# Project: Urban Water Sector Reform and Port Harcourt Water and Sanitation Project

## Country: Nigeria

### Environmental and Social Impact Assessment & Resettlement Action Plan Summary

**Date:** 01 July 2013

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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)
SUMMARY

Project Name: Urban Water Sector Reform and Port Harcourt Water & Sanitation Project
Country: Nigeria
Project Number: P-NG-E00-007

1. Introduction

The Rivers State Government is implementing a Water Supply and Sanitation Project with support from the African Development Bank and the World Bank. The project aims to provide water and sanitation services for the population of Port Harcourt and Obio/Akpor Local Government Areas (LGAs), and is part of a sector wide institutional reform embarked on by the Rivers State Government. The estimated population in the targeted project area is 1.3 million, and is expected to reach 4 million by 2040. The project will support the ongoing nation-wide Urban Water Reform Programme managed by the Federal Ministry of Water Resources (FMWR) and is a pioneering component of the River State Government’s Greater Port Harcourt City Development Plan (GPHCP). It is expected that the construction of new water pipeline networks and other rehabilitation works under the Port Harcourt and Obio/Akpor Water Supply and Sanitation Project will be crucial in the development phases of GPHCP.

For Port Harcourt, the project is structured around three components aimed at providing a holistic and sustainable solution to the Water Supply and Sanitation (WSS) challenges faced by the residents: (i) Establishment of WSS Infrastructure facilities; (ii) Institutional support to Port Harcourt Water Corporation (PHWC) to help the utility manage and expand the facilities put in place in line with best practice, and building capacity of other key stakeholders to ensure they fully play their respective roles in service provision; (iii) Institutional support on Hygiene Sanitation and Environment to ensure the full water and sanitation chain is strengthened to maximise the benefits of the new WSS services, and development of a sanitation master plan for coordinated and gender responsive sanitation management. At Federal Ministry of Water Resources level, the Urban water reform component (iv) will enhance sector planning and coordination in order to strengthen the support and oversight provided to the States to improve service delivery. Component (v) covers Project Management on Rivers State and Federal level.

According to AfDB’s policy & guideline, the project is classified under Category 1, and therefore requires preparation of an ESIA as well as preparation of an ESMP. This ESIA Summary has been prepared in accordance with AfDB’s Environmental and Social Assessment Procedures (ESAP). In addition, over 200 persons will be involuntarily displaced by the project. A full Resettlement Action Plan (RAP) has therefore been prepared and is included as Annex 1.

2. Project Description and Justification

The objectives of the project are to (i) provide access to safe drinking water and sanitation to the residents of Port Harcourt city (Port Harcourt and Obio/Akpor Local Government Areas); (ii) establish institutional and organizational arrangements to ensure sustainability and expansion of services; and (iii) strengthen Federal government’s capacity to facilitate urban water sector reform and performance improvements across the country.
The provision of WSS infrastructure is likely to generate environmental and social impacts especially during the construction phase. Proposed water supply infrastructure include rehabilitation of existing boreholes in Rumuola and Moscow well fields; drilling and installation of additional boreholes for water supply in Rumuola well fields; provision of infrastructure to protect the Rumuola well fields from off-site contamination; rehabilitation of the water treatment facilities; rehabilitation of the distribution network; construction of water kiosks in market centres and connection of households. Sanitation infrastructure includes construction of gender-segregated sanitation facilities in public areas, particularly at selected market locations.

With 58% of citizens having access to safe water, Nigeria is behind schedule in realising its Millennium Development Goals (MDGs), and is below the Sub-Saharan average. None of Nigeria’s more than 30 water utilities are able to provide uninterrupted water services to its citizens, and many are amongst the worst performing on the continent with rapidly decaying infrastructure due to a weak institutional environment and lacking maintenance systems. The situation of Port Harcourt is representative of the country: citizens currently do not benefit from the water utility as infrastructure constructed in the 1950s is run down, with only 10 km of the 190 km pipe network useable. Citizens obtain water from private boreholes, shallow wells and water sachets, with varying quality, costs. For sanitation, most households have on-site septic tanks or pit latrines, while public centres (markets, motor parks) lack adequate facilities. Solid waste is managed by point interventions by various institutions and risks contaminating the water source. Waterborne diseases like typhoid are on the rise.

3. Policy, Legal and Administrative Framework

The main legal instrument that ensures that environmental and social issues are mainstreamed into development projects in Nigeria is the Environmental Impact Assessment (EIA) Act No. 86 of 1992. Two other key legislations are the National Environmental Standards, and Regulations Enforcement Agency Act (NESREA) 2007 and the National Oil Spills Detection and Response Agency Act (NOSDRA) which ensure compliance and enforcement of standards.

With the EIA Act, the Federal Ministry of Environment (FMENV) prohibits public and private sectors from embarking on major projects or activities without due consideration, at early stages, of environmental and social impacts. The Act makes an EIA mandatory for any development project, and prescribes the procedures for conducting and reporting EIA studies. As part of the effective utilization of the EIA tool, the Ministry has produced sectoral guidelines detailing the necessary requirements of the EIA process from each Sector. One of the sectoral guidelines that apply to the proposed project is the guideline on Infrastructure Development.

The institutions responsible for management of the project’s environmental issues include (i) PHWC, the Implementing Agency, whose mandate includes implementation of projects for the provision of water and sewerage services and operation and maintenance of new water and wastewater infrastructure and assets including environmental safeguards; (ii) River State’s Ministry of Water Resources and Rural Development (MWWRD) whose mandate to coordinate the sector and is responsible for the high level monitoring of the project (iii) the Federal Ministry of Water Resources who is the Implementing Agency for the Urban Water Reforms Component (iv) Federal Ministry of Environment who is mandated to approve and issue certificates for the ESIA and RAP Reports (v) Rivers State Ministry of Environment
who review the ESIA and RAP Reports and participate in monitoring and ensuring compliance with the ESMP during project implementation.

4 Description of the Project Environment

The main intervention of the project covers Port Harcourt and Obio/Akpor Local Government Areas (hereinafter referred to as Port Harcourt) in Rivers State, which are the most densely populated areas with high water and sanitation stress. Port Harcourt covers 32,781 Ha, of which the project area covers 13,720 Ha (42%) and will have an expected population of around 1.5 million in 2018, of which 1.3 million (88%) reside in the densely populated project area.

**Physical Environment**

**Climate:** Port Harcourt features a tropical monsoon climate with lengthy and heavy rainy seasons and very short dry seasons. Only the months of December and January truly qualify as dry season months in the city. Port Harcourt's heaviest precipitation occurs during September with an average of 370 mm of rain. December on average is the driest month of the year, with an average rainfall of 20 mm.

**Temperature:** The mean daily temperature range is 25-36°C with the minimum occurring at dawn (0300-0500) and maximum in late afternoon (1400-1500hrs). On the average, the highest temperature values are recorded during the dry season months with a peak in February. 35°C and lower temperatures are recorded in the rainy season months with the lowest values occurring in July to September, 20°C.

**Soils and Geology:** The subsurface geology of the study area falls exclusively within the Benin Formation (Coastal Plain Sands) with sediments belonging to the Pleistocene/Pliocene age. The sediments generally consist of thick sequence sands with occasional clay lenses. The superficial and subsurface soils of the study area have been classified as Reddish brown sandy clay loam soil.

**Hydrogeology:** Available well records and wire-line logs of Port Harcourt and its environs reveal that the area is characterized by shallow unconfined aquifers and a deeper, laterally more extensive regional aquifer. The deeper regional aquifer may contain several clay layers which subdivide it into series of aquifers/sub-aquifers. In areas where the clay units separating these sub-aquifers are localized, there is hydraulic interconnection between the sub-aquifer units but where the clay layers are laterally continuous on a regional scale, the sub-aquifers act essentially as independent units without hydraulic interconnection. The aquifer depths and degree of abstraction are presented in Table 1.

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<tr>
<th>Aquifer Horizon</th>
<th>Depth Range (m)</th>
<th>Degree of Exploitation</th>
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<tr>
<td>1st</td>
<td>0 - 60</td>
<td>All small private boreholes, most extensively exploited causing w/table decline and saltwater intrusion along the coast.</td>
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<tr>
<td>2nd</td>
<td>60 - 130</td>
<td>Medium size boreholes, community/municipal/industrial boreholes. Moderate exploitation &amp; moderate saltwater intrusion.</td>
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<tr>
<td>3rd</td>
<td>130 - 290</td>
<td>Some community/municipal/industrial boreholes. Limited exploitation &amp; very limited cases of saltwater intrusion.</td>
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<tr>
<td>4th</td>
<td>290 - 470</td>
<td>Few large scale deep boreholes for municipal &amp; industrial water schemes, no observed cases of saltwater intrusion.</td>
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<tr>
<td>5th</td>
<td>Over 470</td>
<td>Very few large scale deep boreholes for municipal &amp; industrial water schemes, no saltwater intrusion.</td>
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Groundwater: Currently there are 12 pumping stations in Rivers State, which provide all the water to Port Harcourt. The entire supply of potable water to Port Harcourt is obtained from groundwater. All water storage is in ground reservoirs adjacent to elevated tanks and there is some 10 km of functional network in the system. The probable and major cause of groundwater pollution in PH is seepage from septic tanks and cesspools. Groundwater contamination from the leakage of crude oil and refined petroleum products during the extraction and processing process is a serious environmental problem in PH. This also poses a concern of possible contamination.

Water Quality: The quality of the groundwater is generally good. The occurrence of iron rich water in the Niger Delta is a well-known problem. Although the iron problem is more prevalent in the freshwater and saltwater mangrove swamps it can sometimes constitute a major problem in some isolated localities in the dry deltaic plains. Unfortunately, the major factors controlling the lateral and vertical occurrence and distribution of high iron content groundwater in the Niger Delta have not been confirmed.

Topography and Hydrology: Rivers State occupies a territorial space of 11,077 square kilometres. Its topography is flat plains, with a network of rivers, rivulets and tributaries which naturally divide the State into three plains: (i) The fresh water plains - which extends northwards from the mangrove swamps; (ii) The mangrove swamps of the core riverine communities; and (iii) The coastal sand ridges of the upland communities. The rivers, which affect and have direct impact on the topography of the State include among others, New Calabar, Orashi, Bonny, Sombreiro and Bartholomew.

Socio-Economic Environment

Demographics and Settlements: River State has many ethnic groups including Ikwerre, Igbo, Ijaw, Kalabari, Etche, Ogba, Ogoni and others. The population of the State is 5,198,716; made up of 2,673,026 males and 2,525,690 female. According to the 2006 Nigerian census Port Harcourt has a population of 1,382,592, with 3.4% growth rate.

Port Harcourt has continued to experience an influx of young people in search of economic opportunities in oil-related activities. Several factors have contributed to an accelerated urban growth rate and development in Port Harcourt. These factors include the education, especially in search of tertiary institutions in the city; creation of more Local Government Areas (LGAs); economic development; the neglect of the rural areas.

Population distribution and the pattern of settlement in the state are largely influenced by the availability of dry land. This is particularly true of the mangrove swamp zone. The available islands are not large enough to accommodate the expansion of settlements and therefore land is often reclaimed through sand filling in adjacent swampy areas. The impact of an increasing human population has been associated with poor sanitation and solid waste management.

Health: The Centre for Disease Control and Prevention (CDC) identifies HIV/AIDS as being the major cause of deaths in Nigeria accounting for 16%. Other diseases in the top 10 include; lower respiratory infections (11%), malaria (11%), diarrheal diseases (7%), measles (6%), perinatal conditions (5%), tuberculosis (4%), cerebrovascular disease (4%), ischaemic heart disease (3%) and whooping cough (2%).

Water-borne Diseases: Water-borne diseases are a major concern in the project area as the Centre for Disease Control (CDC) indicated. Diarrhoea is the fourth cause of death in Nigeria. Information from the Ministry of Health indicates that in 2012, for 47 health centres the number of water-borne related cases were 48 for cholera, 115,561 cases of dysentery, and 530 for typhoid in Port Harcourt and Obio/akpor. These statistics cover only government health
centres and do not account for those that prefer to visit the private health centres or those who self-medicate when they get the symptoms of the diseases.

**Gender Relations:** Access to water and sanitation in the project area affects women and men differently and therefore creates gender challenges in terms of the roles and responsibilities. Women do most of the water collection in low-income urban areas, as they do in rural areas. 26% of adult females collect drinking water more than adult male counterparts with 21%. Results also indicate that both male and female children below age 15 are involved in collecting drinking water (3.8% and 4% respectively).

Women’s lives and income-generating opportunities in poor urban communities are profoundly shaped by their inadequate access to water. Modes of access to water and access to secure sanitation facilities influence women’s lives. Women face a range of difficulties in collecting water (time of access, uncertainty and quality of supply, and costs), the uncertainty of daily activities that makes it difficult for women to pre-determine their activities such as engagement in the market and other income-generating activities. Women’s safety occupies their thinking before accessing sanitation. The advantages of health, improved domestic work, livelihood opportunities, education, and improved gender relations are reported when communities gain access to safe water at the household level.

**Women and Decision Making:** Decision making at household level is not very different between the genders. While overall involvement in decision making for both sexes was 64.7%, the male - female distribution was 67.2% and 62.2% respectively. Involvement of women in household decisions is a little higher among the poorest, 69.4% among the rural poor and 68% among the urban poor. At the community level, female participation in decision making was as low as 1.7% as against that of their male counterpart of 17.4%.

**Local Economy:** Port Harcourt is home to the second largest and busiest port in Nigeria after Lagos. It is an important merchant port and is the primary oil-refining city in Nigeria. The city is a major industrial centre as it has a large number of multinational firms as well as other industrial concerns, particularly in terms of the petroleum industry. Port Harcourt is responsible for the manufacture of steel and aluminium products, pressed concrete, glass, tires, paint, footwear, furniture and cigarettes, and its main exports are palm oil and kernels, cocoa, coal, tin and peanuts. Port Harcourt is serviced by a total of 23 daily markets and one weekly market.

**Biological Environment:**

Vegetation: The natural vegetation in Port Harcourt has been greatly modified and destroyed. The increase in the population as well as developments in the project area has contributed to the destruction of the vegetation so as to cater for the increasing pressure on the land resources. In the open spaces there is grass and shrubs present while at the residential areas the normal and economic trees (oil palms, mangoes, flame of the forest trees) shrubs and ornamental plants dominate.

Fauna: There is no notable wild animal’s presence in the project area, mainly due to human habitation and extensive economic activities.

5. **Project Alternatives**

The project considered various technical alternatives, taking into account the available water resources, various technologies, investment and operation and maintenance costs, availability of spare parts, as well as staffing requirements. Boreholes are the preferred source of water as
surface water sources are either heavily contaminated or far from the city, making their exploitation more costly. Other alternatives considered include; pipe routing and laying alternatives and the selection of electro-mechanical equipment to be installed to ensure efficiency.

The “Do-Nothing Option was also addressed in the ESIA and this would involve maintaining the status quo. This means that no further rehabilitation and expansion of the water supply network in the area would be undertaken, excluding water works and routine pipeline maintenance. It would also mean that the current predominant practices in obtaining water supply in the two LGAs will be maintained. These include: (i) expanding water access through increased patronage of water cart pushers (Mai Ruwa) (ii) expanding water access through increased patronage of water tankers (iii) increasing water access from privatize boreholes and (iv) surface water harvesting. The Do-Nothing Option was found to be costly on the health of the population and is unsustainable in the long run.

On site public sanitation at selected markets is selected because there are no central sewerage network in the built up areas and its development requires detailed studies and designs which are unavailable. The project includes development of a comprehensive sanitation master plan, detailed feasibility studies and designs, pilot sewerage scheme and Resource mobilization for scale up.

Solid wastes management and drainage systems were considered. Due to high costs (non-availability of funds), these components were not retained. Solid wastes and drainage measures related to protection of the well fields in Rumoula were however retained.

6. Potential Impacts and Mitigation Measures

**Positive and Beneficial Impacts:**

*Reduction of Aquifer Vulnerability:* The project is designed to enhance the capacity of the PHWC in the supply of potable water, which will have significant positive impacts on the quality of life, health and sanitation status in Port Harcourt and Obio/Akpor LGAs. Municipal water supply as result of the project will discourage individual well ownership in the project area, which will enhance a better groundwater management/conjunctive use of groundwater resources in the project area. This is in line with the FMWR strategic plan to discourage private well ownership. The project intervention will also (i) eliminate multiple sources of aquifer vulnerability to pollution from poorly constructed individual wells and (ii) provide Rivers State government with the technical and financial capacity to drill deep wells to avoid the intrusion of saline water (recurrent issue in the project area) in shallower wells owned by private individuals.

*Reduction of Time Used for Fetching Water:* The project on completion will relieve women, youth and school-going children especially in the Rumuodumaya, Rumdara, Rumuomasi, Igwuruta and East West Road from fetching water from distantly located water sources. As a result, it will (i) exert positive impacts on education by improving school attendance, classroom performance and concentration especially of youth who would otherwise have been engaged in water fetching for their households and also possibly as water vendors (Mai Ruwa); and (ii) impact positively on women who in most African societies are responsible for ensuring the availability of water to their households thus providing more time for other productive endeavours and leisure.

*Economic Benefit:* 60% of the respondents in the project area pay between 1100 - 3000 Naira per month on water consumption. This constitutes for most of the population about 70% of
their income. The project therefore will contribute to a reduction in the economic burden of the population through (i) reducing cost of water and (ii) reducing health cost associated with water borne diseases.

Health benefits: the supply of clean water and hygiene promotion will reduce the incidences of water borne disease and improve health conditions. Dysentery and Typhoid have been identified as the most common diseases in the area. Health reports revealed that most of these waterborne diseases in the project area are caused by bacterial organisms. The relatively high level of literacy among the population will create a conductive environment for positive response to hygiene education.

In the schools, 66% of the borehole facilities sampled from schools, household and residential boreholes were drilled less than 3.0 m from septic tanks. This causes a series health hazards. The project will therefore engage with the Ministry of Education and Ministry of Health to increase the awareness of the students, teachers, household members and decision makers. In addition, the provision of water to schools will eliminate the health hazard from drinking water from the boreholes.

Improved Public Health and Hygiene: The project is designed to optimize supply of potable water to Port Harcourt and Obio/Akpor through groundwater abstraction. This will involve redevelopment of boreholes/wells and installation of new ones. It will also involve rehabilitation of the transmission and distribution mains within the network, and includes sensitization, awareness raising, organization and training to: (i) Promote improved hygienic behaviour and encourage household investment in hygienic toilets; (ii) Promote improved personal hygienic behaviour among school children through school health, education and campaigns; (iii) promote clean and hygienic environment, including handling and disposal of solid wastes; and (iv) support to consumer groups and CSO monitoring.

Employment Opportunities to locals: The project construction is estimated to take about 3 years, hence significant benefit is expected from employment opportunities to local communities during this period. The youth and women residing in the project area will benefit from the employment opportunities created due to the project.

Proposed enhancement measures include: (i) employment of work force mainly from the locality where the construction work is on-going; (ii) employment of women and provision of training for women in the different skills; (iii) employment, wage system, and other administrative measures for the local workforce should be in line with the country’s law.

Creation of income generating activities: The project will increase employment opportunities for local communities businesses such as shops, catering services (or small bars and restaurants) located in the project area due to the presence of large numbers of construction workers.

Negative Impacts:

Some of the significant adverse impacts and proposed mitigation measures are outlined below.

Impact on Hydrogeology and Groundwater Resources: Drilling of new boreholes and redevelopment of old boreholes may result in: Disruption of natural groundwater flow; Changes in natural groundwater chemistry; Introduction of contaminants into groundwater; Over exploitation of the aquifer; Saltwater Intrusion (Borikiri, Moscow Rd, Eagle Island etc already affected); Increase groundwater vulnerability if engineering designs, construction and
installations development of boreholes is poorly done. Contamination of surface water bodies with waste water from drilling processes; poor capping can increase the vulnerability of the aquifer as it could provide entry points of surface contaminants into the aquifers.

**Mitigation for Hydrogeology and Groundwater impacts:** Implement a groundwater monitoring program; Determine safe yield of the aquifer so as to estimate the quantities of water to be abstracted per hour and/or per day; Install boreholes in the 2nd and 3rd aquifers (150m and 270m respectively) which are safe from saline intrusion; Employ contractors with appropriate expertise in well design, construction and installation; Ensure that waste water from drilling are treated before disposal in the environment; Ensure well heads are properly capped.

**Soil Erosion:** Excavations for trenches for the transmission and distribution network and digging of foundations for new civil structures in the pumping stations may lead to loss of top soil, erosion and possible minor to moderate soil instability. Mitigation for Soil Erosion includes: ensuring that excavations are limited to desired areas for trenches; identify and avoid areas with unstable soil and local factors that can cause soil instability and develop an erosion control and re-vegetation plan to outline measures to minimize soil loss.

**Impact of Dust:** During construction, there is likely to be an increase in amounts of fugitive dusts and exhaust fumes from earthworks, digging trenches and movement of heavy-duty vehicles and equipment into the project work areas. This is likely to affect Public Health. Mitigation for Dust includes sprinkling of water via spraying devices to limit dust and to ensure that vehicles are serviced in accordance with the manufacturer’s specifications.

**Disruption of Traffic and Business Operations:** During construction and especially when laying the transmission and distribution networks along and across the roads, there is likely to be increased traffic congestion that will result in travel delay along some major roads & streets such as old Aba, Aba, Igwuruta, Rex Lawson, Harold Wilson, Churchill street, Ikwerre Rd, Rumukuta, Mile 1 etc. The construction activities especially the trenches will lead to disruption of business operations since shops are located adjacent to the proposed ROW. The Contractor shall develop a traffic management plan, an effective public communication plan and a Grievance Mechanism to warn the public of proposed blockage of road sections and the duration of construction activities along various streets.

**Impact of Asbestos Containing Materials (ACMs) and Polychloro-bi-phenlys (PCBs):** Removal and replacement of Asbestos Cement (AC) pipes for transmission and distribution; Installation and decommissioning of transformers may lead to release of asbestos containing material into the environment and contamination of surface waters and groundwater by PCBs. The proposed mitigation measures include; existing AC pipe sub-networks should be abandoned, and new pipes (PVC) laid to avoid complexity and the Contractor should implement site-specific PCBs management plan.

**Land Take:** The major direct adverse impact is due to permanent land take for the transmission lines, distribution network ROW and land area for a new overhead tank. Land in the proposed routes and overhead tank is currently used by petty and mobile traders. The Resettlement Action Plan developed for the project should be implemented. No construction should commence until compensation procedures have been completed.

**Impacts from Construction Camps:** The establishment of construction camps and the Engineer’s camp sometimes competes with the limited local resources. The existence of camps for the constructions workers close to settlement areas could influence negatively on local life style and sometimes may lead to cultural and social conflicts. To avoid such type of
conflicts and problems the establishment of the construction camps should be in a planned way without negatively affecting the local resources and the host community.

**Mitigation for Construction Camps:** These include; (i) Camp location and design should not be on environmental sensitivity of sites like swampy areas, but consider the future use of the facilities upon commissioning of the project. These considerations can assist safe and economical use of resources and can benefit the local administration and/or the surrounding community up on handing over of the camp facilities to the client. (ii) The continued use of the buildings and the camp facility after completion of the project will avoid demolishing and disposal problems.

### 7. Environmental Hazard Management

The failure of environmental mitigation can result in serious impacts such as erosion, accidents to the public on construction sites and disruption of the community lifestyles. The project involves occupational health and safety risks to the workers and the public, primarily in digging of trenches and operation of heavy machinery close to traffic, slopes and watercourses. The anticipated risks in this project include: (i) Exposure to excessive dust particles; (ii) Potential for collapse of trenches; (iii) Risk of fuel spills and therefore contaminating soil, surface water and groundwater.

The risks can be mitigated to a large extent through: (i) development of a project Occupational Health and Safety Plan for staff and a Community Safety Plan for the Public (ii) Strengthening staff skills and training in environmental management; (iii) sensitization of the public on safety measures around the trenches; (iv) Monitoring environmental actions and responsibilities and making provision for remedial actions; (v) Limiting time of exposure to dust particles and noise; (v) Establishing safety and inspection procedures in materials handling, operating heavy equipment and constructing trenches.

The Contractor shall submit an Emergency Response Plan containing Method Statements covering the procedures for the main activities which could generate emergency situations through accidents or neglect of responsibilities. These situations include, but are not limited to: (i) Accidents at the construction sites; (ii) Accidental leaks and spillages; (iii) Vehicle and plant accidents.

### 8. Monitoring Programme

The purpose of environmental and social monitoring is to quantitatively measure the compliance of the contractor(s) on the implementation of the proposed environmental and social mitigation measures as well as the effectiveness of the mitigation measures. The environmental monitoring program will operate through the preconstruction, construction, and operation phases.

The overall project and environmental management responsibilities are to be shared between several governmental and non-governmental organizations, each with specific executive responsibilities for particular aspects, which are exercised during the various stages of project preparation, implementation and subsequent operation and maintenance.

The roles and responsibilities for monitoring the environmental and social impacts and mitigation measures are as follows: The Ministry of Water Resources and Rural Development (MWRDD) will ensure implementation of all mitigation measures. The Port Harcourt Water
Corporation (PHWC) will ensure implementation of mitigation measures within pumping stations and off-site work areas. The State Ministry of Environment (SME), National Environmental Standards Regulatory Enforcement Agency (State), and Rivers State Environmental Protection Agency (RSEPA) will ensure implementation of measures that concern the environment. The Federal Road Safety Corps (FRSC) and Rivers State Transport Management Authority (TIMARIIV) will ensure that mitigation measures for impacts on traffic are implemented. Contractors will be responsible for task-specific mitigation. Independent Consultants will be responsible for the development of management plans as described in the ESMP (e.g. groundwater monitoring program, site-specific safety management plans, site-specific waste management plans, workers, respiratory protection program. Public Health departments from Port Harcourt and Obio/Akpor LGAs will be responsible for monitoring distribution of face masks to schools, offices etc.

The SME/RSEPA will undertake compliance monitoring and periodic inspection of pumping stations and other work areas. The MWRRD and PHWC will also be involved in some level of monitoring. All the mitigation measures specified in this plan shall be included in the bid documents for the successful enterprise to implement. Campaigns on HIV/AIDS, environmental protection and personal hygiene and sanitation shall also be undertaken. For this purpose, services of experienced NGOs in the fields would be sought. External monitoring shall be conducted with the Ministry of Finance as well as the AfDB that will check the project performances against their funding policy & environmental guidelines. The total cost for implementing the ESMP is estimated at One Million, Five Hundred and Seventy Eight Thousand, Eight Hundred and Five US Dollars ($1, 578,805.00) USD.


Stakeholder consultations started during project identification, and continued during preparation, appraisal and the Environmental and Social Impact Assessment and included included federal and state ministries, local government officials, beneficiary community groups, water vendors, NGOs and development partners. The proposed implementation arrangement encompasses technical support for continued consultations to follow-up and monitor implementation.

A consumer outreach and communication strategy has been proposed to support the Implementing Agency. During public consultations and stakeholder workshops most residents rated lack of sanitary facilities and poor environmental sanitation at least as serious as the lack of safe water. This led to the inclusion of sanitation in the project, while the original scope was only focused on water supply. The institutional support sub-component is well informed by the outcome of the consultations, e.g. the need to domesticate the Low Income Household Service Strategy and the establishment of Pro-poor Unit at PHWC, and having the relevant technical expertise in the Implementing Agency.

In a manner the information was disseminated for the public consultations, the ESIA disclosure will also follow a similar procedure. The ESIA will be officially disclosed through the local print and radio media. In addition, the ESIA will be disclosed through the State Government media, namely the website. The websites of the AfDB and the WB will also assist with the disclosure of the ESIA.
10. Complementary Initiatives

Complementary community initiatives are planned to enhance project benefits, improve socio-economic conditions of the local communities, and ensure project sustainability. These are as follows:

**Increased Household Connections through Social Connection Fund:** The project will establish a Revolving Social Connection Fund that will provide loans for house connections for the poor who cannot afford high connection fees to be reimbursed in instalments and paid along with water bills. This approach which is in line with the Low Income Household Strategy shows immediate double benefits: (i) a high number of households will be easily connected and have access to safe water, hence readily contributing to the attainment of the MDGs; and (ii) the high number of households connected in conjunction with planned actions to improve PHWC’s performance including reduction in unaccounted for water improved financial management and governance and reduction in O & M costs will help to generate much higher revenues, hence gearing the State utility towards autonomy and sustainability.

**Youth Involvement:** Unemployment among the youth is 28.7% and 28.8% male, female respectively. In order to ensure inclusiveness of different social groups (youth, water vendors, women working in markets, children, and elders), the project includes measures aimed at improving the capacity of these different groups participation in project and post project activities and these include

- Inclusion of special clauses in consultants and contractors contracts for employment of fresh graduates (incentives will be created for the contractors to do so, i.e. 50% of salaries paid from project funds). The advantages here are twofold: i) the youths are trained, have a job for the duration of the project (youth employment) and they gain experience, which increases their employment opportunities beyond the Project; and ii) the human capacity in engineering, finance, management etc. in the State is enhanced.

- Inclusion of special clauses in construction contracts for labour intensive activities (i.e. digging of trenches) to ensure employment of local youth/labour for all major construction contracts; and

- In collaboration with the Ministry of Youth Development, providing vocational training for the water vendors

In order to effectively carry out youth employment activities the project recognises the role already being played by the Ministry of Youth Development (MOYD). The Ministry has three major contributions to make in the area of engaging youth and creating employment. There are Youth Mobilization, Youth Education and Counselling and Youth Enterprises Development and Promotion. In 2010, the MOYD trained about 232 youth in Port Harcourt / Obio/Akpor in the field of citizenship, youth leadership, youth cooperative farmers, entrepreneurship capacity enhancement. The project will build on these experiences and closely partner with the MOYD in the youth employment activities

**Consumer Outreach:** The project will provide support to build the capacity of the PHWC to engage with the communities and stakeholders. Consumer Outreach will be handled through public awareness campaigns, promoting payment for water services. It will be undertaken in collaboration with the consumer groups established and capacitated by the project, and Community Development Committees (CDCs) within the two local governments; and (iii) a subsidy to PHWC operations until the customer base is established. This will be supported by a communication strategy, socio-economic surveys like an Update study on Low Income Household Strategy (LIHHS), Development of LIHHS implementation guidelines and tools, strengthening of the pro-poor unit in FMWR, and Establishment of a pro-poor unit at PHWC.
HIV/AIDS/STI & Malaria Awareness Campaign: The project has incorporated in its design awareness and prevention programs against the spread of HIV/AIDS and STI. A specialized service providing firm shall be appointed for implementation of HIV/AIDS and STD program.

Resettlement/Compensation (RAP): The details and estimates for Resettlement and Compensation are included in Annex 1 of this summary.

11. Conclusion

The proposed project will lead to several impacts on the environmental and socio-economic status of the project area. A good number of these impacts will be beneficial, especially the improvement of availability of potable water in Port Harcourt and Obio/Akpor LGAs, reduction of water borne diseases, reduction in hours spent (especially women and children) in sourcing for water, and the establishment of an environmentally sound, safe and sustainable climate resilient water supply and sanitation system. With the implementation of the proposed mitigation measures & proper compensation the adverse impact can be controlled to acceptable level.

The recommendations provided to ensure that the project is implemented in a sustainable manner include; (i) Update and implementation of the proposed environmental mitigation management & monitoring plan based on site specific conditions; (ii) inclusion of the necessary environmental clauses in the project tender & construction contract document so as to ensure the implementation of the proposed mitigation measures; (iii) ensure independent environmental supervision through establishment of Environmental Management Unit (EMU) as part of the supervision consulting service. The EMU shall be staffed with qualified professionals (environmentalist & sociologist) to the effective implementation of proposed mitigation management & monitoring measures; (iv) implement the RAP; (v) Strengthen the capacity of MoWRDD and PHWC to monitor the implementation of ESMP during construction and to carry out routine inspections during construction.

References


RESETTLEMENT ACTION PLAN SUMMARY

Project Name: Urban Water Sector Reform and Port Harcourt Water & Sanitation Project
Country: Nigeria
Project Number: P-NG-E00-007

1. Introduction and Background

The UWSR-PHWSS project is being implemented by the Rivers State Government and the African Development Bank (AfDB) in conjunction with the World Bank. The project aims to supply water and sanitation services to the population of two local government areas being Port Harcourt and Obio/Akpor (project area). This project forms part of the countrywide Urban Water Reform Programme being handled by the Federal Ministry of Water Resources (FMWR).

The Resettlement Action Plan (RAP) relates to those that will be affected by the water transmission and distribution lines that the project will be rehabilitating (for existing) and building (for those that do not exist). For the water transmission line the right of way (ROW) is not much of a problem given that most of ROW has been reclaimed by the on-going road developments in the State however, for the distribution network, some people will be affected. The ROW for distribution has been restricted to 1 meter given that the size of the pipes to be used is between 100mm and 150 mm. The most likely adverse impacts the project is going to have on the project affected persons (PAPs) are loss of income, loss of assets and land acquisition. There is little temporary relocation to be experienced in the project while no permanent relocation is envisaged.

This RAP summary provides the project description; project objectives; legal framework; legislation on land expropriation and compensation; eligibility criteria and entitlement; institutions for RAP implementation; implementation schedule; grievance redress mechanism; public consultations and community participation; persons affected by the project; socio-economic profile of affected households; full and partially affected PAPs; valuation methodology; project impacts on PAPS and properties; compensation levels for properties and assets; monitoring and evaluation; RAP implementation cost; and RAP disclosure.

2. Project Description

The project is envisaged for two levels being the Federal and the State level. On the federal level, it aims to enhance sector performance monitoring as well as the support provided by the FMWR to the states on priority topics such as operationalization of the Low Income Household Strategy (integrating women’s needs), urban WSS guidelines for Climate Change/Variability, and project preparation to promote investment opportunities.

For the state level it will focus on water supply and sanitation in the project area. Specifically the project will provide 1) WSS infrastructure being; rehabilitation and augmentation of water production and treatment systems, rehabilitation and extension of existing water transmission
and distribution networks, construction of public sanitation facilities, environmental protection infrastructure and establishment of buffer zones, 2) Institutional support through capacity building and training of PHWC and key stakeholders to ensure they fully play their respective roles in service provision; commercialisation of services; participatory consumer outreach and social inclusion; environmental protection and hygiene practices; establishment of PPPs to handle operations and support PHWC in managing the WSS facilities put in place; and a sanitation master plan for coordinated and gender responsive sanitation management

3. RAP Objective
It is important to note that the infrastructure component necessitated the preparation of the RAP; therefore the main aim of this RAP is to design methods and schemes for resettling or compensating the Project Affected Persons (PAPs) in the project area. The goal is to improve decision making as regards the resettlement and compensation of persons that would be affected by the proposed water and sanitation project with the specific objectives being to: (a) conduct a census survey of impacted persons and valuation of assets; (b) consult with the would be impacted Persons (PAPs); (c) describe compensation and other resettlement assistance to be provided; and (d) prepare a budget and time table for resettlement action.

4. Legal Framework
A number of legal and administrative frameworks were considered in the preparation of this RAP. Of prime importance is the Land Use Act of 1978 (modified in 1990) which states that in Nigeria land is controlled by individuals, corporations, local governments and state governments in accordance with the law. The Land Law operates at two levels being; a customary system that varies by ethnic group and family type around the country and a “statutory” system based on English law established during the colonial period which operates in many urban areas and selected other areas around the country, usually, where institutions of the modern society and the economy have established rights under this latter system. Others include the Environmental and Social Management Framework (ESMF) of the National Urban Water Sector Reform Project 1 & 2 (NUWSRP). The ESMF establishes a mechanism to determine and assess future potential environmental and social impacts of the participating States Water Agencies under the NUWSRP. In addition, The Resettlement Policy Framework (RPF) of the NUWSRP 1&2 was also a prime document. The RPF was prepared as a guide to set out the general terms under which land acquisition/encroachment, and/or any form of involuntary displacement of persons from the land or right of way of the project can take place.

5. Legislation on Land Expropriation and Compensation
According to the Land Use Act of 1978 Part V on revocation of rights of occupancy and compensation, the power to expropriate land lies with Governor to revoke a right of occupancy for overriding public interest. Due to the nature of the project being in the public interest, under statutory right Section 28 sub section 2 (b) and customary right Section 28 sub section 3 (a) public interest is defined as the requirement of the land by the government of the State or by a local government in the state in either case for public purposes within the state, or the requirement of the land by the government of the Federation for public purposes of the Federation. If the above sections are enforced and the right of occupancy is revoked, the holder and the occupier of such land shall be entitled to compensation for the value at the date of revocation of their right to the land.

Under Section 29 sub-section 4 a number of compensation measures are detailed. As per this Section 29, a landholder whose holding has been expropriated shall be entitled to payment for
compensation for his/her property situated on the land for permanent improvements he made to such land, and the amount of compensation for property situated on the expropriated land shall be determined based on replacement cost of the property and the amount of compensation should not be less than the current market value of construction. Moreover, an amount equal to the rent, if any was being received from the land ought to be paid. In addition to the amount of compensation for the property expropriated, the section also provides for compensation on crops on the land for an amount equal to the value as prescribed and determined by an appropriate officer.

With regard to the ROW the Act distinguishes between road corridor land and non-road corridor land. For the former, the Act under the Highway Act states that the ROW belongs to the Federal Ministry of Works (FMW) as part of the sovereign domain of the nation. The FMW has the right to dispose of all such lands, whether in the roadway itself or in the road reserve, which extends for federal roads to 50 meters on either side of the center line of the highway. For the latter, the Act specified that non-road corridor lands in Nigeria belong to the Federal Government while land within the territory of each of the states is vested in the State Governors of the respective states to hold in trust for the public and for public interest. In practice, government does not compensate known rightful owners of land/asset when the affected land/assets are located within the ROW of utilities. Rather, government enforces involuntary displacement by demolition of the structures and assets that are located within the land mapped for project.

6. Eligibility Criteria and Entitlement

The NUWSRP Resettlement Policy Framework (RPF) is in line with the eligibility criteria contained in OP 4.12 of the World Bank’s operational manual and AFDB Involuntary Resettlement Policy. Accordingly, compensation for lost assets and replacement costs is made for both titled and untitled land holders and property owners. In this project the absence of formal titles will not be a barrier to compensation, resettlement assistance and rehabilitation. All PAPs losing land, assets or sources of income will be compensated or rehabilitated according to the types and amount of their losses (permanent or temporary) at replacement cost. All PAPS, legal and illegal, are taken into consideration and accounted for.

Compensation will be paid either in cash or in-kind, following the agreement with the individual PAPs. For those willing to receive cash the money will be deposited in their bank accounts while those without bank accounts will be assisted to open such. Disbursements will be ensured by Rivers State Government and will take place in the presence of the project implementation unit (PIU) as well as the spouse or spouses of the individual PAPs.

The cut-off date for compensation eligibility has been set at 31st May 2013. A careful count and identification of the existing properties and affected persons has been conducted together with local officials. However, some difficulties were experienced with around 40 PAPs who occupy the area where a high-storage tank will be erected. They seemed reluctant to be identified even though they are accounted for in the PAPs. This poses a huge threat to the implementation of the RAP as it will be difficult to determine who falls among the 40 presently identified. The compensation principles for various affected population groups are given in the entitlement table below:
Entitlement Matrix

<table>
<thead>
<tr>
<th>Categories of PAPs</th>
<th>Type of Loss</th>
<th>Replacement/Compensation</th>
<th>Moving Allowance</th>
<th>Other Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Owners</td>
<td>Loss of Land</td>
<td>Land replacement of equal money or size value</td>
<td>NA</td>
<td>Land clearing</td>
</tr>
<tr>
<td></td>
<td>Loss of Structure</td>
<td>Full replacement cost at prevailing market rate in the project area</td>
<td>Kind or cash assistance of at least N15,000.00</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Loss rental Income</td>
<td>Not applicable in this project</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Traders/Business tenants</td>
<td>Loss of Income</td>
<td>Compensation of turnover for number of days of displacement</td>
<td>NA</td>
<td>Subsistence sum for the number of days of loss/displacement</td>
</tr>
<tr>
<td></td>
<td>Loss of structure</td>
<td>Full replacement cost at prevailing market rate in the project area</td>
<td>Kind or cash assistance of at least N15,000.00</td>
<td>Subsistence sum for the number of days of loss/displacement</td>
</tr>
<tr>
<td>Residential tenants</td>
<td>Loss of shelter not envisaged</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Encroachers using land for business activities</td>
<td>Loss of land</td>
<td>No compensation for land</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Loss of Income</td>
<td>Compensation of turnover for number of days of displacement</td>
<td>Kind or cash assistance of at least N15,000.00</td>
<td>Subsistence sum for the number of days of loss/displacement</td>
</tr>
</tbody>
</table>

7. Institutions for RAP Implementation

The overall responsibility for the RAP implementation is vested with NGO/consultant that would be engaged by the Ministry of Water Resources and Rural Development (MWRDD) of Rivers State. The NGO/consultant will be responsible for verifying with the PAPs the method of compensation most suitable for them. Relocation and compensation will be the major responsibility of the NGO/consultant. The MWRDD will provide and oversight role with regard to the accuracy of the details of the PAPs. To this end, the NGO/consultant in consultation with the MWRDD will prepare a practical relocation and compensation schedule. Funds for payment of the compensation will be made available by the MWRDD. The NGO/consultant will prepare monthly and quarterly progress reports which will be delivered to the MWRDD who in turn will submit the quarterly reports to the AfDB.

8. Implementation Schedule

The prime objective of the RAP is to ensure that compensation happens with the least disruption to the lives of the PAPs. The idea is to have all PAPs compensated before the project starts so as to minimize delays. For those that need to be resettled, the spot where they are to be taken has to be prepared in conjunction with the Ministry of Environment and the community development councils (CDCs). For those who will not be relocated but will lose their assets would have to be given at least a two week notice/civil work schedule prior to the commencement of the civil works. The RAP Implementation Schedule has made provision for a series of activities before the project commences to ensure PAP participation and consultations are carried out, namely:

- Land distribution for relocation if land-for-land is selected
- Preparation for the compensation of PAPs e.g. bank accounts for those without
- Compensation to PAP’s
- Income restoration measures
**Grievance Redress Mechanism**

In an unlikely event of a dispute arising between the RAP team and project affected persons the preferred option of dispute settlement is through amicable means. This will save time and resources as opposed to taking the matter to court. To ensure that the PAPs have avenues for addressing grievances related to any aspect of land acquisition and resettlement, procedures for the redress of grievances have been established for the project. The objective is to respond rapidly to the complaints of the PAP speedily and in a transparent manner. The mechanism is designed to be easily accessible, transparent and fair. In order to ensure that the interests and assets of the affected enterprises and individuals are not invaded or damaged, grievances and appeals are to be addressed through arbitration procedures.

The MWRRD will set up a Grievance Redress Committee (GRC) to address all complaints raised. In the interest of credibility and trust for the GRC to dealing with the PAPS complaints, the MWRRD will appoint an independent body like NGO to chair the committee. The committee will comprise of:

- NGOs
- Community Development Councils (CDCs)
- Representative of the 2 Local Government Areas
- Representatives of associations/interest groups and,
- Representatives of the MWRRD/PHWC
- PAP Representatives including Market women

The grievance procedure ought to be simple, administered as far as possible at the local and state levels to facilitate access, flexible and open to various proofs taking into consideration the fact that many people are illiterate requiring a speedy, just and fair resolution of their grievances. At the local level, the PIU can be seen as the first line of mediation with possibility to elevate the matter to the GRC if still unhappy with the verdict. However, when matters could not be resolved at this level, there is need for the grieved to seek redress in the court.
10. Public Consultations and Community Participation

Public consultations play a key role in enabling the public to participate in the planning of projects. At the beginning of the preparation of this RAP, there have been several public consultations and participatory briefings and meetings, which have taken place with the project affected people (PAP), local communities and government personnel. This creates an enabling environment for input and feedback between stakeholders. The main objective is to ensure that stakeholders' concerns, experiences and recommendations are integrated in the RAP, increasing public awareness and understanding of the project, and enhancing the RAP through the support and direct involvement of the stakeholders. Consultations that were undertaken include meetings with the Rivers State Water Corporation (now Port Harcourt Water Corporation (PHWC)); State Ministry of Environment, Ministry of Women Affairs, Ministry of Works, Ministry of Youths, Community development Committees, NGOS and the PAPs. Information was communicated and opinion of the affected people recorded. In addition, the PHWC also employed use of local chiefs, association leader, and NGOs in information dissemination around the project area. More notifications were made on the local radio station and aired in a local language “Pigeon English” which is mostly understood and in two newspapers; one being national one being international. Apart from the individual consultations undertaken when visiting the project sites, a public consultation was held at the offices of the PHWC on 4th May, 2013. Furthermore, another stakeholder sensitization workshop was held on the 22nd May 2013 at the offices of the MWRRD and chaired by her Honorable State Commissioner of MWRRD.

During the field surveys and the public consultation meetings held with various stakeholders and the PAPs major outcomes included:

- List of PAPs within the ROW of the project has been identified in the presence of local administrative officials (chiefs), public representatives, NGOs and professionals.
- The cut-off date was set at 31st May 2013.
- There is huge support for the project as it is meant to bring water close to them and they are even willing to pay for the services as long as they are available, reliable and sustainable.
- The project should consider the poor households especially with regard to connectivity costs to enable them to access water.

11. Persons Affected by the Project

The field survey showed that 248 owners of properties will be affected by the project. Among the PAPs 52.5% of them are female while 47.5% are male. The PAPS are dominated by married people accounting for 79.1%. Of these PAPs 50 have been identified as vulnerable being female-headed households, persons living on less than $1 per day and old persons aged 60 (6%) and above living with dependents. The age distribution of the PAPs indicate that the less than thirty (30) age group accounts for 14%, while between 31 and 60 age group accounts for 79%. Only 208 names of the PAPs identified during the field survey have been documented, however some 40 were reluctant to give their details. This poses a huge risk to the RAP implementation as it will be difficult to ascertain who they were during the survey process.

12. Socio-economic Profile of Affected Households

Since this project is of an urban nature, it was expected that farmers would not form most of the PAPs. In this case no person was listed as a farmer. A good number (50%) of the PAPs are traders, while civil servants and artisans account for 10% and 7% respectively. In terms of educational background most of the PAPs seem to have had some form of formal education.
At least 88% of them had attended primary school or more while 6% did not have any education. Only 15% of the PAPs had a university degree. On the income front, almost half (50%) of the PAPs earn income less than or equal to one thousand Naira (NGN1,000) per household per day, those earning between NGN 1,100 and NGN2,400 account for 30% and those above NGN2,500 account for 14%.

13. Fully and Partially Affected Persons

**Fully Affected:** Fully affected PAPs are those where almost all the land is taken hence, the PAP cannot re-establish the former use of the land. In the project area only one person will be fully affected by land purchase and thus will receive full compensation subject to the method of compensation they will choose be it cash to acquire another piece of land or land-for-land, and transfer for loss of business elsewhere.

**Partially Affected:** as the project will result in most of the PAPs losing some assets and income, this will render them to be partially affected. These partially affected PAPs will be able to continue using some of their assets in their present state without any need of relocation but would need to be compensated for those assets lost or even access to the premises as most appear to be shops.

14. Valuation Methodology

14.1 *Method of Valuing Compensation for Loss of Structures*

The estimation of the unit cost of compensation was based on the AfDB’s principle that any income or asset lost will be valued at their current full replacement cost in order not make the PAPs worse off. The following table presents the average unit costs applied for estimating the budget of reconstructing the affected houses and fence.

<table>
<thead>
<tr>
<th>Unit Cost of Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Land (in PH Town)</td>
</tr>
<tr>
<td>Cement</td>
</tr>
<tr>
<td>Corrugated iron</td>
</tr>
<tr>
<td>Trampoline</td>
</tr>
<tr>
<td>Tiles</td>
</tr>
<tr>
<td>Block-cement</td>
</tr>
<tr>
<td>Wood/plan</td>
</tr>
<tr>
<td>Iron rod</td>
</tr>
<tr>
<td>Truck hire within the city</td>
</tr>
<tr>
<td>Labour cost: Mason, carpenter etc.</td>
</tr>
</tbody>
</table>

Exchange rate used $1 = NGN 158

15. Project Impacts on PAPs

15.1 *Loss of Land:* due to the construction of an overhead water storage tank, one person will lose their land which is where the tank will be placed. The size of the land is 900 square meters. In addition, given that the land is currently occupied by traders, the owner will also incur some economic loss from the rentals/income generated by the land.
15.2 *Loss of structure/shop:* given that some of the PAPs fences, balconies, pavements are encroaching on the ROW, this means they are going to be lost. Furthermore, access to some shops is going to be hampered during the civil works. Around 88 persons are likely to be adversely affected by this.

15.3 *Electricity and Telecommunication properties Affected:* The project will not affect any electricity or telecommunications poles.

15.4 *Loss of means of livelihood:* Apart from losing land and assets/structures, some PAPs are likely to lose their means of livelihood as they would have to vacate the right of way. This group includes mostly those with moveable market tables and kiosks as they would likely be out of business during the civil works. Over 140 persons are in this category and this can be a huge blow for them given that they cannot afford to rent or get alternative sites for their activities although these impacts might be short-lived as in most cases unless the ROW is barricaded, PAPs are likely to reoccupy it.

16. **Compensation Levels for Properties and Assets**

16.1. **Compensation for land:** The total budget requirement for compensating the PAP affected land acquisition has been estimated to amount to USD 151,898.73. Consideration of the loss of income has to be factored in for this particular person given that he is likely to lose rental income from the people currently occupying the area.

16.2. **Compensation for loss of structure/assets and loss of livelihood:** The combined budget for those PAPs that are going to incur a loss of structure/assets and livelihoods as well as their income is USD 99,170.89. This will be shared among the 207 PAPs subject to their respective entitlements. As earlier noted that there are some 40 PAPs that have been identified even though they have not been properly documented, those situated at the site where the high storage tanks will be, the budget allocated to this group is USD 11,392.5. It should be noted that the RAP consultant has been instructed to go and do a proper certification of these 40 people so as to avoid ineligible people claiming losses.

17. **Monitoring and Evaluation**

17.1 *Internal and External Monitoring:* Internal and External monitoring and evaluation process have been designed as an integral part of the RAP with the objective of ensuring the RAP implementation complies with the recommendations set out in the RAP. Internal monitoring activities will be handled by the internal monitoring and evaluation officer at the Project Implementation Unit (PIU) in cooperation with staff of the MWRRD. They will work together to ensure regular inspection and supervision of the RAP implementation schedule on day to day basis and capture the progress in the monthly and quarterly progress reports, which are submitted to AfDB. This will enable evaluation of the RAP implementers’ reports against their own findings for proper supervision.

External Monitoring will also be conducted by an independent consultant who will be hired by MWRRD. The independent consultant will monitor and evaluate the RAP by adopting the set of process and output indicators prepared. Finally MWRRD will inspect the monitoring report and evaluate the RAP in consultation with the PIU, the independent consultant and the PAPs by adopting the process and output indicators.

17.2 *Monitoring Cost:* An NGO/consultant will be appointed by the MWRRD and will be vested with the overall responsibility for the coordination, monitoring and reporting of the
RAP implementation. Budget requirement for monitoring the RAP is estimated to be USD 26,246.20.

18. **RAP Implementation Cost**
The total budget requirement for compensating the PAPs has been estimated to amount to USD 343,220.32. The costs include compensation for affected structures, relocation and implementation of M&E.

<table>
<thead>
<tr>
<th>Summary of Total Budget Requirement (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item Description</strong></td>
</tr>
<tr>
<td>Compensation for land acquisition</td>
</tr>
<tr>
<td>Compensation for 207 PAPs</td>
</tr>
<tr>
<td>Compensation for 40 PAPs at Moore House Land</td>
</tr>
<tr>
<td><strong>Total Resettlement and Compensation</strong></td>
</tr>
<tr>
<td>Capacity Building and Training for RAP Implementation</td>
</tr>
<tr>
<td>Operating costs including Income restoration measures and Monitoring &amp; Evaluation of RAP Implementation</td>
</tr>
<tr>
<td>Cost of engagement of consultant/NGOs for compensating payment</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

19. **RAP Disclosure**
In a manner the information was disseminated for the public consultations, the RAP disclosure will also follow a similar procedure. The RAP will be officially disclosed through the local print and radio media. It is of utmost importance to use easily accessible media platforms. Copies of the detailed RAP will also be distributed to local councils, CDCs, NGOs and the displaced persons in a form, manner, and language that are understandable to them. In addition, the RAP will be disclosed through the State Government media, namely the website. The websites of the AfDB and the WB will also assist with the disclosure of the RAP.