from end users (whether through direct taxation, linking payment to utility bills or another method). Non-voluntary payments are likely to require Government assistance in relation to the poorer households as they may be unable to pay for such services. In order to limit this risk it would be possible to have a non-voluntary basic service level, with a voluntary enhanced service level that more affluent households can pay for themselves if they require.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
	<p>If the Authority is unwilling or unable to guarantee payments to the Waste Company in respect of the waste collection service then the WSA can specify that recovery risk remains with the Waste Company. However, as noted above, this reflects the current system and is therefore unlikely to allow for a significantly increased service delivery as non-recovery by current waste companies remains high. It is also likely to be a barrier to larger waste companies bidding to enter into the WSA and to obtaining external funding. For these reasons, this approach is not recommended.</p> <p>Where any capital payments would be required to be made, the Authority would need to consider whether these will be expected to be funded by the Waste Company and then recovered by the Authority (over the term of the WSA or over some other shorter period) or whether the Authority will fund such capital payments. In either case, ideally the Waste Company should be required to carry out the works and then recover the payments but if they do not have sufficient funds or availability of debt then this may not be possible. In this case the Authority would take the risk of the money not being properly allocated and having to seek recovery against the Waste Company.</p>	
Performance Monitoring and Key Performance Indicators	<p>An important element of a WSA should be that payment is performance based. The WSA should set out any key performance indicators in respect of the Services. These key performance indicators are the service standards that the Waste Company is expected to meet.</p> <p>In order to measure performance, the Waste Company should be expected to provide all necessary records to the Authority and to provide summary reports on their performance at regular intervals (monthly, for instance). The Authority should also have the right to undertake its own performance monitoring of the Waste Company to ensure the Waste Company is complying with its obligations (including its reporting obligations)</p>	The Operation Permit requires records to be submitted monthly by the Waste Company and for audited records to be provided to the Authority for review.
Penalties for non-performance	Failure to meet any of the key performance indicators referred to above would ordinarily result in a financial penalty on the Waste Company. This penalty would be made by reducing any amounts payable by the Authority or by seeking recovery against the Waste Company. The exact process for the application of penalties is dependent on how the payment mechanics are expected to work. It may be that non-collection simply equates to non-recovery of the amount otherwise payable in respect of the collection but if the service is to be enhanced such that additional key performance indicators are to be imposed on the Waste Company then a more detailed penalty regime is likely to be more appropriate.	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Incentive Payments	<p>Where the Waste Company performs above anticipated levels it may be appropriate to include bonus payments in order to incentivise such increased performance. This approach would also recognise the potential additional risk accepted by the Waste Company where key performance indicators are included in addition to a simple mechanic whereby non-delivery equals non-payment.</p> <p>It is important that the incentive payments are not simply based on increased collection that is then passed onto end users as there is a point at which the end users would not benefit from such increased collections and may not be able to meet any increased payments.</p>	
Financial Security	<p>Depending on the Waste Company and the potential for any security to be provided, the Authority may want to consider whether it would require any bonds or guarantees covering the obligations of the Waste Company.</p>	
Relief from Obligations	<p>The WSA should contain any agreed relief from obligations required by the Waste Company so as to avoid either a penalty for non-performance or a termination for Waste Company default. The exact list of relief will need to be agreed but is likely to include elements such as:</p> <ul style="list-style-type: none"> <li>(i) a breach by the Authority of its obligations under the WSA,</li> <li>(ii) war, terrorism or armed conflict,</li> <li>(iii) fire, flood or other natural disaster,</li> <li>(iv) general strikes or fuel shortages, or</li> <li>(v) closure of an Authority controlled site (where responsibility is not passed across to the Waste Company).</li> </ul> <p>Further types of relief may be required in circumstances where the WSA would include the operation of the existing landfill sites and/or the construction of new facilities.</p> <p>Where certain matters beyond a Party's control (such as war or natural disaster) continue for an extended period of time and the Parties have been unable to agree how to deal with such matters, either Party should have the right to terminate the WSA on a no fault basis. This would mean that no compensation would be payable by either party (unless the Authority would be unjustly enriched by the Waste Company returning equipment or new or enhanced facilities to the Authority that it had not paid for (or not fully paid for), in which case the Authority would be required to make an appropriate payment to the Waste Company in respect of such equipment or facilities.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Authority Obligations	<p>The Authority should accept very few obligations under the Waste Services Agreement. Such obligations will include:</p> <ul style="list-style-type: none"> <li>( i ) meeting any payment obligations that it has agreed to pursuant to the WSA;</li> <li>( ii ) obtaining any specific consents that the Waste Company cannot obtain and which are in the control of the Authority to obtain;</li> <li>( iii ) where the Authority retains the control of the landfill sites or other relevant sites, allowing access to these sites for the Waste Company;</li> <li>( iv ) ensuring that the Waste Company's right to exclusivity over the specified area is retained.</li> </ul>	
Ownership of Waste	<p>If the services are limited to waste collection it is therefore envisaged that the ownership of waste would not transfer (albeit the risk of managing the waste would rest with the Waste Company during collection and transport). If the services include the control of the landfill sites then it may be more appropriate that the ownership of waste transfers to the Waste Company.</p> <p>Where the Waste Company owns the waste it may be possible to consider the extent to which income can be received through enhanced recycling and whether such income could be used to enhance the economics of the WSA (i.e. can recycling income be used to help reduce the levels of payment expected from the Authority).</p>	Local legal advice to confirm if there is a specific requirement under Nigerian law in relation to ownership of waste.
Termination for Supplier Default	<p>The ultimate sanction for a failure by the Supplier to perform would be a right for the Authority to terminate the WSA. The exact list of defaults would need to be agreed but would be likely to include:</p> <ul style="list-style-type: none"> <li>( i ) material or persistent breach or abandonment;</li> <li>( ii ) reaching certain non-performance thresholds, by reference to the key performance indicators or the level of financial penalties made against the Waste Company;</li> <li>( iii ) transferring the WSA to another party without consent;</li> <li>( iv ) failure to take out the necessary insurances;</li> <li>( v ) insolvency of the Waste Company;</li> <li>( vi ) failure of the Waste Company to pay amounts (over a certain threshold) due to the Authority;</li> <li>( vii ) bribery of the Authority;</li> </ul>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
	<ul style="list-style-type: none"> <li>( i ) reaching the annual liability cap (if applicable – see below for further detail);</li> <li>( ii ) ineffectiveness of any financial security unless replaced (if applicable).</li> </ul> <p>Any defaults which are rectifiable would be subject to a certain rectification period before the right to terminate took effect.</p>	
Termination for Authority Default	<p>The right for the Waste Company to terminate the WSA for Authority Default should be very limited. It would include:</p> <ul style="list-style-type: none"> <li>( i ) failure of the Authority to pay amounts (over a certain threshold) due to the Waste Company;</li> <li>( ii ) expropriation or requisition of the Waste Company's assets without due cause;</li> <li>( iii ) breach by the Authority of its obligations under the WSA which frustrates the Waste Company from performing the Services for an extended period of time;</li> <li>( iv ) transferring the WSA to another party that does not have the capability of performing the Authority's obligations under the WSA.</li> </ul> <p>Any defaults which are rectifiable would be subject to a certain rectification period before the right to terminate took effect.</p>	
Compensation on Termination	<p>On a Waste Company default, the Waste Company will be liable for all losses incurred by the Authority as a result of such default (including any increased costs of performing the Services, any re-tendering costs, any temporary measures required prior to any re-tender, any relevant break costs and any necessary rectification costs). As mentioned in more detail below, this may be subject to a cap on liability.</p> <p>On an Authority default, the Authority will be liable for all breakage costs properly incurred (including any redundancy costs caused by no longer needing any relevant employees and not being able to re-locate them to other contracts or services), plus a certain amount of the Waste Company's expected profit (usually between 6 months and 2 years) to reflect the fact that the Authority has defaulted on a long term contract.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
	<p>Where the scope of the WSA includes capital expenditure being incurred by the Waste Company that is anticipated to be repaid by the Authority but hasn't been (or hasn't fully been) repaid at the point of termination (for instance in relation to the purchase of equipment that is to revert to the Authority or any maintenance of construction of relevant facilities), the Authority will still be responsible for making such payments (even following a Waste Company default), subject to any adjustments needed to reflect the fact that the equipment or facilities may not be in the condition expected under the WSA as a result of the Waste Company not complying with the terms of the WSA.</p>	
Insurance	<p>The Waste Company should take out all insurances as required by law. The Authority may want to specify certain insurances and/or insurance provisions that the Waste Company should obtain.</p> <p>The insurance package will depend on whether the Waste Services Agreement includes responsibility for existing landfill sites and/or construction of new facilities. Additional insurances are likely to be required in these circumstances.</p>	Specialist insurance advice would usually be obtained in relation to this area.
Changes in Law	<p>The Waste Company would be expected to take the risk of general changes in law affecting the services unless the relevant authority brought in a law specifically to discriminate against the Waste Company or the obligations under the WSA.</p> <p>Where the Waste Company takes responsibility for the landfill sites or for any new facilities, the Waste Company is unlikely to be able to take responsibility for all changes in law which result in material additional capital expenditure being incurred (albeit larger waste companies may be able to take some risk here, on an agreed cost sharing basis with the Authority). Subject to any cost sharing agreement, this exposure would be something that the Waste Company would expect the Authority to cover. In reality the exposure for the Authority here is no different than if it had retained control of the facilities as it would still need to comply with all applicable laws.</p>	
Indemnities	<p>The Waste Company should compensate the Authority for any losses caused to the Authority as a result of death or injury to any person, loss or damage to any property, or third party claims being made against the Authority, in each case where these losses were caused by the Waste Company.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Limits on Liability and Exclusions	<p>The Waste Company may want to include a cap on liability under the WSA in order to limit its exposure. This limit would usually be a certain agreed amount over each year of the WSA and a separate agreed amount following termination for Waste Company default. Where the WSA is purely service based it would be common for the annual cap to be 100% of the income receivable in the year in question and for the termination cap to be 200% of such income. However, in circumstances where construction was included within the scope of the WSA an additional cap would need to be included covering an agreed percentage of the construction costs.</p> <p>Where caps on liability are included there would nevertheless be a number of exclusions from such cap. The exclusions would need to be agreed but would be likely to include:</p> <ul style="list-style-type: none"> <li>( i ) liability under the indemnity for death, injury, damage or third party claims;</li> <li>( ii ) amounts recovered under insurances;</li> <li>( iii ) willful default, fraud or criminal conduct;</li> <li>( iv ) enforcement costs;</li> <li>( v ) default interest following late payment;</li> <li>( vi ) liability under employment law and/or intellectual property law; and</li> <li>( vii ) breaches of confidentiality.</li> </ul>	<p>If the Waste Company was an externally financed special purpose vehicle then the inclusion of overall caps on liability would not be appropriate as the fact that the special purpose vehicle is separate to its investors already provides protection in this respect. This is known as limited recourse financing.</p>
Contractual Variations	<p>Contractual variations need to be in writing signed by both the Authority and the Waste Company.</p>	
Step-in and Suspension	<p>Where the Waste Company is in default, the Authority may want the right to be able to step into the provision of the services (or procure that another party does) to the exclusion of the Waste Company in order to rectify any default. In these circumstances, the Waste Company should cover all costs and losses of the Authority incurred as a result of such step-in.</p> <p>Where the Waste Company employs sub-contractors, the Authority may also want a direct contractual relationship with such sub-contractors which would be triggered in the event that the Waste Company was in default of the WSA, so the Authority could step in and instruct the sub-contractors directly.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Employment Matters	<p>The WSA should contain various obligations on the Waste Company in relation to its employees, including ensuring that the Waste Company complies with all applicable employment related laws as well as any employment welfare matters and obligations in relation to training and general education of employees and the public on the importance of waste management.</p> <p>In the event that the public sector waste collection service is taken over by the Waste Company, provisions will need to be included to deal with the proper transfer of public sector employees to the Waste Company (and potentially the subsequent transfer of employees to the Authority or to another incoming waste company following termination or expiry of the WSA). It may also be necessary to include provisions relating to equal pay/benefits, to avoid a mismatch between private sector workers and workers transferring from the public sector.</p>	Local legal advice will need to input on this area as it will involve knowledge of Nigerian employment law.
Dispute Resolution	Specific dispute resolution provisions will be included to ensure there is a specifically defined process for the resolution of any disputes between the Authority and the Waste Company.	Local legal advice will need to input on this area as it will involve knowledge of the Nigerian disputes system.
Intellectual Property	Provisions will be included relating to the use by one Party of the other Party's intellectual property in relation to the carrying out of the obligations under the WSA or following termination/expiry.	Local legal advice will need to input on this area as it will involve knowledge of Nigerian IP laws.
Handover on Termination or Expiry	<p>Any facilities or items of equipment that have been paid for (or are intended to be paid for but haven't been due to an early termination) by the Authority under the WSA should revert to the Authority on termination or expiry. The Waste Company should be entitled to keep any of its own equipment that the Authority is not expected to pay for.</p> <p>The Waste Company will be required to pass to the Authority all documentation, records and other information as is required to enable the Authority or a successor waste company to perform the Services. All relevant consents should also be surrendered or transferred (as the Authority requires).</p> <p>Where material maintenance or construction is included within the WSA the Waste Company should also pass on any guarantees, bonds, warranties that relate to such maintenance or construction.</p> <p>The Waste Company should also do all things reasonable in order to assist with any transfer of the Services.</p>	

CONTRACTUAL PROVISION	DETAIL OF CONTRACTUAL PROVISION	FURTHER CONSIDERATIONS
Boiler Plate Clauses	<p>There will be a number of other standard contractual clauses, including:</p> <ul style="list-style-type: none"> <li>( i ) governing law and jurisdiction (i.e. Nigerian Law);</li> <li>( ii ) restrictions on assignment and sub-contracting (ensuring that the Waste Company doesn't transfer or sub-contract the WSA without the Authority's consent);</li> <li>( iii ) entire agreement (confirming that all other prior agreements between the Parties are superseded by the WSA);</li> <li>( iv ) severability (confirming that if one element of the WSA is determined to be invalid or unenforceable that this doesn't affect the remainder of the WSA);</li> <li>( v ) sole remedy (specifying that the only rights of the Waste Company against the Authority are those which are explicitly provided for within the WSA);</li> <li>( vi ) confidentiality (ensuring that the Parties do not disclose each other's confidential information).</li> </ul>	Local legal advice will need to input on this area as it will involve knowledge of the Nigerian legal system.



## ANNEX 3

# STAKEHOLDER INTERVIEWS

### INTRODUCTION

EY conducted interviews with stakeholders with the context below:

- Engage key stakeholders in the discussion on current challenges in SWM activities in Ibadan
- Assess the current attractiveness of the sector to PSP in Ibadan
- Increase awareness and appreciation for the potential for PSP in SWM in Ibadan
- Identify challenges and gaps in terms of institutions and finance
- Design an action plan coupled with capacity building assistance for OYOWMA and the private waste collectors

The aim of the interviews was to:

- Understand the willingness and ability of the private investors and commercial banks to invest within the solid waste sector, and the conditions for investment.
- Learn from experiences and best practices of implementing PSP challenges in SWM activities

### QUESTIONS

1. How would you describe your relationship with the local authorities in charge of the solid waste management in Nigeria / Oyo

State / Ibadan? Have you ever work with them? In which context? etc.

2. What is your experience in solid waste management activities in Africa / Nigeria / Oyo State / Ibadan? Please describe it. If yes, did this include PSP?
3. From your experience, what are the key challenges to overcome for a successful PSP in waste management in Nigeria / Oyo State / Ibadan? (*Financial challenges*)
4. From your experience, what are the key challenges to overcome for a successful PSP in waste management in Nigeria / Oyo State / Ibadan? (*Operational challenges*)
5. From your experience, what are the key challenges to overcome for a successful PSP in waste management in Nigeria / Oyo State / Ibadan? (*Legal challenges*)
6. Why you are not currently involved or interested in solid waste management in Ibadan? What would make you interested investing or participating in PSP of solid waste management in Ibadan?  
  
What sources of financial support or investment capital could be made available to the waste management private sector in Nigeria / Oyo State / Ibadan?
7. Have you identified good practices (operational such as collection, maintenance, equipment, training, staff and financial such as fees collection, financial support, etc.) that could be applicable to PSP in solid waste management activities in Ibadan?

## LIST OF STAKEHOLDERS INTERVIEWED

PRIVATE SECTOR PARTNER	SERVICE OFFERINGS	CURRENT/PAST AREAS OF OPERATION IN NIGERIA	NUMBER OF YEARS OF OPERATION IN NIGERIA	NAME AND POSITION OF PERSON INTERVIEWED	EXPRESSED OUTRIGHT INTEREST IN OPERATING IN IBADAN?
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>Waste collection</li> <li>Consultancy</li> <li>Cost recovery &amp; training</li> <li>Landfill management</li> </ul>	<ul style="list-style-type: none"> <li>Lagos State</li> <li>Ogun State</li> <li>Delta State</li> </ul>	<ul style="list-style-type: none"> <li>Over 18 years</li> </ul>	<ul style="list-style-type: none"> <li>Olugbenga Adebola</li> <li>Chief Executive Officer</li> </ul>	<ul style="list-style-type: none"> <li>No, except with a guarantee of cost recovery system.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>Waste to energy conversion</li> </ul>	<ul style="list-style-type: none"> <li>None yet</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>Abubakar Sadiq</li> <li>Project Coordinator</li> </ul>	<ul style="list-style-type: none"> <li>Yes. They have already begun the application process for participation.</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>Waste collection</li> <li>Cost recovery</li> </ul>	<ul style="list-style-type: none"> <li>Lagos State</li> <li>Federal Capital Territory</li> <li>Ekiti State</li> <li>Edo state</li> </ul>	<ul style="list-style-type: none"> <li>Eight years</li> </ul>	<ul style="list-style-type: none"> <li>Muyiwa Adeniyi</li> <li>Managing Director</li> </ul>	<ul style="list-style-type: none"> <li>No. except with a guarantee of cost recovery;</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>Collection of recyclable waste only</li> <li>Processing of recyclable waste</li> </ul>	<ul style="list-style-type: none"> <li>Lagos State</li> </ul>	<ul style="list-style-type: none"> <li>Three years</li> </ul>	<ul style="list-style-type: none"> <li>Boluwaji Oyewumi</li> <li>Business Development Manager</li> </ul>	<ul style="list-style-type: none"> <li>Yes, they expressed strong interest especially in Sasa area.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>Consultancy services on the end-to-end activities in waste management</li> <li>Training</li> </ul>	<ul style="list-style-type: none"> <li>Kaduna State</li> <li>Kano state</li> <li>FCT</li> </ul>	<ul style="list-style-type: none"> <li>Over four years</li> </ul>	<ul style="list-style-type: none"> <li>Kirsten Jack</li> <li>Senior Manager</li> </ul>	<ul style="list-style-type: none"> <li>Yes. However, their current mandated area of operation is northern Nigeria. This will be reviewed in six months and is likely to change.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>Waste to energy generation</li> </ul>	<ul style="list-style-type: none"> <li>Lagos</li> <li>Ibadan</li> </ul>	<ul style="list-style-type: none"> <li>Over eight years</li> </ul>	<ul style="list-style-type: none"> <li>Dr. Cornelius Shogunle</li> <li>Chief Executive Officer</li> </ul>	<ul style="list-style-type: none"> <li>Yes. Currently a PSP in Ibadan.</li> </ul>

## INTERVIEW QUESTIONS AND ANSWERS

### RELATIONSHIP WITH PUBLIC SECTOR REGARDING SOLID WASTE MANAGEMENT IN NIGERIA

1. How would you describe your relationship with the local authorities in charge of the solid waste management in Nigeria / Oyo State / Ibadan?	
Have you ever work with them? In which context? etc.	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>We have vast experience working with LAWMA and also have a long standing relationship with Oyo State Ministry of Environment. However, we are not currently partnering with OYOWMA in waste management activities. We had a proposal for an Integrated Waste management facility funded by us with guarantee purchase of the end product (fertilizer) by the government. But the business proposition was not accepted.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>We have a good relationship and have been in communication with OYOWMA for about three years. We have a pending approval and appropriate documentation for our proposed waste to energy facility in Ibadan. Although the relationship is cordial, there is a lot of bureaucracy in the system preventing us from getting our approvals.</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>We have a very cordial relationship with OYOWMA. We have been invited in the past by OYOWMA for participation. However we declined because of a lack of enabling environment and strategy tailored to the geographical and socio-economic environment of Ibadan</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>We have been in a relationship with LAWMA as PSPs for three years. It has been a very good relationship and they have made available locations for us to store our recyclables and other field operations.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>We currently have a relationship with Kaduna, Kano and FCT. We work with them as consultants throughout the value chain of waste management; cost recovery, operating a viable PSP model, procurement of equipment, benchmarking and best practices, training on operational issues and proper operation and maintenance of equipment etc.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>We currently have a cordial relationship with OYOWMA although it is not an enabling environment. The authorities have on several occasions tried to frustrate the efforts of the firm however having a direct line of communication with the state governor has reduced the challenges</li> </ul>

### EXPERIENCE WITH SOLID WASTE MANAGEMENT IN NIGERIA

2. What is your experience in solid waste management activities in Africa / Nigeria / Oyo State / Ibadan? Please describe it. If yes, did this include private sector participation (PSP)?	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>We have worked as private sector partners in Waste Management for many years and some of our previous jobs with local authorities include: <ul style="list-style-type: none"> <li>Lagos State Government: Refuse collection, transportation, disposal and landfill site management and consultancy;</li> <li>Delta State: Waste collection and disposal.</li> </ul> </li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>We have worked as private sector partners in the capacity below: <ul style="list-style-type: none"> <li>Lagos: Waste collection and disposal (operation of materials recovery facilities to begin October 2015);</li> <li>FCT: Waste collection and disposal, street sweeping and landscape gardening;</li> <li>Ekiti: Waste collection and disposal.</li> </ul> </li> </ul>

<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>▪ We are PSPs who operate a social entrepreneurship model. We collect recyclable waste with a focus on low income communities and reward them with redeemable points (points are traded in for household items such as TVs, sewing machines etc. when they accumulate.</li> <li>▪ We are expanding our operations to Osun and Ogun States before December 2015.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>▪ We operate in waste management in an advisory and consultancy capacity to state governments in Northern Nigeria.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>▪ We have had previous experience working with Oyo state government but we had to pull out from the engagement because the proposed plan was not feasible or sustainable.</li> <li>▪ We are also working on generating 2MW renewable source of energy for Tafawa Balewa Square, Onikan, Lagos.</li> </ul>

## FINANCIAL CHALLENGES RELATED TO PSP IN WASTE MANAGEMENT

<b>3. From your experience, what are the key challenges to overcome for a successful PSP in waste management in Nigeria / Oyo State / Ibadan? (Financial challenges)</b>	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>▪ The key financial challenge that PSPs have is in the area of financing and cost recovery.</li> <li>▪ Access to funding is a major issue as trucks and other required facilities are expensive to purchase.</li> <li>▪ Also, interest rates for borrowing from banks are very high and most PSP can't afford it. Also banks do not give long term loans. Only short term loans (which are not adequate in this sector, since cost recovery in itself is an issue in the beginning stages) are available to PSP from banks.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>▪ Financing is a big problem for PSPs. The sector is capital intensive and gives return on a longer term than most other sectors. Equipment are expensive to purchase, a brand new truck is about EUR 70,000.</li> <li>▪ PSPs need long term facility to stay afloat. For instance, my businesses almost collapsed at a point but for the bail-out fund provided by Lagos State Government which I have now fully repaid. At that time, no bank was willing to give me money except for the then Oceanic Bank who gave me some financial assistance which was still not enough.</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>▪ We have not really had any financial challenges, neither have we had any cause to apply for loans from banks. We have received a lot of donations from local and international bodies like MIT and Coca Cola international.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>▪ A big issue we have noticed is in the area of financing their business for purchase of equipment and training. A lot of finance is required as these machines such as trucks are expensive. This is particularly important because cost recovery is also an issue. The ability of PSPs to recover their cost is usually limited and so finances are usually limited.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>▪ We have not had financial challenges because the project is currently funded by the company and we have received guarantee from the government that they intend to buy the energy generated.</li> </ul>

## OPERATIONAL CHALLENGES RELATED TO PSP IN WASTE MANAGEMENT

4. From your experience, what are the key challenges to overcome for a successful PSP in waste management in Nigeria / Oyo State / Ibadan? (Operational challenges)	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>▪ The tenement structure of some parts of Ibadan (lack of proper definition of streets), will make it difficult to operate a door-to-door structure and as such a communal waste collection strategy will work better.</li> <li>▪ The private collection companies are too small in capacity and lack the wherewithal in terms of financial and technical capability. Also, the areas allocated to private collecting companies are too small. This places the capability of the overall sector on a micro level.</li> <li>▪ There is a lack of equipment on the part of the collectors. Trucks and other equipment are expensive and facilities are not readily available from financial institutions.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>▪ The key issue we have identified is bureaucracy. There are a lot of bottle necks in the system that makes obtaining approvals and decisions difficult. For instance, we have been trying to get approval for waste to energy operations for about three years now even though we have all the requirements.</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>▪ There is no adequate infrastructure on the part of government. For instance, there are no adequate landfills and the dumpsites being used in their place are in such bad condition that they cause trucks to breakdown</li> <li>▪ Also, there needs to be strong will on the part of government that will translate into creating enabling environment, capital investments and infrastructure and ensuring only qualified officials and PSP are engaged by the government</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>▪ The only issue we have noticed is the attitude towards waste management. For instance some of our collectors, even though they are nicely dressed and operate with tricycles, still do not want to go to neighbourhoods where they know people. They do not want to be associated with “dirt”. Nevertheless, we get cooperation from the public because their participation is incentivised by the redeemable points</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>▪ Some waste management government agencies try to plunge into more advanced back-end process like waste to energy, integrated waste management facilities and world standard landfills too early. It is a complicated process that can quickly become a burden if not managed properly. In the beginning stages, more emphasis should be placed on getting the collection, disposal and general recycling right. Waste to energy can be done in smaller scales e.g. having specialized arrangement with large companies who require the energy or recycled products for their operations. When the whole waste management process has matured, then full-scale waste to energy can be done.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>▪ A major challenge for waste management in Ibadan is that the topology of the state is hilly and not flat like Lagos hence it is difficult for PSP to collect waste and take it to the dumpsites. Most of the waste disposal trucks struggle to climb the hill to where the dumpsites are.</li> <li>▪ Another operational challenge is that there are no adequate and appropriate tools in place for an efficient and effective system of managing waste.</li> </ul>

## LEGAL CHALLENGES RELATED TO PSP IN WASTE MANAGEMENT

5. From your experience, what are the key challenges to overcome for a successful PSP in waste management in Nigeria / Oyo State / Ibadan? (Legal challenges)	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>▪ A big issue in this area is cost recovery and the ability to enforce. Most PSPs are unable to recover their cost from the public due to non-compliance. This could be particularly difficult if there is no power on the side of the PSP to enforce.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>▪ The key issue here is on the part of cost recovery and enforcement. In the case of my business, we have been able to manage because we did a thorough enumeration of the area. Also, the cost for commercial residents is recovered by LAWMA. However, if not properly managed by enforcement it could be a big problem. However, we have noticed that the public is willing to pay when services are prompt and efficient.</li> <li>▪ Another legal issue is on sorting of waste by the public. However, Nigeria is not mature enough for that yet but it is also something that can be achieved with proper legal framework and enforcement</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>▪ A key issue that can be resolved with legal backing and enforcement is proper sorting of waste at the point of generation in households. However, we think Nigeria is not that mature and might not get full public support. The first stage will be to ensure the public dispose of general waste properly and pay for such services.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>▪ A legal challenge we have noticed is cost recovery and enforcement. The PSPs do not have the power to enforce payments. From our experience, what works best is either integrating fees into other local taxes in areas where their compliance in local tax payment or direct recovery through an agency which is given the right to enforce.</li> <li>▪ From our experience another issue is enforcement on the part of the waste management boards. They also sometimes cannot enforce PSPs to demand prompt and quality service delivery because some companies are owned by government officials.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>

## REASONS FOR NOT BEING INVOLVED IN SOLID WASTE MANAGEMENT IN IBADAN

6. Why you are not currently involved or interested in solid waste management in Ibadan? What would make you interested investing or participating in PSP of solid waste management in Ibadan?	
What sources of financial support or investment capital could be made available to the waste management private sector in Nigeria / Oyo State / Ibadan?	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>▪ If a system that gives an assurance for cost recovery is made available, we will be willing to participate in Ibadan. Some suggestions are; Indirect recovery by including it in local taxes and tenement rates, communal waste collection and cost recovery, specialised government cost recovery agency and subsidising the levies of low income communities with the high income communities or government</li> <li>▪ Also, an intervention fund by the government or World Bank for about 7-10 years will act as a guarantee for PSPs.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>

<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>▪ Firstly there needs to be cooperation on the part of government and government officials. There needs to be a strong political will to sustain the sector and government officials should be well trained and should be transparent and willing to cooperate with PSPs</li> <li>▪ Proper funding. If the government can provide long term funding and training for PSPs it will be an encouragement for participation.</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>▪ We are interested and hope to expand our operation to Oyo State by next year.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>▪ The mandate of our operations is Northern Nigeria. However, this will be reviewed in six months and when that time comes, we will be willing to participate if we receive a formal invitation.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>▪ A key issue that could be resolved by legal backing is to ensure that citizens dispose their waste at appropriate waste disposal locations and this could be achieved by proper sensitization and training of the citizens.</li> </ul>

## GOOD PRACTICES APPLICABLE TO PSP IN SOLID WASTE MANAGEMENT IN IBADAN

<b>7. Have you identified good practices (operational such as collection, maintenance, equipment, training, staff and financial such as fees collection, financial support, etc.) that could be applicable to PSP in solid waste management activities in Ibadan?</b>	
<b>Richbol Environmental Services Ltd.</b>	<ul style="list-style-type: none"> <li>▪ Refuse disposed by the public by the median of the roads in Ibadan are collected promptly. However the ideal for a private sector company is that waste should be collected from door to door so as to enable payment for services.</li> </ul>
<b>Karkara Rapid Development Limited</b>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
<b>Waste-Point Limited</b>	<ul style="list-style-type: none"> <li>▪ LAWMA has done well in organising the private sector and enforcing service providers. They have a grip on PSPs, the selection process is tough and they do not tolerate inefficiencies.</li> </ul>
<b>Wecyclers</b>	<ul style="list-style-type: none"> <li>▪ We believe LAWMA is a good example and has done a lot in waste management. They are very helpful providing PSPs with resources. For instance they gave us our current operating locations.</li> </ul>
<b>Nigeria Infrastructure Advisory Facility (NIAF)</b>	<ul style="list-style-type: none"> <li>▪ Waste management agencies have been able to make do with the facilities they have like dump sites</li> <li>▪ Governments are doing a lot in creating awareness to the public in the place of their responsibility in waste management and have increased focus in the sector.</li> <li>▪ Also, governments have been able to retain informal labour such as scavengers into a more standard operational model by having them retain their jobs (with proper organisation, training and safety gears) and regulating the operations of PSPs in this area of operation.</li> </ul>
<b>Highland Energy Solutions</b>	<ul style="list-style-type: none"> <li>▪ The company is currently in Ibadan trying to generate 5MW of energy from solid municipal waste and this process is going to take about 14months before project objectives are achieved.</li> </ul>

## KEY TOPICS AND RECOMMENDATIONS FROM INTERVIEWS

ASSESSMENT	KEY TOPIC	OBSERVATION	RECOMMENDATION
	<b>Cost recovery</b>	<ul style="list-style-type: none"> <li>It was noted that the issue of recovering cost was a top concern for all the stakeholders interviewed</li> </ul>	<ul style="list-style-type: none"> <li>Indirect recovery; through local taxes</li> <li>Direct recovery; through an agency with the legal ground to enforce</li> <li>Direct recovery; by the PSP. However, this is the least preferred choice</li> </ul>
	<b>Financing; Procurement of equipment</b>	<ul style="list-style-type: none"> <li>From the interviews it appears that there are very limited sources of fund for PSPs.</li> </ul>	<ul style="list-style-type: none"> <li>Financial support/intervention fund from government, banks (at a low interest rate) or other investors</li> </ul>
	<b>Political will</b>	<ul style="list-style-type: none"> <li>It was noted that PSPs generally have the belief that governments do not see waste management as a priority issue and that they also do not realise the commercial potential of the sector</li> </ul>	<ul style="list-style-type: none"> <li>Sustained political will in improving waste management activities. The government needs to show a sustained effort and will in the direction of solid waste management activities</li> </ul>
	<b>Cooperation of government officials</b>	<ul style="list-style-type: none"> <li>PSPs were concerned that government officials are sometimes not well trained in topical issues and trends in waste management. They also expressed concern that there was a lack of cooperation in the attitudes of some officials</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of relationship and cooperation between PSPs and government officials</li> </ul>
	<b>Government infrastructure</b>	<ul style="list-style-type: none"> <li>There were general concerns about the lack of a proper landfill site for waste.</li> </ul>	<ul style="list-style-type: none"> <li>Standardisation of current dumpsites or building of adequate landfill sites</li> </ul>
	<b>Public cooperation</b>	<ul style="list-style-type: none"> <li>From the interviews it was noted that the cooperation of the public can be easily garnered through effective and efficient services and building of trust and relationship over time</li> </ul>	<ul style="list-style-type: none"> <li>There should be sustained effort in building a relationship of trust and cooperation with the public by PSPs and government and high fees among low income earners is not encouraged</li> </ul>
	<b>Unemployment from standardization of processes</b>	<ul style="list-style-type: none"> <li>From interviews conducted during the study period, it was noted that all informal and unorganised labour in the sector such as scavengers are not endangered by a standardisation of the sector</li> </ul>	<ul style="list-style-type: none"> <li>All informal and unorganised labour in the value chain be re-organised, trained and incorporated into the standardisation process to avoid massive loss of jobs</li> </ul>

### Legend

	<b>Strong negative opinion</b>
	<b>Moderate negative opinion</b>
	<b>Positive opinion</b>

x

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