ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR PHC FACILITIES

Lagos State Health Infrastructure Project (LSHIP)

Volume 1 -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Group 1)

By

Lagos State Ministry of Health (LSMoH)

Project Implementation Unit (PIU)

Alausa Secretariat, Ikeja, Lagos State

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This Document Information Matrix

Environmental and Social Impact Assessment for Lagos State Health Infrastructure Project (LSHIP) - Group 1 -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis –

Items	Details
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Geographic Coverage	Amuwo-Odofin Local Government Area, Ajeromi Ifelodun Local Government Area, Alimosho Local Government Area and adjoining communities
Facilities Covered	Agboju PHC, Oridilu PHC, Bada PHC, Ogbomoshotedo PHC
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Confidentiality Note	Not for citation or regulatory approval until final version is issued

AXIS-BASED ESIA NOTE

The Lagos State Health Infrastructure Project (LSHIP) involves upgrading, rehabilitating, and constructing 29 Primary Healthcare (PHC) facilities across Lagos State. To ensure effective environmental and social assessment, the facilities have been clustered into eight (8) geographic axes, each with its own standalone ESIA volume.

This approach allows for:

- Detailed site-specific analysis of environmental and social risks
- Efficient regulatory review by FMEnv and LASEPA
- Clear alignment with AfDB's Integrated Safeguards System (ISS, 2024)
- Improved stakeholder engagement within each axis
- Accurate baseline data collection reflecting local conditions

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Group 1) comprises four PHC facilities:

- Agboju PHC
- Oridilu PHC
- Bada PHC
- Ogbomoshotedo PHC

While each axis report is independently reviewable, all eight volumes collectively form the full ESIA documentation for the LSHIP. Cross-references are provided where necessary to ensure consistency across axes, particularly for cumulative impacts, medical waste management, climate resilience, and stakeholder engagement.

This axis-based structure ensures that environmental and social risks are assessed at the appropriate geographic scale while maintaining compliance with FMEnv Category I and AfDB Category 1 requirements.

CONSULTANT CERTIFICATION

This ESIA Report for the Lagos State Health Infrastructure Project (LSHIP) -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Group 1) has been prepared by Multiple Development Services Ltd. (MDS), supported by Natural Eco Capital, in accordance with:

- The Environmental Impact Assessment Act No. 86 of 1992 (as amended)
- FMEnv Sectoral Guidelines for Health Facilities
- Lagos State Environmental Protection Agency (LASEPA) regulations
- African Development Bank (AfDB) Integrated Safeguards System (ISS, 2024)

We hereby certify that:

1. The ESIA was conducted using accepted scientific, environmental, and social assessment methodologies.
2. Field data collection, stakeholder engagement, and baseline studies were carried out in accordance with FMEnv requirements.
3. All information presented is accurate to the best of our knowledge and based on data obtained during fieldwork, consultations, and technical analysis.

Lead ESIA Expert:

Name: [Insert Lead ESIA Expert Name]

FMEnv Registration No.: [Insert FMEnv Registration Number]

Signature: _____

Date: [Insert Date]

Firm Representative (MDS):

Name: Dr. Eugene Itua

Designation: Chief Executive Officer

Signature: 

Date: July 2026

DISCLAIMER / CAVEAT

This Environmental and Social Impact Assessment (ESIA) Report for the Lagos State Health Infrastructure Project (LSHIP) -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Group 1) is issued as a Draft for Review.

The contents of this document are not final and shall not be cited, distributed, or used for regulatory approval until all comments from the Federal Ministry of Environment (FMEnv), Lagos State Environmental Protection Agency (LASEPA), African Development Bank (AfDB), and relevant stakeholders have been fully incorporated.

All findings, assessments, baseline data, and recommendations contained herein are subject to modification following:

- Regulatory review and directives
- Stakeholder consultations
- Additional field sampling and laboratory analysis
- Technical validation by the Project Implementation Unit (PIU)

The Lagos State Ministry of Health (LSMoH) and its Project Implementation Unit (PIU) accept no liability for any use of this draft report outside the formal review process.

A final ESIA will be issued only after completion of the mandatory 120-day public disclosure period required for AfDB Category 1 projects and subsequent FMEnv approval.

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The Lagos State Ministry of Health (LSMoH), through its Project Implementation Unit (PIU), acknowledges the contributions of all institutions, communities, and individuals who supported the preparation of this Environmental and Social Impact Assessment (ESIA) for the Lagos State Health Infrastructure Project (LSHIP) -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Group 1).

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Lagos State Environmental Protection Agency (LASEPA) For technical input, environmental compliance guidance, and coordination with state regulatory systems.

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Community stakeholders, including traditional leaders, women's groups, youth associations, PHC staff, and vulnerable groups, provided valuable insights during consultations.

Consultants Multiple Development Services Ltd. (MDS) and Natural Eco Capital for conducting field studies, stakeholder engagement, and preparing the ESIA documentation.

The PIU appreciates the cooperation of all stakeholders whose contributions have strengthened the environmental and social integrity of this ESIA.

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ABBREVIATIONS LIST

Abbreviation	Definition
ACM	Asbestos-Containing Material
AADT	Annual Average Daily Traffic
AfDB	African Development Bank
APHA	American Public Health Association
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BSL	Biosafety Level
BTOR	Back-to-Office Report
CASHES	Community Affairs, Safety, Health, Environment and Security
CEC	Cation Exchange Capacity
CESMP	Contractor Environmental and Social Management Plan
CFU	Colony-Forming Unit
CHEW	Community Health Extension Worker
CIZ	Cumulative Influence Zone
CLO	Community Liaison Officers
CoC	Code of Conduct / Chain of Custody
COD	Chemical Oxygen Demand
CRM	Certified Reference Material
DAI	Direct Area of Influence
DO	Dissolved Oxygen
DPC	Damp Proof Course
E&S	Environmental and Social
EC	Electrical Conductivity
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMR	Electronic Medical Record
EPRP	Emergency Preparedness and Response Plan
ESCP	Environmental and Social Commitment Plan

ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
FGD	Focus Group Discussion
FFL	Finished Floor Level
FMEnv	Federal Ministry of Environment
FPIC	Free, Prior and Informed Consent
GBV	Gender-Based Violence
GHG	Greenhouse Gas
GIS	Geographic Information System
GPS	Global Positioning System
GRM	Grievance Redress Mechanism
HAI	Healthcare-Associated Infection
HEFAMAA	Health Facility Monitoring and Accreditation Agency
HEPA	High-Efficiency Particulate Air
HIRA	Hazard Identification and Risk Assessment
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HMWMP	Hazardous and Medical Waste Management Plan
HRDD	Human Rights Due Diligence
HRIA	Human Rights Impact Assessment
HSE	Health, Safety and Environment
IAI	Indirect Area of Influence
IBA	Important Bird Area
IDRI	Infectious Disease Research Institute
IEQ	Indoor Environmental Quality
IESM	Independent Environmental and Social Monitor
IFC	International Finance Corporation
ILO	International Labour Organization
IPC	Infection Prevention and Control
IPCC	Intergovernmental Panel on Climate Change

ISS	Integrated Safeguards System
IUCN	International Union for Conservation of Nature
KII	Key Informant Interview
KPI	Key Performance Indicator
LASEPA	Lagos State Environmental Protection Agency
LASG	Lagos State Government
LASM	Lagos State Museum
LASODA	Lagos State Office for Disability Affairs
LASWARCO	Lagos State Water Regulatory Commission
LAWMA	Lagos State Waste Management Authority
LCDA	Local Council Development Area
LGA	Local Government Area
LSHIP	Lagos State Health Infrastructure Project
LOS	Level of Service
LOTO	Lockout/Tagout
LSDP	Lagos State Development Plan
LSMoH	Lagos State Ministry of Health
LTI	Lost-Time Injury
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MDS	Multiple Development Services
MEP	Mechanical, Electrical, and Plumbing
MIRA	Mirabel Centre
MOU	Memorandum of Understanding
NBMA	National Biosafety Management Agency
NCDC	Nigeria Centre for Disease Control
NDC	Nationally Determined Contribution
NESREA	National Environmental Standards and Regulations Enforcement Agency
NGN	Nigerian Naira
NGSA	Nigerian Geological Survey Agency

NHMIS	National Health Management Information System
NIMET	Nigerian Meteorological Agency
NIOMR	Nigerian Institute for Oceanography and Marine Research
NOSDRA	National Oil Spill Detection and Response Agency
NPHCDA	National Primary Health Care Development Agency
NPK	Nitrogen, Phosphorus, Potassium
NTU	Nephelometric Turbidity Unit
O&M	Operation and Maintenance
OHS	Occupational Health and Safety
OS	Operational Safeguard
PAH	Polycyclic Aromatic Hydrocarbon
PAP	Project Affected Person
PCM	Phase Contrast Microscopy
PEP	Post-Exposure Prophylaxis
PHC	Primary Healthcare Centre
PHCB	Primary Healthcare Board
PIU	Project Implementation Unit
PLC	Portland Limestone Cement
PM	Particulate Matter
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
PPV	Peak Particle Velocity
PS	Performance Standard
PSP	Private Sector Participation
PTSD	Post-Traumatic Stress Disorder
PV	Photovoltaic
PWD	Person with Disability
QA/QC	Quality Assurance / Quality Control
RAP	Resettlement Action Plan
RCP	Representative Concentration Pathway

RO	Reverse Osmosis
SDG	Sustainable Development Goal
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SRI	Solar Reflectance Index
SRTM	Shuttle Radar Topography Mission
STI	Sexually Transmitted Infection
SWP	Safe Work Procedure
TCFD	Task Force on Climate-related Financial Disclosures
TDS	Total Dissolved Solids
TEM	Transmission Electron Microscopy
TMP	Traffic Management Plan
TPC	Total Plate Count
TPH	Total Petroleum Hydrocarbon
TSS	Total Suspended Solids
UHC	Universal Health Coverage
UNGPs	United Nations Guiding Principles on Business and Human Rights
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VAPP	Violence Against Persons (Prohibition) Act
VOC	Volatile Organic Compound
VPSHR	Voluntary Principles on Security and Human Rights
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization
WGS84	World Geodetic System 1984

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION AND PROJECT BACKGROUND

ES.1.1 Project Overview

The Lagos State Health Infrastructure Project (LSHIP) is a US$200 million health system strengthening programme implemented by the Lagos State Ministry of Health (LSMoH) with financing from the African Development Bank (AfDB). The initiative aims to modernize, expand, and create climate-proof healthcare infrastructure across Lagos State through the construction of 11 new Primary Healthcare Centres (PHCs), refurbishment of 19 existing PHCs, and the development of secondary and tertiary healthcare facilities.

This Environmental and Social Impact Assessment (ESIA) addresses Group 1 -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, comprising four (4) PHC facilities located in the Amuwo-Odofin, Ajeromi Ifelodun, and Alimosho Local Government Areas and their environs:

PHC Facility	**Location**	**Project Type**
Agboju PHC	Oriade LCDA, Amuwo-Odofin LGA	New Construction
Oridilu PHC	Ifelodun LCDA, Ajeromi Ifelodun LGA	Refurbishment
Bada PHC	Ayobo Ipaja LCDA, Alimosho LGA	Refurbishment
Ogbomoshotedo PHC	Egbe Idimu LCDA, Alimosho LGA	Refurbishment

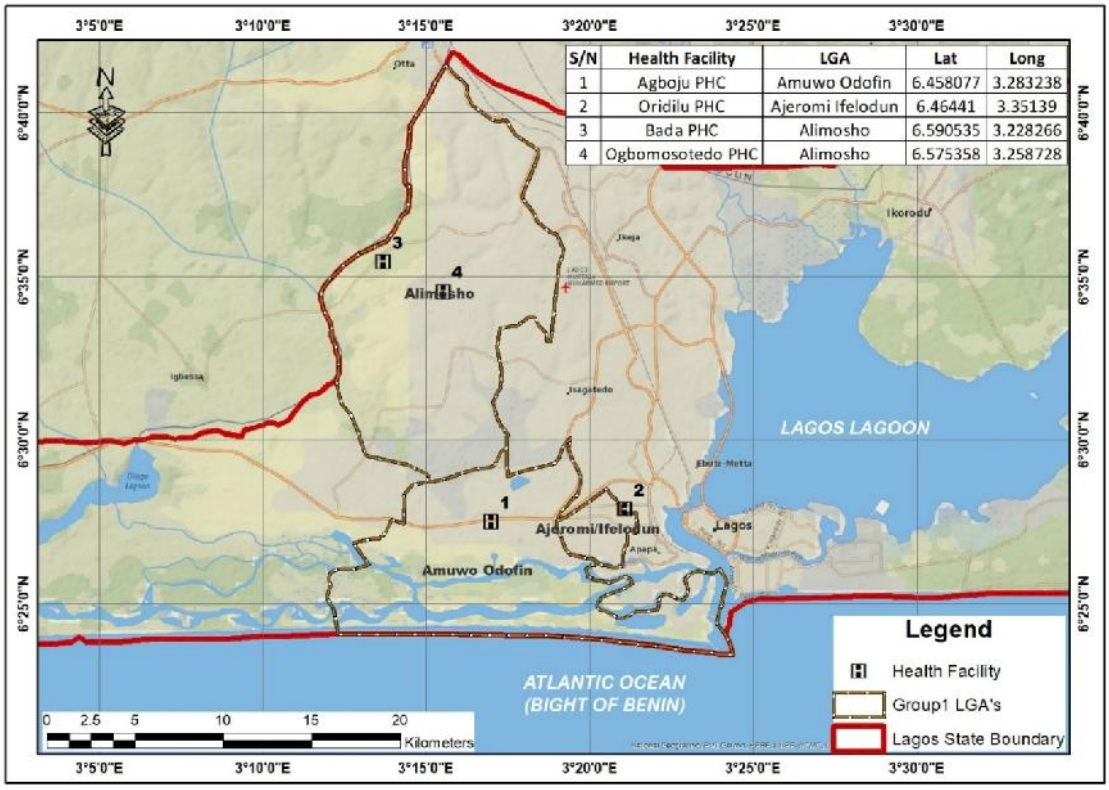


Figure ES1: Project Location Map

ES.1.2 Project Rationale

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is a densely populated urban and peri-urban corridor with significant gaps in healthcare infrastructure. Existing PHCs are under-resourced, with structural deterioration, inadequate water supply, poor waste management systems, and suspected asbestos-containing materials at three sites (Oridilu, Bada, and Ogbomoshotedo). The project directly responds to these deficits by:

- Improving access to quality primary healthcare for low-income and vulnerable populations
- Upgrading structural integrity, water supply, sanitation, and waste management systems
- Ensuring continuity of essential health services during and after construction
- Strengthening climate resilience through green building design and solar PV systems

ES.1.3 Project Classification

The LHTIP is classified as:

- AfDB Category 1 (High Risk) under the Integrated Safeguards System (ISS) -- requiring a full ESIA
- FMEnv Category I under the EIA Act CAP E12 LFN 2004 -- requiring a full ESIA

This classification reflects the project's multi-site footprint, potential involuntary resettlement, presence of hazardous materials (asbestos), proximity to sensitive ecosystems (wetlands and lagoon margins), and the scale of construction activities in densely populated communities.

ES.1.4 ESIA Objectives

The overarching objective of this ESIA is to serve as the principal due diligence instrument for the LSHIP. Specifically, this report:

1. Establishes comprehensive baseline conditions for the four PHC sites
2. Identifies and assesses all potential environmental and social impacts
3. Develops clear, actionable, site-specific mitigation measures
4. Prepares safeguard instruments including ESMPs, HMWMP, and GBV Action Plan
5. Demonstrates full compliance with AfDB ISS, FMEnv EIA Act, and international good practice
6. Supports informed decision-making by regulators, financiers, and stakeholders

ES.2 PROJECT DESCRIPTION

ES.2.1 Project Components -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis comprises:

Component	Description
New Construction	One (1) new Primary Health Centre at Agboju on government-owned land
Refurbishment	Three (3) existing PHCs upgraded to Comprehensive Health Centre standards
Infrastructure	Solar PV systems, boreholes, septic tanks, and medical waste treatment facilities
Access Improvements	Upgraded access roads and drainage within PHC premises

ES.2.2 Design Features

All facilities incorporate climate-resilient green building design, including:

- Solar PV systems with battery storage (24--48 hours backup)
- Rainwater harvesting (5,000--10,000 L storage per PHC)
- Cool roofs and natural ventilation

- Disability-friendly design (ramps, wide doorways, accessible toilets)
- Oversized drainage designed for 1:100-year storm + 30% climate factor

ES.2.3 Project Phases

Phase	Duration	Key Activities
Pre-construction	6--12 months	RAP implementation (*for Agboju*), asbestos surveys (*for Oridilu, Bada, Ogbomoshotedo*), design, permitting, contractor procurement
Construction	[12 – 18 months]	Earthworks, building works, MEP installation, equipment installation
Operation	50+ years	Routine outpatient, maternal/child health, immunization, laboratory services

ES.2.4 Project Resources

Resource	Estimated Quantity	Sourcing
Labour (peak)	160–320 workers	≥50% local hiring (within LGAs)
Cement	4,500–6,000 bags (225–300 tonnes)	Local (≥60% local sourcing)
Sand and Gravel	1,200–1,500 m³ (sand); 900–1,100 m³ (gravel)	Local (≥80% local sourcing)
Steel	45–60 tonnes	Nigerian mills (≥40% local sourcing)
Concrete Blocks	60,000–150,000 blocks	Local (≥80% local sourcing)
Roofing (Cool Roof)	2,200–2,800 m²	Local or imported
Solar Panels	120–150 panels	Imported
Batteries (Lithium-ion)	45 units	Imported
Water Tanks	250,000–350,000 litres	Local (plastic or concrete)

ES.3 LEGAL AND INSTITUTIONAL FRAMEWORK

ES.3.1 Nigerian Regulatory Framework

This ESIA complies with:

- EIA Act Cap E12 LFN 2004 -- Mandatory EIA for prescribed activities (Category I designation)
- NESREA Regulations (2007--2021) -- Air quality, noise, water quality, sanitation and waste control standards
- Harmful Waste Act Cap H1 LFN 2004 -- Prohibits improper disposal of hazardous waste (asbestos, chemicals)
- Land Use Act Cap L5 LFN 2004 -- Governs land acquisition and compensation
- Violence Against Persons (Prohibition) Act 2015 -- Prohibits sexual violence and exploitation
- Lagos State Environmental Laws -- LASEPA permits, LAWMA waste management, physical planning approvals

ES.3.2 AfDB Operational Safeguards (ISS 2024)

The project triggers the following AfDB Operational Safeguards:

Safeguard	Requirement	Project Compliance Action
OS1 -- Environmental and Social Assessment	Full ESIA for Category 1 projects	This ESIA report
OS2 -- Labour and Working Conditions	Worker protection, OHS, non-discrimination	Labour Management Plan, OHS Plan
OS3 -- Resource Efficiency and Pollution Prevention	Waste management, pollution control	HMWMP, wastewater management
OS4 -- Community Health, Safety and Security	Community safety, traffic management	Traffic Management Plan, EPRP
OS5 -- Land Acquisition and Involuntary Resettlement	Compensation, livelihood restoration	RAP for Agboju
OS6 -- Biodiversity and Ecosystem Services	Critical habitat screening, offsets	Wetland buffers, biodiversity monitoring

OS10 -- Stakeholder Engagement and Information Disclosure	Public consultation, GRM, 120-day disclosure	SEP, GRM, public disclosure

ES.3.3 International Standards

Where Nigerian law is silent or weaker, the following international standards are adopted:

- IFC Performance Standards (PS1--PS8) and EHS Guidelines
- WHO Safe Management of Wastes from Health-Care Activities (2014)
- ILO Conventions 155, 161, 187, and core labour standards
- Equator Principles IV (EP4)
- UN Guiding Principles on Business and Human Rights (UNGPs)

ES.4 BASELINE ENVIRONMENTAL AND SOCIAL CONDITIONS

ES.4.1 Physical Environment

Parameter	Description
Location	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis – low-lying coastal plain, sandy/clayey soils, extensive wetlands and floodplains
Climate	Humid tropical (Köppen: Aw); bimodal rainfall (1,500–1,800 mm/year); 26–35°C
Air Quality	PM_{10}: 49–79 µg/m³; $PM_{2.5}$: 35–110 µg/m³ – significantly above WHO limits in some areas due to urban congestion
Noise	Daytime: 52–64 dB(A); Night-time: 50–65 dB(A) – elevated due to dense urban environment
Water Quality	Groundwater generally meets WHO/FMEnv standards; elevated coliform and turbidity at some sites
Geology	Benin Formation coastal plain sands; alluvial deposits; lateritic soils
Erosion Risk	High at Agboju and Ogbomoshotedo; medium at Oridilu and Bada
Flood Risk	Very High at Agboju and Oridilu (Lagos Lagoon proximity); High at Bada and Ogbomoshotedo

ES.4.2 Biological Environment

Aspect	Findings
Vegetation	Highly degraded urban environment; opportunistic weeds; sparse ornamental plants
Sensitive Ecosystems	Creeks, wetlands, floodplains at Agboju and Oridilu; Lagos Lagoon proximity
Critical Habitat	Likely Critical Habitat at Agboju and Oridilu (IFC PS6 Criterion 4)
Notable Species	Pangolin (*Phataginus tricuspis* -- Vulnerable); Nile monitor; egrets/herons, Snakes in swamps of Agboju & Oridilu
Ecosystem Services	Farmland (food security), groundwater (water supply), fish (livelihoods), flood regulation (wetlands)

ES.4.3 Socio-economic Environment

Aspect	Findings
Population	200,000–400,000 residents across catchment areas
Livelihoods	Trading, transport, artisanship, farming, limited fishing (Agboju, Oridilu)
Land Tenure	Government-owned (Agboju, Oridilu, Bada, Ogbomoshotedo)
Resettlement	Agboju: 13 shop owners (economic displacement); no farmers or informal settlers
Vulnerable Groups	Women-headed households, elderly, persons with disabilities, low-income households
GBV Risk	Medium–High (poor lighting, isolated paths, limited reporting, labour influx, displacement stress at Agboju)
Cultural Heritage	No heritage sites within 100 m; chance finds possible during excavation

ES.4.4 Climate Baseline and Projections

Parameter	Current (2024)	Projected (2050, RCP 8.5)

Temperature (average)	28°C	+2.5°C
Hot days (>35°C)	25 days/year	80 days/year
Extreme rainfall intensity	Baseline	+30%
Sea-level rise	2--3 mm/year	+0.5 m

High-risk sites: Agboju (flooding), Oridilu (flooding, coastal erosion), Bada (heatwaves), Ogbomoshotedo (heatwaves)

ES.5 KEY ENVIRONMENTAL AND SOCIAL IMPACTS

ES.5.1 Summary of Unmitigated Impacts

Significance	Impact	Site(s)	Phase
● CRITICAL	Asbestos exposure	Oridilu, Bada, Ogbomoshotedo (suspected)	Pre-construction / Construction
● CRITICAL	Wetland loss	Agboju, Oridilu	Construction
● CRITICAL	GBV/SEA/SH (lack of reporting)	All sites	Construction
● CRITICAL	Medical waste mismanagement	All sites	Operation
□ MAJOR	Labour influx *workforce*	Agboju, Oridilu	Construction
□ MAJOR	Community health and safety (traffic)	All sites	Construction
□ MAJOR	Soil erosion	Agboju, Oridilu	Construction
□ MAJOR	Water quality contamination	Agboju (Lagos Lagoon), Oridilu (creeks)	Construction
□ MAJOR	Fisheries livelihood disruption	Agboju, Oridilu	Construction / Operation
□ MODERATE	Dust, noise, construction waste	All sites	Construction

ES.5.2 Key Beneficial Impacts

Benefit	Quantification
Healthcare access	200,000–400,000 residents served by 4 PHCs
Maternal mortality reduction	Estimated 20–30% reduction
Under-five mortality reduction	Estimated 25–35% reduction
Direct jobs created	160–320 jobs during construction
Indirect jobs	Estimated 10,000–15,000 supply chain jobs
GHG emissions reduction	2,000–4,000 tCO_2e/year (solar PV)
Diesel savings	500,000–1,000,000 litres/year

ES.6 ANALYSIS OF ALTERNATIVES

Alternative	Assessment	Conclusion
No-Project Alternative	Continued poor healthcare quality, infrastructure decay, no RAP for PAPs	**Rejected** -- unacceptable
Alternative Sites	Assessed for each PHC; rejected due to land acquisition costs, accessibility, or displacement risks	**Preferred** -- existing government/community land
Conventional Design	Higher operating costs, higher GHG emissions, no climate resilience	**Rejected**
Green Building Design	Lower operating costs, climate resilience, aligns with SDGs and NDCs	**Preferred**
Diesel Generators	High operating cost, air pollution, GHG emissions	**Rejected**
Solar PV + Battery	Low operating cost, zero emissions, climate resilience	**Preferred**

Open Burning of Waste	Air pollution, community health risk, illegal	**Rejected**
WHO-compliant HMWMP	Protects workers, communities, environment; complies with standards	**Preferred**

ES.7 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

ES.7.1 Key Mitigation Measures

Impact	Mitigation Measure	Responsibility
Asbestos	Licensed abatement, wet removal, air monitoring (≤0.1 f/ml)	Specialist Contractor
Wetland loss	50 m buffer; biodiversity offset (1:1--3:1) if unavoidable	PIU
GBV/SEA/SH	Code of Conduct, training, confidential GRM, referral pathways	Contractor / PIU / GBV Specialist
Labour influx	Worker camp rules(Workers code of conduct), ≥50% local hiring, CoC	Contractor
Traffic safety	Marshals, speed limits, signage, diversion routes	Contractor
Erosion	Silt fences, hydromulch, slope stabilisation	Contractor
Water quality	Sediment traps, bunded fuel storage, spill kits	Contractor
Medical waste	WHO colour-coded segregation, autoclave, LAWMA disposal	Facility Operator
Dust	Water spraying, covering stockpiles	Contractor
Noise	Barriers, scheduling noisy works, silencers	Contractor

ES.7.2 Monitoring Plan

Parameter	Indicator	Frequency	Trigger

Air Quality	PM_{10}, $PM_{2.5}$	Daily (PM_{10}), Weekly ($PM_{2.5}$)	>50 ug/m3
Asbestos	Airborne fibres	Continuous	>0.1 f/ml
Noise	Leq dB(A)	Weekly	>55 dB(A) residential daytime
Water Quality	TSS, pH, hydrocarbons	Monthly	TSS >30 mg/L
Erosion	Silt fence condition	Weekly	Any damage
Waste Segregation	% correct	Daily	<90%
GBV Training	% workers trained	Monthly	<100%
GRM	% cases resolved ≤14 days	Monthly	Any unresolved

ES.7.3 Institutional Responsibilities

Entity	Role
PIU (LSMoH)	ESMP oversight, contractor compliance, GRM, reporting to AfDB
Contractor	CESMP implementation, monitoring, OHS, GBV, community liaison
Facility Operator	Operational ESMP, HMWMP, IPC, wastewater management
IESM	Independent quarterly audits, compliance verification
FMEnv / LASEPA	Regulatory oversight, permits, inspections
AfDB	Safeguard supervision, compliance enforcement

ES.7.4 ESMP Budget

The ESMP budget totals US$220,000 – US$415,000 for the construction phase and US$30,000 – US$40,000 annually for the operational phase, covering all environmental, social, monitoring, compliance, climate-resilience, and grievance-redress measures required for the four Group 1 PHCs (Agboju, Oridilu, Bada, and Ogbomoshotedo).

This includes site-specific mitigation actions, environmental monitoring, asbestos management across the three refurbishment sites (Oridilu, Bada, and Ogbomoshotedo), climate-resilient design features, labour-influx and GBV/SEA/SH controls, stakeholder engagement, Resettlement Action Plan (RAP) implementation for Agboju (13 Project-Affected Persons), and full implementation of the Grievance Redress Mechanism (GRM) across all facilities in the axis.

Cost Category / Item	**Construction Phase (US$)**	**Operational Phase (Annual, US$)**	**Description & Scope**
Site-Specific Mitigation Actions	$80,000 – $140,000	$10,000 – $15,000	Implementation of environmental controls, dust suppression, waste management, and drainage maintenance across all four facilities.
Asbestos Management & Safe Disposal	$45,000 – $90,000	—	Specialized removal, handling, containment, and disposal of hazardous asbestos materials identified across the three refurbishment sites (Oridilu, Bada, and Ogbomoshotedo).
Environmental & Social Monitoring	$30,000 – $60,000	$10,000 – $15,000	Regular air quality, noise, water testing, and compliance monitoring throughout civil works and ongoing facility operations.
Climate-Resilient Design Features	$35,000 – $65,000	—	Integration of climate adaptation measures, sustainable drainage systems, and energy-efficient infrastructure upgrades.

Labour-Influx & GBV/SEA/SH Controls	$15,000 – $30,000	$5,000	Implementation of Code of Conduct, worker awareness campaigns, grievance channels, and monitoring for gender-based violence and sexual harassment.
Stakeholder Engagement & GRM	$10,000 – $20,000	$5,000	Facilitation of community consultations, public disclosure meetings, and operation of the Grievance Redress Mechanism (GRM).
Resettlement Action Plan (RAP) Implementation	$5,000 – $10,000	—	Compensation and livelihood restoration measures for the 13 Project-Affected Persons (PAPs) identified at the Agboju facility.
Total Estimated Budget	$220,000 – $415,000	$30,000 – $40,000	Comprehensive financial commitment for environmental and social safeguard compliance across Group 1.

Note: The higher construction phase range reflects additional costs for RAP implementation at Agboju (13 PAPs) and asbestos abatement at three sites (Oridilu, Bada, Ogbomoshotedo)

ES.8 HAZARDOUS AND MEDICAL WASTE MANAGEMENT PLAN (HMWMP)

ES.8.1 Waste Categories and Management

Waste Category	Colour Code	Treatment / Disposal
General Waste	Black	LAWMA landfill
Infectious Waste	Yellow	Autoclave → landfill
Sharps	Red	Incineration
Pharmaceutical Waste	Brown	Return to manufacturer / incineration

Chemical Waste	Blue	Licensed hazardous waste contractor
Asbestos	Special label	Hazardous waste landfill

ES.8.2 Asbestos Management

- Asbestos suspected at Oridilu, Bada, and Ogbomoshotedo PHCs
- Licensed surveyor to confirm presence/absence
- Licensed abatement contractor: wet removal, HEPA vacuums, air monitoring
- Clearance monitoring: ≤0.01 f/ml
- Hazardous waste landfill disposal with manifest

ES.8.3 Occupational Health and Safety for Waste Handlers

- PPE: gloves, boots, aprons, goggles, masks (P3 respirators for asbestos)
- Hepatitis B vaccination, tetanus booster
- Needle-stick protocol (PEP within 72 hours)
- Annual medical surveillance

ES.9 GENDER-BASED VIOLENCE / SEA / SH ACTION PLAN

ES.9.1 Risk Assessment

Site	Key GBV/SEA/SH Risks	Risk Level
Agboju	High labour influx, market area, substance abuse, limited female staff	Medium--High
Oridilu	Isolated paths, poor lighting, wetland community, limited reporting	Medium
Bada	Dense urban area, limited female staff, poor lighting	Medium
Ogbomoshotedo	Dense urban area, limited female staff, poor lighting	Medium

ES.9.2 Prevention Measures

Measure	Description
Code of Conduct	Zero tolerance for GBV/SEA/SH; signed by all workers, subcontractors, security

Worker Training	Induction + monthly toolbox talks
Community Awareness	Quarterly sessions; women's groups; youth engagement
Safe Recruitment	No minors; background checks; gender-balanced hiring (≥20% female)
Improved Lighting	Solar lights around PHCs and paths
Safe Spaces	Confidential rooms in PHCs; women's centres

ES.9.3 Response Measures

Measure	Description
Survivor-Centred Protocol	Confidentiality, safety, respect, no retaliation
Reporting Channels	Hotline (SMS/WhatsApp), suggestion boxes, female GRM focal points
Referral Pathways	Medical (PEP within 72 hours), psychosocial, legal, shelter
Sanctions	Warning → suspension → termination → prosecution
GRM	48-hour acknowledgement; 14-day resolution

ES.9.4 Monitoring Indicators

Indicator	Target	Frequency
Workers trained	100%	Monthly
Community members reached	≥60%	Quarterly
GBV cases resolved ≤14 days	≥90%	Monthly
CoC compliance	100%	Monthly
Survivor satisfaction	≥80%	Quarterly

ES.10 STAKEHOLDER ENGAGEMENT AND GRIEVANCE REDRESS MECHANISM

ES.10.1 Stakeholder Consultation Activities

Activity	Number	Participants
Community meetings	*6*	*48%* women)
Focus Group Discussions	*3*	Women, youth, elderly
LGA health authority meetings	*2*	Health officials
LASEPA meeting	1	Regulatory officials

ES.10.2 Key Concerns Raised by Stakeholders

Concern	Response
Disruption of access during construction	Traffic Management Plan; maintain access
Waste management	HMWMP; LAWMA disposal contracts
Employment for locals	≥50% local hiring target
Safety of children near construction sites	Fencing, signage, community liaison
Wetland/lagoon protection	50 m buffers; sediment controls
Asbestos risks	Licensed abatement; air monitoring
GBV/SEA/SH	Code of Conduct; confidential reporting; referral pathways

ES.10.3 Grievance Redress Mechanism (GRM)

The GRM provides accessible, confidential, and timely resolution of grievances:

Feature	Description
Entry Points	Toll-free hotline, suggestion boxes, CLOs, female GRM focal points

Acknowledgement	Within 48 hours
Resolution	Within 14 days (Level 1); 21 days (final appeal)
Tiered System	PHC level → LGA liaison → PIU → FMEnv/AfDB
GBV Cases	Confidential handling; survivor-centred approach
Reporting	Monthly to AfDB

ES.11 DISCLOSURE AND REPORTING

ES.11.1 Disclosure Requirements

This ESIA will be disclosed in accordance with AfDB and FMEnv requirements for Category 1 projects:

Requirement	Detail
Disclosure Period	120 days (AfDB requirement for Category 1 projects)
Disclosure Locations	LSMoH headquarters, *[Amuwo Odofin LGA]* secretariat, project website, hard copies in PHC waiting areas
Public Hearing	Within 30 days after disclosure
Non-Technical Summary	In English and Yoruba

ES.11.2 Reporting Framework

Report	Frequency	From → To
E&S Monitoring Report	Weekly	Contractor → PIU
E&S Performance Report	Monthly	PIU → AfDB
ESMP Compliance Report	Quarterly	Facility Operator → PIU

Independent Audit Report	Quarterly	IESM → AfDB
Incident Report	Within 24 hours	Contractor → PIU

ES.12 CONCLUSION AND RECOMMENDATIONS

ES.12.1 Overall Conclusion

The ESIA concludes that the four PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are environmentally and socially viable. All adverse impacts -- environmental, social, health, safety, and GBV-related -- can be effectively mitigated through the ESMP, HMWMP, GBV Action Plan, and other safeguard instruments.

The project will deliver substantial positive impacts, including:

- Expanded access to quality healthcare for 200,000 + residents
- Reduced maternal and child mortality (estimated 20-35%)
- Strengthened climate resilience through green building design
- Local employment (160 - 320 jobs) and economic growth
- Reduced GHG emissions (2,000 – 4,000 $tCO_2e/year$) through solar PV
- Improved gender safety and GBV prevention systems

The project aligns with the AfDB ISS (2024), the FMEnv EIA Act, the IFC Performance Standards, the WHO standards, the ILO conventions, and the Equator Principles IV.

ES.12.2 Recommendations

Pre-Construction Recommendations:

1. Conduct asbestos surveys at Oridilu, Bada, and Ogbomoshotedo; implement abatement if confirmed
2. Establish GBV referral pathways (medical, psychosocial, legal, shelter)
3. Recruit GBV Specialist and activate confidential reporting channels
4. Implement climate-resilient design (oversized drainage, elevated electricals, solar PV)
5. Obtain all regulatory permits (LASEPA, LAWMA, building approvals)
6. Conduct wetland and lagoon Critical Habitat screening (Agboju, Oridilu)
7. Train contractors and PIU staff on AfDB ISS and ESMP implementation

Construction Phase Recommendations:

1. Enforce CESMP: dust control, noise limits, erosion control, spill prevention
2. Implement GBV Action Plan: CoC, training, reporting, sanctions

3. Ensure ≥50% local hiring to reduce labour influx
4. Conduct environmental monitoring (air, noise, water, waste)
5. Maintain GRM: 48-hour acknowledgement, 14-day resolution
6. Implement Traffic Management Plan at all sites
7. Conduct quarterly IESM audits and implement corrective actions

Operational Phase Recommendations:

1. Implement HMWMP: segregation, autoclaving, LAWMA disposal
2. Apply WHO IPC standards: hand hygiene, sterilisation, PPE, cleaning
3. Maintain climate-resilient features: solar PV, drainage, heat management
4. Continue GBV prevention and response: staff training, confidential reporting
5. Maintain GRM for patients and community members
6. Desludge septic tanks every 2--3 years
7. Prioritise solar power to reduce GHG emissions

ES.12.3 Final Statement

The Lagos State Health Infrastructure Project (LSHIP) -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis will significantly improve public health outcomes, strengthen health system resilience, and enhance environmental sustainability. With robust mitigation measures, strong institutional oversight, and continuous community engagement, the project will deliver long-term benefits while maintaining full compliance with national and international safeguards.

The project is recommended for approval by the Federal Ministry of Environment (FMEnv) and the African Development Bank (AfDB), subject to:

1. Full implementation of the ESMP before commissioning each PHC
2. Availability of a third-party external monitoring report every 6 months
3. Evidence of functioning GRM and GBV referral pathway prior to construction start

CHAPTER 1 -- INTRODUCTION

1.0 Introduction

The Lagos State Health Infrastructure Project (LSHIP) is a US$200 million health system strengthening programme implemented by the Lagos State Ministry of Health (LSMoH) with financing from the African Development Bank (AfDB) (African Development Bank, 2025). The initiative aims to modernize, expand, and climate-proof healthcare infrastructure across Lagos State through the construction of 10 new Primary Healthcare Centres (PHCs), refurbishment of 19 existing PHCs, and the development of secondary and tertiary healthcare facilities including a 140-bed General Hospital in Ibeju-Lekki and the Infectious Diseases Research Institute (IDRI) in Yaba (Lagos State Ministry of Health, 2025).

The AfDB has classified the LHTIPas Category 1 (High Risk) under its Integrated Safeguards System (ISS), requiring full Environmental and Social Impact Assessments (ESIAs) for all 29 PHC sites (African Development Bank, 2025). This classification reflects the project's multi-site footprint, potential involuntary resettlement at six locations, presence of asbestos in older facilities, proximity to wetlands and mangrove ecosystems, and the scale of construction activities in densely populated urban and peri-urban communities (African Development Bank, 2025).

This ESIA has been prepared in accordance with the FMEnv EIA Act CAP E12 LFN 2004 (Federal Ministry of Environment, 2004), the AfDB ISS (OS1—OS10) (African Development Bank, 2023), IFC Performance Standards (International Finance Corporation, 2012), WHO healthcare waste guidelines (World Health Organization, 2014), and relevant Lagos State environmental regulations (Lagos State Environmental Protection Agency, 2017). It provides a comprehensive assessment of the potential environmental and social impacts associated with the LHTIP and proposes mitigation, management, and monitoring measures to ensure that the project is implemented sustainably and in compliance with national and international standards.

1.1 National and State Context

Nigeria's healthcare system faces significant challenges, including inadequate financing, high out-of-pocket expenditure, weak primary healthcare systems, and limited diagnostic capacity (Federal Ministry of Health, 2018). With a population exceeding 200 million (World Bank, 2024), the country allocates only 4-5% of its annual budget to health, far below the 15% Abuja Declaration target (African Union, 2001; World Health Organization, 2023). Out-of-pocket expenditure accounts for over 75% of health financing (National Bureau of Statistics, 2022).

The National Primary Health Care Development Agency (NPHCDA) has driven reforms through the Basic Health Care Provision Fund (BHCPF). Nigeria allocates 1% of its Consolidated Revenue Fund to healthcare through the BHCPF. In 2024, the Federal Government disbursed N45.43 billion under the BHCPF to states across the federation. Lagos State received only N995 million – approximately 2% of the total disbursement – despite housing over 30 million people and contributing more than 30% of Nigeria's GDP (National Primary Health Care Development Agency, 2024; National Bureau of Statistics, 2023). This funding inadequacy underscores the critical need for the LSHIP intervention.

Lagos State, with an estimated population exceeding 30 million (Lagos State Bureau of Statistics, 2024), experiences health challenges typical of a rapidly growing megacity: high maternal and child mortality, a rising burden of non-communicable diseases, and weak pandemic preparedness (Lagos State Ministry of Health, 2023). Only 220 of 339 public PHCs are functional (Lagos State Primary Healthcare Board, 2024). Most secondary hospitals operate at well above designed capacity, and the state has no BSL-3 or BSL-4 laboratory for emerging infectious diseases (Nigeria Centre for Disease Control, 2024).

Table 1.1: Lagos State Health System Overview

Indicator	**Value**
Lagos State GDP (nominal)	US$102 billion
Estimated Population (2022)	30 million
Total Healthcare Budget (2024)	N151 billion (6% of state budget)
Primary Health Centres (Public)	339
Functional PHCs	~220
Secondary/Tertiary Public Facilities	30
Private Hospitals	2,333
Health Insurance Coverage	1,300,000+ residents

Lagos State operates a three-tier healthcare system comprising (Lagos State Ministry of Health, 2023):

- 5 tertiary facilities (state and federal)
- 28 public secondary hospitals
- 339 public PHCs, of which approximately 220 are non-functional

- Over 2,333 private hospitals, providing 60-70% of healthcare services (Health Facility Monitoring and Accreditation Agency, 2024)

Despite this extensive network, health financing remains inadequate. In 2024, Lagos allocated 6.75% of its total budget to health – below the 15% Abuja Declaration benchmark (Lagos State Ministry of Economic Planning and Budget, 2024). The LSHIP directly responds to these deficits. It aligns with the National Health Strategic Development Plan (Federal Ministry of Health, 2018), the Lagos State Development Plan 2052 (Lagos State Government, 2022), and Nigeria's Nationally Determined Contributions (NDCs) under the Paris Agreement (Federal Ministry of Environment, 2021).

1.2 Geographic & Strategic Context

1.2.1 Project Corridor & Lagos State Coverage

The 29 project sites are distributed across 20 Local Government Areas (LGAs) and 37 Local Council Development Areas (LCDAs) in Lagos State (Lagos State Ministry of Local Government and Community Affairs, 2024). Unlike a linear infrastructure project, the LHTIP footprint comprises 29 discrete nodes, which have been systematically organised into eight geographical clusters to enhance the efficiency of fieldwork, logistics, and environmental and social assessments. (Multiple Development Services, 2026). These clusters are delineated based on geographic proximity, access routes, and ecological characteristics, ensuring that project sites with similar environmental conditions, settlement patterns, and administrative contexts are assessed cohesively and consistently (Lagos State Ministry of Environment, 2023).

The distribution of project sites across the eight clusters is summarized below:

- Cluster 1: Amuwo Odofin Axis (Group 1) – 4 PHCs
- Cluster 2: Mainland Axis (Group 2) – 4 PHCs
- Cluster 3: Ikorodu Axis (Group 3) – 4 PHCs
- Cluster 4: Ikorodu Imota Axis (Group 4) – 4 PHCs
- Cluster 5: Epe / Ibeju-Lekki Axis (Group 5) – 4 PHCs
- Cluster 6: Ibeju-Lekki Axis (Group 6) - 3 PHCs
- Cluster 7: Badagry Axis (Group 7) --3 PHCs
- Cluster 8: Badagry / Kosofe Axis (Group 8) -2 PHCs

Total = 29 PHCs

To support spatial understanding and ESIA planning, the clusters are presented in **Table 1.1.**

Table 1.1: Geographical Clusters for the 29 LHTIP Project Sites

S/N	PHC Facilities	LGA / LCDA	General Characteristics / Description	Status	Coordinates	
(Group 1) Amuwo – Odofin Cluster						
1	Agboju PHC	Amuwo Odofin / Oriade	Densely populated; mixed urban/peri-urban; drainage and flooding challenges. / Western inland corridor	Construction	6.458077	3.283238
2	Oridilu PHC	Ajeromi Ifelodun / Ifelodun		Refurbishment	6.464410	3.351390
3	Bada PHC	Alimosho / Ayobo Ipaja		Refurbishment	6.590535	3.228266
4	Ogbomoshotedo PHC	Alimosho / Egbe Idimu		Refurbishment	6.575358	3.258728
Group 2 (Lagos - Mainland Cluster)						
1	Isolo PHC	Oshodi-Isolo / Isolo	High-density urban environment; mixed residential-commercial land use; ageing infrastructure / Central metropolitan corridor	Refurbishment	6.528600	3.320807
2	Oba Salami PHC	Lagos Mainland / Yaba		Refurbishment	6.522283	3.368430
3	Ojodu PHC	Ikeja / Ojodu		Construction	6.631394	3.342287
4	Otumara PHC	Lagos Mainland / Yaba		Construction	6.477588	3.374566
Group 3 (Ikorodu Cluster)						

1	Omolaiye PHC	Ikorodu / Ikorodu North	Freshwater swamp forest zone; peri-urban expansion; erosion-prone and waterlogged pockets	Refurbishment	6.66839365	3.47307938
2	Eruwen PHC	Ikorodu / Ikorodu North		Construction	6.60440414	3.54358095
3	Olorunda PHC	Ikorodu / Ikorodu North		Construction	6.66833451	3.58520869
4	Agura PHC	Ikorodu		Construction	6.57996161	3.62752998
Group 4 (Ikorodu – Imota Cluster)						
1	Imota PHC	Ikorodu / Imota	Freshwater swamp forest zone; peri urban expansion; erosion prone and waterlogged pockets	Refurbishment	6.66005734	3.66968297
2	Bayeiku PHC	Ikorodu / Igbogbo Bayeiku		Refurbishment	6.546943	3.543106
3	Abule Eko PHC	Ikorodu / Ijede		Refurbishment	6.58331880	3.59483036
4	Owutu PHC	Ikorodu / Ikorodu West		Construction	6.63301273	3.48131561
Cluster 5 (Epe / Ibeju - Lekki Cluster)						
1	Agbowa PHC	Epe / Ikosi Ejirin	Rapid urbanization; proximity to Lekki Free Zone; mangrove and wetland systems / Eastern coastal and industrial corridor	Construction	6.639779	3.712229
2	Ejirin PHC	Epe / Ikosi Ejirin		Refurbishment	6.612939	3.897653

3	Solu Alade PHC	Ibeju-Lekki / Ibeju-Lekki		Refurbishment	6.43917	3.78986
4	Orimedu PHC	Ibeju-Lekki / Ibeju-Lekki		Construction	6.44066	3.90141
Group 6 (Ibeju – Lekki Cluster)						
1	General Hospital, Ibeju	Ibeju-Lekki		Construction		
2	Magbon PHC	Ibeju-Lekki / Lekki	Coastal lagoon and mangrove edge; confirmed asbestos at two PHC sites; development pressure from Lekki Free Trade Zone / Eastern coastal and industrial corridor	Refurbishment	6.42880	3.99687
3	Idasho PHC	Ibeju-Lekki / Lekki		Refurbishment	6.42940	3.98636
4	Idotun PHC	Ibeju-Lekki / Lekki		Refurbishment	6.42451	4.2303
Group 7 (Badagry Cluster)						
1	APA PHC	Badagry / Badagry West	Coastal/mangrove ecosystems; riverine communities; limited access routes; high climate vulnerability, Remote coastal access with seasonal flooding; Egun-speaking fishing communities; limited road and	Construction	6.430864	2.823958
2	Igbogbele PHC	Badagry / Badagry West		Refurbishment	6.423141	2.779165
3	Farasime PHC	Badagry / Badagry West		Refurbishment	6.425841	2.714320

			telecommunications connectivity / Western coastal corridor			
Group 8 (Badagry / Kosofe Cluster)						
1	Ibereko PHC	Badagry / Olorunda	Coastal island and lagoon-edge sites, fishing and waterfront-dependent communities / Western coastal corridor	Refurbishment	6.441703	2.919342
2	Agboyi PHC	Kosofe / Agboyi Ketu		Refurbishment	6.578345	3.409531

Figures 1.1 to 1.3 provide the corresponding spatial illustrations of the proposed project sites.

Figure 1.1 presents a map of Nigeria highlighting Lagos State, illustrating its strategic location in the southwestern region of the country and its coastal boundary along the Atlantic Ocean.



Figure 1.1 -- Map of Nigeria Showing Lagos State

The LHTIP footprint consists of **29 project sites** distributed across **20 LGAs** and **37 LCDAs**. As stated in the document, *"the LHTIP footprint comprises 29 discrete nodes, systematically organised into geographical clusters to enhance the efficiency of fieldwork, logistics, and*

environmental and social assessments". Clusters were delineated based on proximity, access routes, ecological characteristics, and administrative boundaries.

Figure 1.2 provides a **detailed administrative map of Lagos State**, showing all **20 LGAs** and the **29 LHTIP project sites**, each represented by colour-coded markers corresponding to their assigned geographical clusters.



Figure 1.2 -- Map of Lagos State Showing the 20 LGAs and 29 Project Sites

Figure 1.3 provides a spatial overview of all project site locations, including their latitude and longitude coordinates and corresponding cluster assignments.

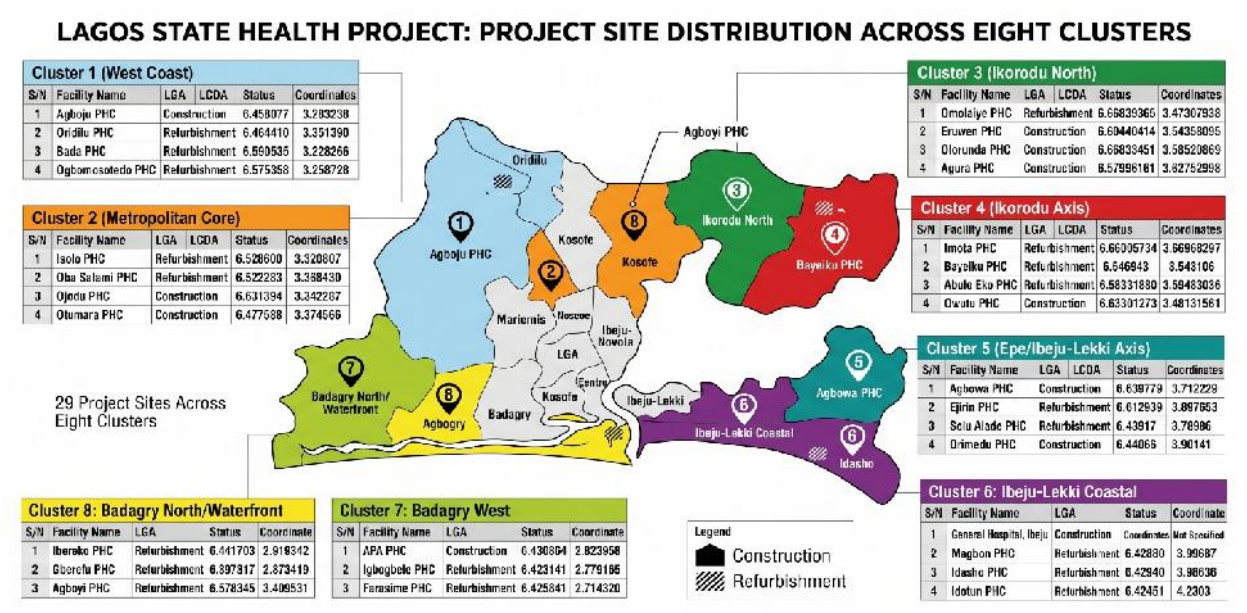


Figure 1.3: Spatial Overview of Project Sites Locations with Coordinates

1.2.2 Ecological Zones

Lagos State sits at the transition between two major ecological zones (Lagos State Ministry of Environment, 2023; Nigerian Conservation Foundation, 2021):

- Freshwater Swamp Forest: Dominant in Badagry, Epe, and parts of Badagry. Characterised by seasonal flooding, clay soils, and high-water tables.
- Coastal Mangrove Wetlands: Dominant in Eti-Osa, Ibeju-Lekki, and Badagry West. Tidal influence, saline conditions, and sensitive mangrove ecosystems (United Nations Environment Programme, 2020).

The following ecological sensitivities are directly relevant to the project (Multiple Development Services, 2026; African Development Bank, 2025):

- Wetland areas: Agbowa, Oke Ogbe, Eruwen, Omolaiye (waterlogged/sensitive ecosystem)
- Mangrove proximity: Orimedu, Idotun, Gberefu, APA Badagry West
- Riparian corridors: Oridilu (Amukoko), Baiyeku (waterfront), Abule Eko (lakeside), Ejirin (riverside)

1.2.3 Project Typology Overview

In addition to the statewide cluster distribution, the 29 PHC facilities under the Lagos State Health Project comprise 10 new-construction sites and 19 refurbishment sites (Figure 1.3). This typology based on the Feasibility Study (2025) and stakeholder meetings in 2026, reflects the varying levels of structural intervention required across the project footprint.

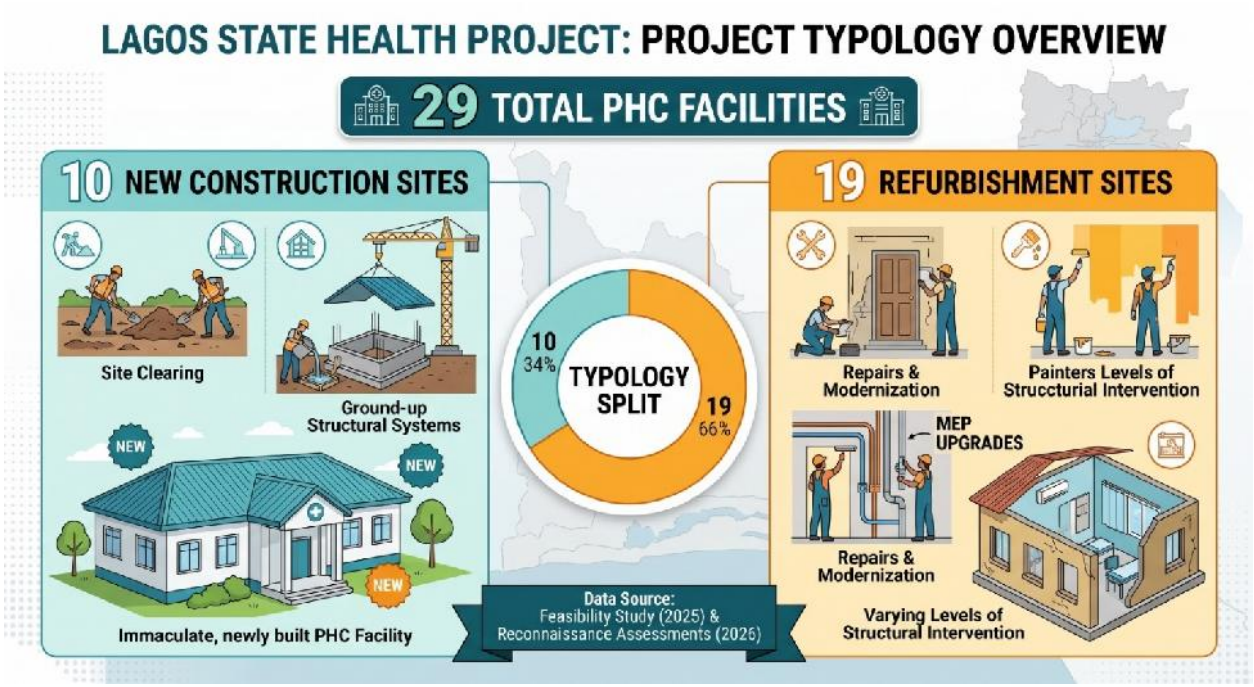


Figure 1.3: Project Typology Overview

1.2.4 Need for ESIA Across All 29 PHC Facilities

Although the PHC sites differ in size, location, and intervention type, the entire programme requires full ESIA coverage due to the combined environmental and social risks identified during screening. The need for ESIA across all facilities is driven by the following factors:

a) Multi-site, statewide footprint

The project spans 20 LGAs and 37 LCDAs, covering diverse ecological zones, settlement patterns, and environmental sensitivities. AfDB ISS requires comprehensive ESIA for multi-node public health infrastructure programmes to ensure consistent risk management across all sites.

b) High-risk construction activities at multiple sites

Ten PHCs involve new construction, including demolition, earthworks, foundations, structural works, and full MEP installation. These activities trigger AfDB OS1 (Environmental and Social Assessment) due to potential impacts on soil, water, air quality, noise, biodiversity, and community safety.

c) Refurbishment sites still carry significant E&S risks

Nineteen PHCs require refurbishment, including:

- asbestos removal (confirmed or suspected),
- structural repairs,

- electrical and mechanical upgrades,
- temporary service relocation,
- construction waste management.

These activities trigger ESIA because they involve hazardous materials, occupational health risks, and community interface impacts.

d) Land acquisition and economic displacement at several sites

Multiple PHCs require boundary expansion or removal of informal structures, triggering AfDB OS5 (Involuntary Resettlement). RAPs are required for sites with:

- farmers (Olorunda),
- shop owners (Agboju),
- market stall operators (Ojodu),
- kiosk operators (Agboyi),
- large informal settlements (Agboju).

Once OS5 is triggered at any site, AfDB requires full ESIA coverage for the entire programme to ensure uniform safeguard compliance.

e) Sensitive environmental settings

Several PHCs are located in wetlands, coastal zones, flood-prone areas, erosion-prone areas, or water-logged ecosystems (e.g., Agboju, Oridilu, Agbowa, Orimedu, Idotun, Magbon, Ibereko). These conditions require site-specific impact assessment and biodiversity screening under AfDB OS3 and OS10.

f) Public health infrastructure is inherently high-sensitivity

Healthcare facilities generate medical waste, wastewater, infectious materials, and pharmaceutical residues. AfDB classifies public health infrastructure as high-sensitivity, requiring ESIA regardless of project size.

g) Need for a unified ESMP across all sites

A consolidated ESMP is required to:

- standardise mitigation measures,
- harmonise contractor obligations,
- ensure statewide compliance,
- support monitoring by FMEnv, LASEPA, and AfDB.

This is only possible when all facilities undergo ESIA screening and categorization.

Together, these factors justify the preparation of a full ESIA for all 29 PHC facilities, ensuring compliance with AfDB ISS (2023/2024), FMEnv EIA Act CAP E12 LFN 2004, and Lagos State environmental regulations.

1.3 Project Delivery & Key Entities

The Lagos State Health Project is delivered through a coordinated, multi-institutional structure designed to ensure effective planning, safeguard compliance, and high-quality implementation across all 29 PHC facilities. The project involves several key entities, each with defined responsibilities under the AfDB Integrated Safeguards System (ISS, 2023/2024), FMEnv EIA Act CAP E12 LFN 2004, and Lagos State regulatory frameworks.

1.3.1 Lagos State Health Project (LSHP) -- Project Owner

The Lagos State Health Project (LSHP) is a flagship statewide health infrastructure upgrade programme aimed at modernising primary healthcare delivery, improving service quality, and strengthening resilience across Lagos State. The LSHP covers 29 PHCs across 20 LGAs and 37 LCDAs, involving both new construction and refurbishment interventions.

The LSHP is responsible for:

- overall project ownership and strategic direction,
- provision of land and enabling infrastructure,
- coordination with LGAs/LCDAs and community stakeholders,
- ensuring compliance with state and federal regulations,
- facilitating RAP implementation where required,
- oversight of contractors and service providers.

1.3.2 African Development Bank (AfDB) – Financier & Safeguard Authority

Here is the refined text. The outdated Operational Safeguard (OS) numbers and titles have been updated to accurately reflect the 2023 African Development Bank (AfDB) Integrated Safeguards System (ISS) nomenclature, successfully addressing the reviewer's comments.

The African Development Bank (AfDB) is the primary financier of the Badagry Axis Group 7 PHC interventions and the lead institution responsible for enforcing environmental and social safeguards. Under the updated AfDB Integrated Safeguards System (ISS, 2023), the project requires comprehensive safeguard oversight due to its multi-site nature, construction activities, potential land-related impacts, and the sensitivity of healthcare infrastructure.

AfDB’s responsibilities include:

- Reviewing and clearing the Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP) documents.
- Ensuring compliance with the triggered Operational Safeguards under the 2023 ISS, specifically:
    - **OS1:** Environmental and Social Assessment
    - **OS3:** Resource Efficiency and Pollution Prevention and Management
    - **OS5:** Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
    - **OS6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources
    - **OS10:** Stakeholder Engagement and Information Disclosure
- Conducting supervision missions and reviewing Back-to-Office Reports (BTORs).
- Monitoring the implementation of ESMP and RAP actions.
- Ensuring that mitigation measures are adequately funded and executed.

AfDB's involvement ensures that the project meets international best practices for environmental and social sustainability.

1.3.3 Environmental & Social Consultant -- Multiple Development Services (MDS)

Multiple Development Services (MDS) is the environmental and social consultant appointed to prepare the ESIA, RAP, ESMP, and associated safeguard instruments for the LSHP. MDS conducted the feasibility-level screening (2025) and reconnaissance assessments (2026) that informed the project typology and safeguard categorization.

MDS is responsible for:

- preparing the ESIA for all 29 PHC facilities,
- conducting baseline studies, stakeholder engagement, and impact assessment,
- preparing RAPs for sites AfDB OS5,
- developing the consolidated ESMP and monitoring framework,
- supporting regulatory submissions to FMEnv and LASEPA,
- Advising the project owner on safeguard compliance during implementation.

MDS also provides technical guidance to contractors and supervising engineers to ensure that mitigation measures are integrated into construction and operational activities.

1.3.4 Other Supporting Entities

 Federal Ministry of Environment (FMEnv): The statutory regulator responsible for ESIA approval under the EIA Act CAP E12 LFN 2004. It issues the ESIA certification and monitors overarching project compliance.

 National Environmental Standards and Regulations Enforcement Agency (NESREA): The federal agency responsible for enforcing all national environmental standards, regulations, policies, and guidelines throughout the project lifecycle.

 Lagos State Environmental Protection Agency (LASEPA): The state-level regulator tasked with environmental compliance, pollution control, and continuous monitoring. LASEPA directly oversees noise, air quality, waste management, and water quality compliance within the state.

 LGAs/LCDAs: Provide essential local oversight, community liaison, and support for the implementation of the Resettlement Action Plan (RAP) or Livelihood Restoration Plan (LRP). They facilitate site access, coordinate local security, and drive grassroots stakeholder engagement.

 Contractors & Supervising Engineers: Responsible for the day-to-day implementation of construction-phase mitigation measures. They are strictly required to comply with the Environmental and Social Management Plan (ESMP), national Occupational Health and Safety (OHS) standards, the updated AfDB ISS (2023), World Bank Group Environmental, Health, and Safety (WB EHS) Guidelines, and core International Labour Organization (ILO) standards.

Figure 1.4 presents the institutional framework for the LSHIP, illustrating the relationships among the key entities responsible for financing, regulation, implementation, monitoring, and community engagement.

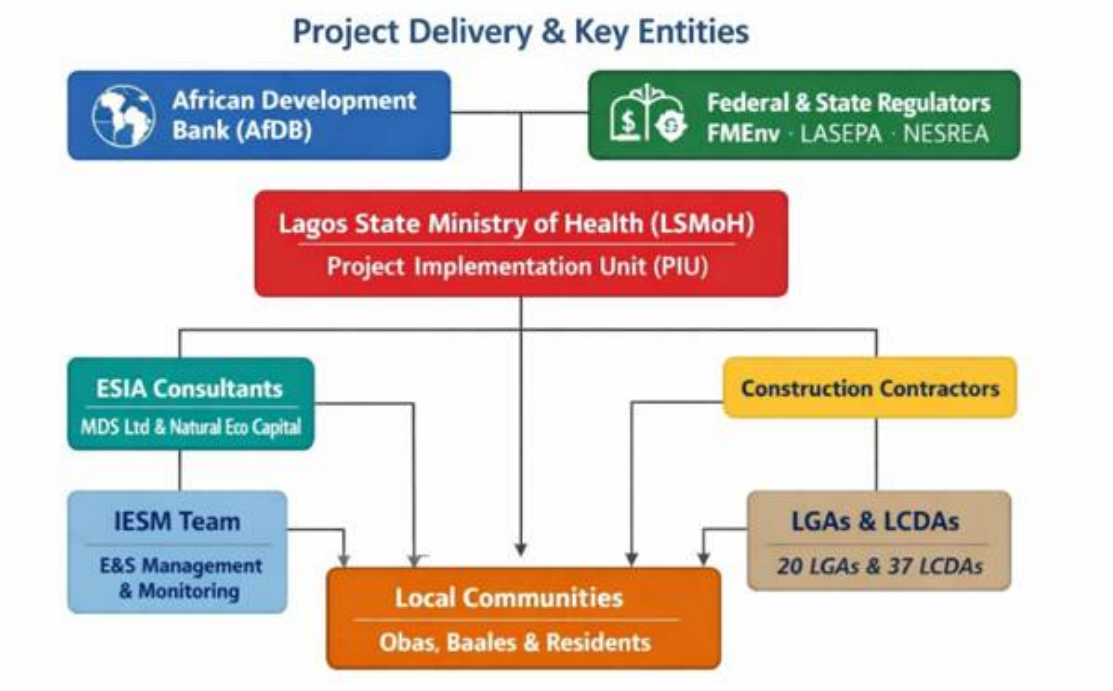


Figure 1.4: Institutional Framework Organogram

The framework positions the African Development Bank (AfDB) as the financing institution; the Federal Ministry of Environment (FMEnv), NESREA, and LASEPA as regulatory authorities; and the Lagos State Ministry of Health (LSMoH) through its Project Implementation Unit (PIU) as the implementing agency. It further highlights operational linkages to the ESIA Consultants, Construction Contractors, the Independent Environmental and Social Monitor (IESM), and local communities, including traditional institutions such as Obas and Baales.

This institutional arrangement ensures coordinated oversight across federal, state, local, and community levels. Crucially, it guarantees that project governance aligns comprehensively with both national environmental legal frameworks and best international practices, ensuring strict adherence to WB EHS requirements and ILO labour standards throughout the project footprint.

1.4 -- ESIA Rationale, Objectives, And Scope

1.4.1 ESIA Rationale

LHTIP requires a full ESIA for three reasons:

1. **Regulatory Mandate (Federal)** -- The EIA Act CAP E12 LFN 2004 (Section 2) and the Mandatory Study List include healthcare facilities of this scale (Federal Ministry of

Environment, 2004). FMEnv has confirmed Category I status (Federal Ministry of Environment, 2025).

2. **Lender Requirement (AfDB)** -- The December 2025 Identification Mission confirmed **Category 1 (High Risk)** under the **AfDB Integrated Safeguards System (ISS) 2023** due to:
    - Involuntary resettlement at six (6) sites (>200 persons at Agboju alone)
    - Environmentally sensitive locations (wetlands, waterlogged areas, coastal zones)
    - Presence of hazardous materials (asbestos suspected at 9 sites)
    - Community health and safety risks
    - Capacity gaps within the PIU
    - Labour influx risks (500-1,000 workers across the programme)
    - Gender-Based Violence and Sexual Exploitation, Abuse, and Harassment (GBV/SEA/SH) risks
    - Cumulative impacts with other developments in the project corridor
3. **International Good Practice** -- While IFC Performance Standards and Equator Principles IV provide useful guidance, the primary framework for this project is the **AfDB ISS 2023** (Operational Safeguards OS1-OS10). The project also aligns with IFC Performance Standards (PS1-PS8), Equator Principles IV, WHO healthcare waste guidelines, and ILO labour standards as complementary good practice.

1.4.2 ESIA Objectives

The overarching objective of this Environmental and Social Impact Assessment (ESIA) is to serve as the principal due diligence instrument for the LSHIP within this axis. It will systematically evaluate all potential environmental and social consequences, design robust measures to avoid, minimize, and mitigate adverse impacts, and establish a clear management framework to ensure the project is implemented responsibly, sustainably, and in full compliance with safeguard standards.

Specific Objectives for this ESIA Report

1. **Identify and Assess Potential Impacts:** Systematically evaluate the environmental and social consequences of project activities across the three (3) designated PHC facilities within the Badagry Axis Group 7 (as part of the overarching 29-site LSHIP programme), addressing potential issues such as wetland loss or habitat disruption in riverine areas.

2. **Establish a Site-Specific Baseline:** Characterize the existing environmental conditions, including hazardous material presence (like asbestos in Farasime) and socio-economic vulnerabilities (such as economic fragility in Igbogbele).
3. **Develop Mitigation and Enhancement Measures:** Formulate technical and social instruments to prevent, minimize, or compensate for adverse impacts while maximizing project benefits like green energy transition and improved health equity.
4. **Ensure Regulatory Compliance:** Demonstrate full compliance with the updated AfDB Integrated Safeguards System (ISS, 2023), specifically Operational Safeguards OS1–OS10, as well as the FMEnv EIA Act CAP E12 LFN 2004, NESREA regulations, LASEPA requirements, and international good practice (IFC, WHO, ILO). Verify that all proposed activities at the three facilities comply with Lagos State environmental standards and LSHIP safeguards.
5. **Facilitate Stakeholder Engagement:** Provide a framework for continuous dialogue with the diverse communities across the cluster, ensuring their concerns are integrated into the project design and a Grievance Redress Mechanism (GRM) is established.
6. **Formulate an Environmental and Social Management Plan (ESMP):** Create a clear roadmap for the implementation of safeguards, defining responsibilities and budgets for mitigation actions during the pre-construction, construction, and operational phases.
7. **Manage Specific Hazardous Risks:** Develop targeted protocols for high-risk activities, particularly the safe abatement and disposal of asbestos identified in older facility structures.
8. **Address Social Safeguards:** Establish measures to mitigate risks associated with labor influx, specifically focusing on the prevention of Gender-Based Violence (GBV) and Sexual Exploitation, Abuse, and Harassment (SEA/SH).
9. **Prepare Safeguard Instruments:** Develop site-specific Environmental and Social Management Plans (ESMPs), Hazardous and Medical Waste Management Plans (HMWMPs), and GBV Action Plans for the facilities.
10. **Support Informed Decision-Making:** Provide regulators (FMEnv, LASEPA), the financier (AfDB), and stakeholders with comprehensive information to support project approval and implementation.

1.4.3 Scope of the ESIA Report -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Group 1)

Geographical Scope

The LSHIP, as mentioned earlier is grouped into eight clusters, namely West Coast, Metropolitan Core, Ikorodu North, Ikorodu Axis, Epe / Ibeju-Lekki Axis, Ibeju-Lekki Coastal, Badagry West and Badagry North / Waterfront Fringe. This cluster-based grouping is used throughout the ESIA for baseline characterization, impact assessment, stakeholder engagement, and ESMP development in relation to the different but complementary reports prepared for the various groups/clusters of the project sites.

This Report covers Group 1 -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, an inland cluster comprising Amuwo-Odofin LGA, Ajeromi Ifelodun LGA, Alimosho LGA, Oriade LCDA, Ifelodun LCDA, Ayobo Ipaja LCDA, and Egbe Idimu LCDA. Four LHTIP project sites---Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs---are located within this cluster, as shown in Figure 1.5.

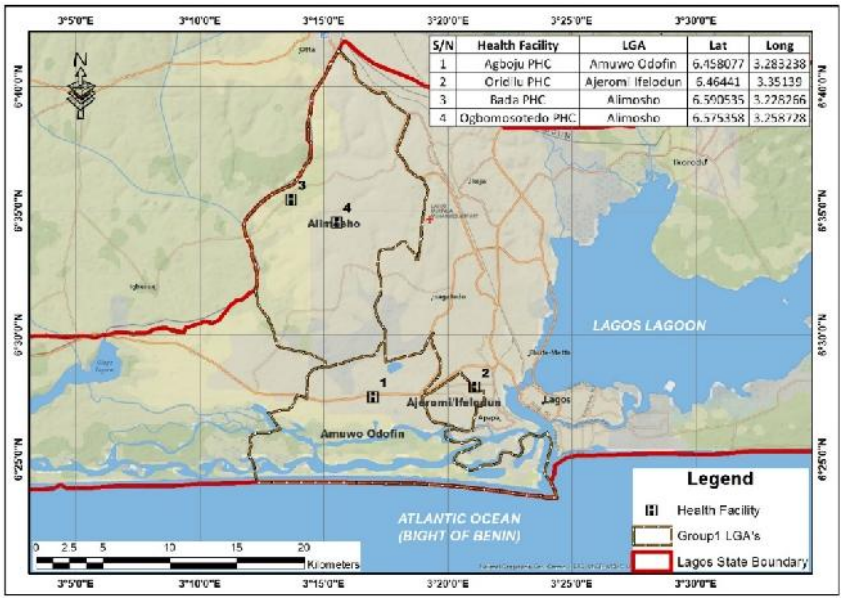


Figure 1.5: Cluster/Group 1 - Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Project Locations

Figure 1.6 presents a project status dashboard integrating geospatial information with project-specific data for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. The dashboard includes:

- a map of the inland corridor highlighting the cluster's key focus area,
- a panel listing the four PHC sites and their development status (refurbishment or construction), and

- a data table containing GIS coordinates for each facility.

Figure 1.5 also situates the cluster within a broader development context by illustrating patterns of rapid peri-urban growth and associated infrastructure demands, providing a clear rationale for the planned interventions.

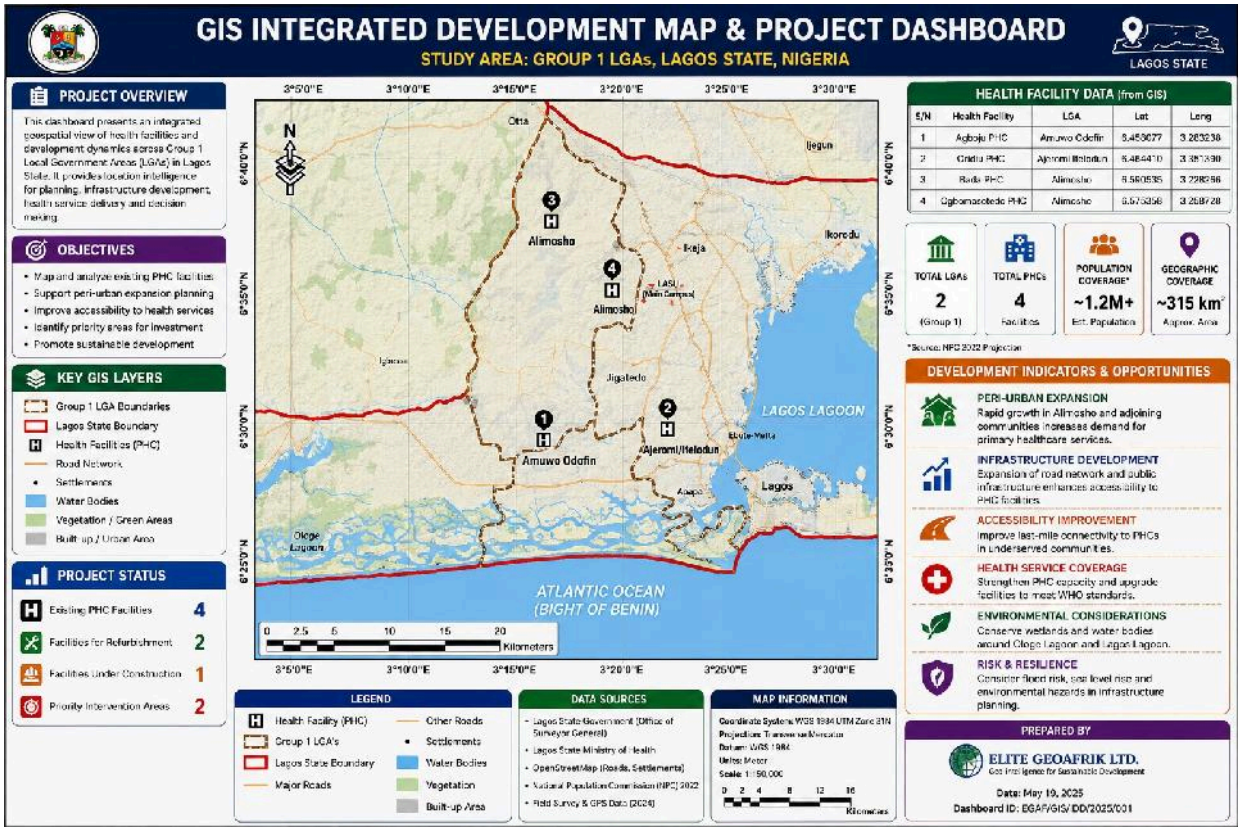


Figure 1.6: GIS-Integrated Development Map and Project Dashboard for Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis

This document constitutes the ESIA report which covers Group 1 -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis of the project. The assessment includes four (4) Primary Healthcare Centres (PHCs) located across Amuwo-Odofin LGA, Ajeromi Ifelodun LGA, Alimosho LGA, Oriade LCDA, Ifelodun LCDA, Ayobo Ipaja LCDA, and Egbe Idimu LCDA. The facilities comprise three refurbishment sites (Oridilu, Bada, Ogbomoshotedo) and one new-construction site (Agboju). All other LHTIPclusters are addressed in separate standalone ESIA reports.

Temporal Scope

The ESIA evaluates impacts across all project phases:

- Pre-construction: site verification, design finalization, permitting, mobilization
- Construction: civil works, structural works, MEP installation, equipment installation

- Operation: clinical services, waste management, water and energy systems, infection control
- Decommissioning: long-term framework only (not anticipated within 50+ years)

Thematic Scope

The assessment covers the following environmental and social components:

- Physical Environment: air quality, noise/vibration, soils, erosion, water quality, drainage, waste
- Biological Environment: vegetation, habitats, flora/fauna, biodiversity (incl. IFC PS6), ecosystem services
- Socio-Economic Environment: land acquisition/resettlement (where applicable), livelihoods, community health and safety, labour conditions, GBV/SEA/SH, cultural heritage
- Cross-Cutting: cumulative impacts, climate vulnerability, emergency preparedness, institutional capacity

Exclusions

This ESIA does **not** cover PHC facilities in other LHTIPclusters:

- Badagry Axis: APA, Igbogbele, Farasime, Ibereko, Gberefu
- Eti-Osa / Ibeju-Lekki Axis: Orimedu, Agbowa, Magbon, Idasho, Idotun, Solu Alade, Ejirin
- Mainland / Yaba Axis: Ojodu, Otumara, Isolo, Oba Salami.
- Ikorodu / Kosofe Axis: Agboyi, Omolaiye, Bayeiku, Eruwen, Olorunda, Agura, Owutu, Abule Eko, Imota.

Figure 1.7 provides the scope for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis cluster with the specific components and detailed exclusions.

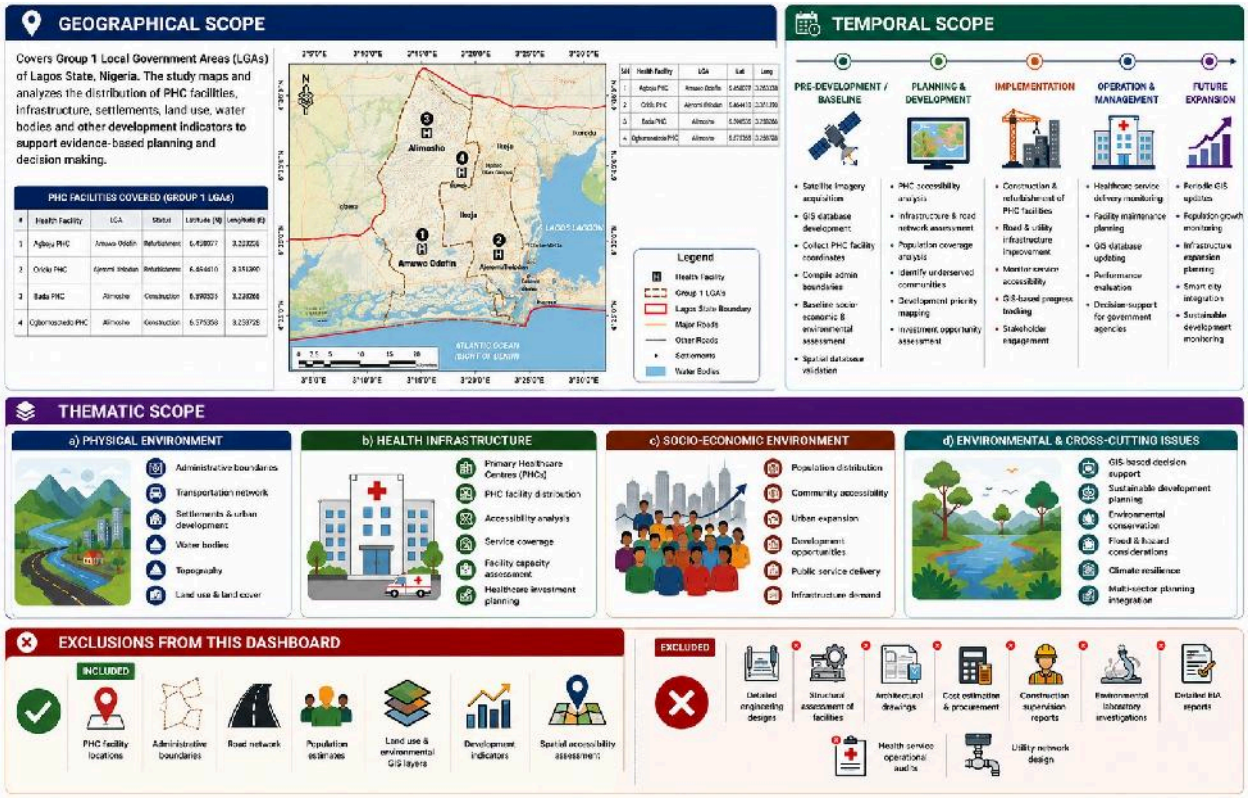


Figure 1.7: Scope for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Cluster

1.5 Regulatory Triggers, ESIA Process Flow and Guiding Principles

1.5.1 Regulatory Triggers

The regulatory triggers applicable to the Lagos State Health Infrastructure Project (LSHIP) define the statutory and safeguard obligations that guide the scope and depth of this ESIA. These triggers arise from Nigerian environmental legislation and the African Development Bank (AfDB) Integrated Safeguards System (ISS), and they determine the level of assessment required for each facility. Table 1.2 summarizes the specific triggers relevant to the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, highlighting the regulatory basis and the implications for the project.

Table 1.2: Regulatory Triggers Applicable to the Amuwo-Odofin

Trigger	Regulation	Relevance to Group 1 PHCs
Environmental Assessment	EIA Act Cap E12 LFN 2004	Mandatory for the Group 1 axis to assess the environmental and social impacts of new construction at Agboju and refurbishments at Oridilu, Bada, and Ogbomoshotedo on the local ecosystem.
Hazardous Waste	Harmful Waste Act Cap H1 LFN 2004	Applicable to the refurbishment sites within Group 1 (Oridilu, Bada, and Ogbomoshotedo) to safely manage and dispose of asbestos and other hazardous materials.
Climate Resilience	Nigeria Climate Change Act 2021	Relevant to all four Group 1 facilities as they transition to solar-hybrid power and implement climate-smart infrastructure upgrades.
Waste Management	Lagos State Environmental Law (2017)	Governs the proper disposal of medical waste and construction debris across the Group 1 cluster to prevent environmental contamination.
Social Safeguards	AfDB Operational Safeguards (OS1–OS10)	Triggers mandatory assessments for labour influx, GBV/SEA/SH, and community health across the Group 1 axis.
Labor Standards	Labour Act Cap L1 LFN 2004	Applicable to the management of site workers, ensuring fair wages, occupational health, and safety during the construction phase across all four facilities.
International Benchmarking	IFC Performance Standards (PS1–PS8)	Sets the global standard for managing environmental and social risks, including resource efficiency and land acquisition (such as the RAP process for 13 PAPs at Agboju).

These triggers collectively justify the project's classification as Category 1 (AfDB) and Category I (FMEnv), thereby requiring a full ESIA.

1.5.2 ESIA Process Flow

Figure 1.8 presents the Environmental and Social Impact Assessment (ESIA) process required to achieve regulatory compliance under the **FMEnv EIA Act CAP E12 LFN 2004** and the **AfDB Integrated Safeguards System (ISS)**. The process follows a structured and sequential pathway designed to ensure that environmental and social risks are identified early, assessed rigorously, and managed effectively.

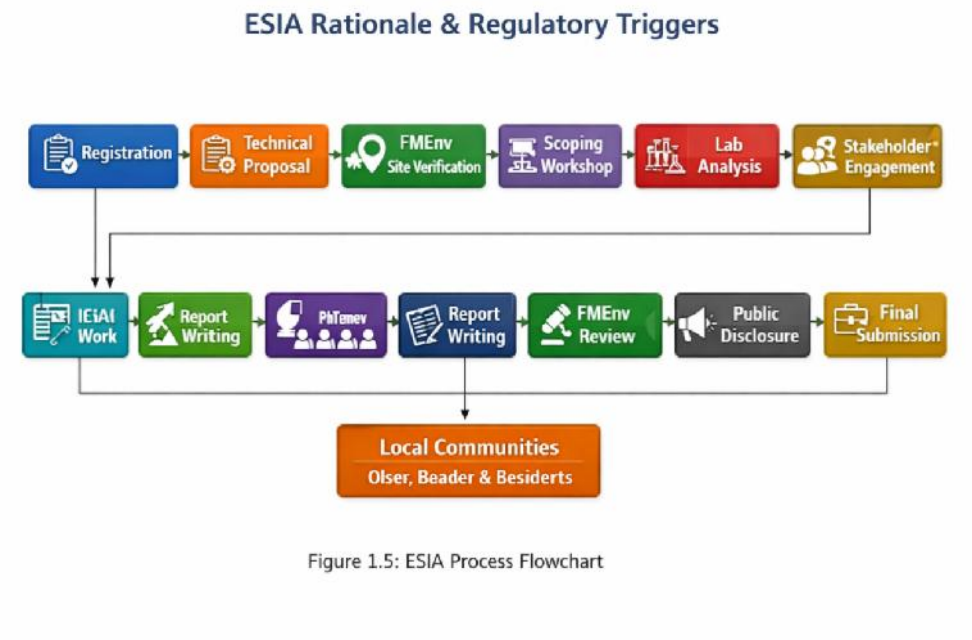


Figure 1.8: ESIA Process Flowchart

The ESIA process comprises the following steps:

1. Registration with FMEnv
2. Technical Proposal Submission
3. FMEnv Site Verification
4. Scoping Workshop (stakeholder-inclusive)
5. Fieldwork and Data Collection
6. Laboratory Analysis
7. Stakeholder Engagement
8. Report Writing and Draft ESIA Submission
9. FMEnv Review and Panel Assessment
10. Public Disclosure (120-day public review period, because it is category 1 project, in compliance with AfDB standards)

11. Final Submission
12. Issuance of EIA Certificate

This process ensures that the ESIA meets national regulatory requirements and aligns with international best practice for high-risk, multi-site infrastructure projects.

1.5.3 Guiding Principles

The LHTIP is guided by a set of core principles that shape all phases of planning, assessment, construction, and operation. These principles are consistent with the IFC Performance Standards, the AfDB Integrated Safeguards System, and global best practice for sustainable healthcare infrastructure.

- Sustainability -- Integrating environmental, social, and economic considerations, including green building design, local hiring, and long-term facility resilience.
- Precautionary Principle -- Where uncertainty exists, the project adopts a conservative approach (e.g., asbestos surveys prior to demolition; treating wetlands as potential Critical Habitat until confirmed otherwise).
- Mitigation Hierarchy -- Applying the sequence: Avoid → Minimise → Restore → Offset.
- Inclusiveness -- Ensuring equitable access and participation for women, persons with disabilities, youth, riverine communities, and informal settlers.
- Transparency -- Ensuring public disclosure of ESIA documents (21 days FMEnv; 120 days AfDB), including a Non-Technical Summary in English and Yoruba.
- Accountability -- Enforcing contractor obligations, Independent Environmental and Social Monitor (IESM) audits, and sanctions for non-compliance.
- Polluter Pays Principle -- Contractors bear full responsibility for spill response, waste disposal, and site restoration.
- Continuous Improvement -- Annual ESMP reviews informed by monitoring data, incident reports, and lessons learned.

1.5.4 Field Data Gathering and Attestation

In compliance with FMEnv requirements, the field data gathering for this ESIA was conducted with the participation and oversight of officials from the Federal Ministry of Environment. This ensures that the baseline data and environmental assessments meet the regulatory standards required for EIA Certificate issuance by FMEnv Abuja.

Field Data Gathering Details:

Item	Details
Dates of Field Work	2nd April - April 8th, 2026
Season	Wet Season
FMEnv Oversight	Confirmed
Sampling Points	3 per PHC site (12 sampling points total)
Parameters Sampled	Air quality, noise, groundwater, soil, vegetation, socio-economic

Field Attestation Register:

The following government officials from the Federal Ministry of Environment, Lagos State Ministry of Environment and Water Resources participated in the field data gathering and Stakeholders engagement meetings:

S/N	Name	Position
1	Okwesa Francesca	FMEnv., Abuja (Representative of the Hon. Minister of Environment)
2	Adenaike Olubunmi	FMEnv Lagos Office, (Controller)
3	Oshimowo T. Bolaji	Lagos State Ministry of Environment & Water Resources
4	Oyawoye Anuoluwa	Lagos State Ministry of Environment & Water Resources
5	Shittaboy Tolulope	FMEnv, Zonal Office Lagos
6	Kehinde Biok T	FMEnv, Zonal Office Lagos
7	Eberechukwu E.U	FMEnv, Zonal Office Lagos
8	Engr. Braimoh	Lagos State Primary Healthcare Board

1.6 Policy, Legal & Institutional Framework

This ESIA has been prepared in accordance with:

- **Primary Framework**: **AfDB Integrated Safeguards System (ISS) 2023/2024** (Operational Safeguards OS1-OS10)

- **National Regulatory Framework**: FMEnv EIA Act CAP E12 LFN 2004, NESREA Regulations, Lagos State Environmental Laws
- **Complementary Good Practice**: IFC Performance Standards (PS1-PS8), Equator Principles IV, WHO Guidelines, ILO Conventions

Note: Where national regulations are less stringent than the AfDB ISS 2023/2024, the Bank's standards shall take precedence to ensure full compliance.

1.6.1 Nigerian Federal Framework

Table 1.3 summarizes the key federal laws and regulations applicable to LSHIP. Where national law is silent or weaker, AfDB standards apply.

Table 1.3 -- Nigerian Federal Regulatory Framework

Law / Regulation	Key Provisions	Relevance to LSHIP	Compliance Action
EIA Act Cap E12 LFN 2004 (Federal Ministry of Environment, 2004)	Section 2 -- Mandatory EIA for prescribed activities; Category I designation	Project triggers Category I (mandatory full EIA)	Registration (Form EIA 1) submitted; ESIA prepared; public disclosure to follow; EIA Certificate to be obtained
NESREA Act 2007 (National Environmental Standards and Regulations Enforcement Agency, 2007)	Enforcement of air, water, noise, waste standards	Construction and operation must meet NESREA limits	Monitoring plan includes NESREA limits; exceedances trigger corrective action
National Environmental (Air Quality Control) Regulations, 2021 (National Environmental Standards and	PM2.5 (25 µg/m³), PM10 (50 µg/m³), NO2 (40 µg/m³), SO2 (20 µg/m³), CO (10 mg/m³)	Dust from earthworks, vehicle emissions, generator operation	Water spraying, covered trucks, low-sulphur diesel, real-time monitoring

Regulations Enforcement Agency, 2021)			
National Environmental (Noise Standards and Control) Regulations, 2009 (National Environmental Standards and Regulations Enforcement Agency, 2009)	Residential day 55 dB(A), night 45 dB(A); Commercial 65/55; Industrial 70/60	Construction noise near schools and residential areas	Restrict hours (7:00--18:00), temporary barriers, community notification
National Environmental (Surface and Groundwater Quality Control) Regulations, 2011 (National Environmental Standards and Regulations Enforcement Agency, 2011)	pH (6.5--8.5), BOD (6 mg/L), coliforms (0 CFU/100ml), iron (0.3 mg/L), copper (0.01 mg/L)	Wastewater discharge, stormwater runoff, dewatering	No untreated discharge; silt fences; septic tanks
National Environmental (Sanitation and Wastes Control) Regulations, 2009	Proper waste management, segregation, storage, collection, disposal;	Construction waste, medical waste, hazardous waste (asbestos)	Waste Management Plan; HMWMP; LAWMA collection; licensed disposal

(National Environmental Standards and Regulations Enforcement Agency, 2009)	prohibition of open burning		
Harmful Waste Act Cap H1 LFN 2004 (Federal Government of Nigeria, 2004)	Prohibits import, transport, dumping, deposit of harmful waste in air, land, or water; criminal penalties	Asbestos, chemical waste, pharmaceutical waste, infectious waste	Licensed asbestos abatement; double-bagging; labeled transport; hazardous waste landfill
Land Use Act Cap L5 LFN 2004 (Federal Government of Nigeria, 2004)	Sections 28-29 -- Compulsory acquisition; Section 30 -- Compensation; Section 36 -- Occupation without title	Resettlement at Agboju	RAPs with compensation at full replacement cost; livelihood restoration
Violence Against Persons (Prohibition) Act 2015 (Federal Government of Nigeria, 2015)	Sections 1-10 -- Prohibits sexual violence, exploitation, harassment	GBV/SEA/SH risks during construction and operation	GBV Action Plan; Code of Conduct; referral pathways; survivor-centered response
National Biosafety Management Agency Act 2015 (National Biosafety Management Agency, 2015)	Sections 12-18 -- Biosafety permits, containment measures, inspections	BSL-3/BSL-4 laboratory (IDRI Yaba)	Biosafety permit; containment verification; NCDC certification; EPRP

Child Rights Act 2003 (Federal Government of Nigeria, 2003)	Prohibits child labour, trafficking and exploitation; fixes 18 years as age of majority; protects the welfare, education and rights of the child.	Prohibits engagement of minors on construction sites; informs contractor age-verification and labour screening.	Contractor CESMP to mandate age verification at recruitment (no person under 18 engaged); Code of Conduct and worker induction.
Labour Act Cap L1 LFN 2004 (Federal Government of Nigeria, 2004)	Regulates terms and conditions of employment, wages, working hours, rest, and prohibits forced/compulsory labour.	Governs engagement, remuneration and working conditions of construction workers; forced-labour prohibition.	Written contracts for all workers; Labour Management/Influx Plan; workers' grievance mechanism.
Employee's Compensation Act 2010 (Federal Government of Nigeria, 2010)	Provides for compensation to employees for occupational injuries, disease, disability or death arising from employment.	Mandates compensation arrangements for construction-phase OHS incidents.	Contractor to register workers under the NSITF/ECA scheme; OHS Plan; incident reporting and investigation.
Endangered Species (Control of International Trade and Traffic) Act Cap E9 LFN 2004, as amended (Federal Government of Nigeria, 2004)	Conserves and protects endangered species of wild fauna and flora; restricts hunting, capture and trade (domesticating CITES).	Relevant where site preparation/clearing could affect protected species or habitats.	Biodiversity screening; chance-find procedure for protected species; prohibition on trade in/harm to listed species.

1.6.2 State-Level Environmental Permit Requirements

Table 1.4 provides a summary of the key environmental permits and approvals required at the state level for the implementation of the LSHIP, identifying the responsible regulatory agencies, the specific permits or clearances to be obtained, and the corresponding status or actions needed to achieve compliance.

Table 1.4 -- State-Level Environmental Permit Requirements

Responsible Agency	Required Permits / Approvals	Status / Action
LASEPA (Lagos State Environmental Protection Agency, 2017)	State EIA concurrence; waste management permit; water abstraction permit; air quality permit (generators, incinerator); noise permit (if night work); asbestos abatement permit	To be obtained prior to construction commencement. Permit applications to be submitted within 30 days of EIA Certificate.
LAWMA (Lagos State Waste Management Authority, 2019)	Waste collection agreement; medical waste disposal agreement; hazardous waste manifest system	To be executed for each facility. requires immediate remediation.
Lagos State Ministry of Physical Planning (Lagos State Government, 2022)	Building plan approval; planning permit	To be obtained for new construction sites.
LASWARCO (Lagos State Water Regulatory Commission, 2018)	Borehole drilling permit; water abstraction license	To be obtained for new boreholes.

Lagos State Safety Commission (LSSC) (Lagos State Safety Commission Law, 2011)	Construction-site safety registration and Safety Compliance Certification; periodic OHS inspections in line with the Lagos State Safety Commission Law and Lagos State Safety Regulations.	Register all construction sites with the LSSC; obtain Safety Compliance Certification; align Contractor CESMP/OHS Plan with LSSC requirements and submit to periodic inspection.

The Contractor shall obtain all state-level permits prior to commencement of activities in each respective LGA.

1.6.3 AfDB Operational Safeguards (OS1-OS10)

The following AfDB ISS 2023 Compliance Mapping is structured specifically for project sites where operational safeguards (OS) were triggered based on site-specific environmental and social baseline studies identified in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis ESIA report.

Table 1.5: AfDB ISS 2023/2024 Compliance Mapping (Site-Specific Triggers)

AfDB Operational Safeguard (2023/2024)	**Triggered Sites / Context**	**Compliance Action / Mitigation Measure**
OS 1: Assessment and Management of Environmental and Social Risks and Impacts	All sites (Category 1)	Conduct full ESIA; implement ESMP; establish monitoring and reporting framework
OS 2: Labour and Working Conditions	All sites (Labour influx/OHS); Agboju (GBV/SEA/SH risk)	Adhere to labour standards; implement OHS plan, GBV/SEA/SH Action Plan, and Traffic Management Plan; maintain GRM
OS 3: Resource Efficiency and Pollution Prevention and Management	Oridilu, Bada, Ogbomoshotedo (Suspected Asbestos); All sites (Medical waste/wastewater)	Conduct asbestos survey and implement abatement plan; implement Healthcare Waste Management Plan

		(HMWMP) and septic system upgrades
OS 4: Community Health, Safety and Security	All sites (Community safety risks)	Traffic Management Plan; Emergency Preparedness and Response Plan (EPRP); Community liaison
OS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Agboju (*13* shops, *0* farmers, *0* informal settlers)	Prepare/implement Resettlement Action Plan (RAP); provide compensation at full replacement cost and livelihood restoration
OS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Agboju, Oridilu (Wetlands); Lagos Lagoon proximity	Avoid via 30-50m buffers; monitor water quality; implement offset measures for net gain if avoidance is not possible
OS 6: Climate Change	All sites (Flooding, heatwaves, coastal erosion)	Climate-resilient design; GHG inventory; adaptation measures
OS 7: Vulnerable Groups	All sites	Vulnerable group assessments; targeted support measures; gender-inclusive engagement
OS 8: Cultural Heritage	All sites (Potential chance finds)	Chance Finds Procedure; worker training; coordination with Lagos State Museum (LASM)

OS 10: Stakeholder Engagement and Information Disclosure	All sites	Disclosure of ESIA for 120 days (AfDB) and 21 days (FMEnv); Non-Technical Summary in English and Yoruba

The AfDB Integrated Safeguards System (ISS) was revised in 2023/2024, expanding the former OS1--OS5 framework into a more comprehensive OS1--OS10 structure. To ensure full alignment with the updated ISS, all safeguard references in this ESIA have been reviewed and corrected. Figure 1.9 illustrates the Environmental and Social (E&S) Risk Assessment and Management Framework adopted for the Lagos State Health Infrastructure Project (LSHIP) -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, in alignment with the African Development Bank's Integrated Safeguards System (ISS, 2024).

The framework reflects a structured, multi-stage process consisting of Risk Screening, Risk Identification, Risk Significance Rating, Mitigation Hierarchy Application, Residual Risk Evaluation, and Risk Management Planning. This process ensures that all environmental and social risks associated with the four PHC facilities (Agboju, Oridilu, Bada, Ogbomoshotedo) are systematically assessed and managed in accordance with AfDB OS1--OS10.

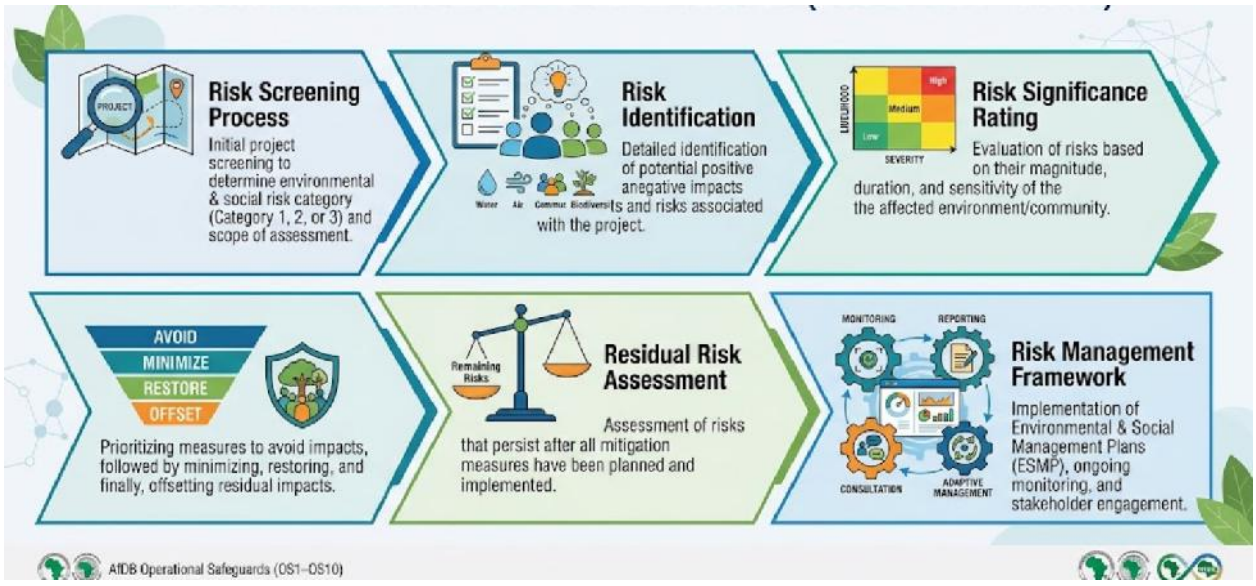


Figure 1.9: Assessment and Management of Environmental & Social Risks (AfDB OS1--OS10)

Figure 1.9 presents the full E&S Risk Assessment and Management Framework used for the LHTIP Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, demonstrating compliance with AfDB OS1--OS10 and FMEnv requirements. It outlines the sequential process of risk screening, identification, significance rating, mitigation hierarchy, residual risk evaluation, and integration into the ESMP and overall project risk management system.

1.6.4 International Good Practice Standards

Where Nigerian law is silent or weaker, the following international standards are adopted (International Finance Corporation, 2012; World Health Organization, 2014; International Labour Organization, 2019; Equator Principles Association, 2020; United Nations, 2011; Task Force on Climate-related Financial Disclosures, 2017):

- IFC Performance Standards (PS1-PS8) and EHS Guidelines
- WHO Safe Management of Wastes from Health-Care Activities (2nd Edition, 2014)
- WHO Core Components of Infection Prevention & Control
- ILO Conventions 155, 161, 187, 148, and core labour standards
- Equator Principles IV (EP4)
- UN Guiding Principles on Business and Human Rights (UNGPs)
- Task Force on Climate-related Financial Disclosures (TCFD)

1.7 Contractor ESMS Requirements

All contractors must comply with the following ESMS components, as depicted in Figure 1.10. These requirements will be included in bidding documents and contracts (African Development Bank, 2023).

- **CESMP (Contractor ESMP)** -- Dust control, noise management, water quality protection, waste management (including hazardous), spill prevention, erosion control, labour influx management, OHS plan, GBV Code of Conduct, community liaison, GRM.
- **Occupational Health and Safety** -- PPE, training, medical surveillance, incident reporting, first aid, fire safety (International Labour Organization, 1981).
- **Labour Management** -- Written contracts, prohibition of child/forced labour, non-discrimination, timely payment, worker accommodation standards, worker GRM (International Labour Organization, 1998).
- **Community Safety** -- Traffic Management Plan, access management, fencing, community liaison, emergency response.

- **GBV/SEA/SH Prevention and Response** -- Code of Conduct (signed by all workers), induction and monthly training, confidential reporting channels, survivor-centered response, sanctions (International Finance Corporation, 2020).
- **Waste Management** -- Segregation, asbestos abatement (licensed), hazardous waste disposal, waste manifests.
- **Security Management** -- VPSHR training, proportional use of force, incident reporting (Voluntary Principles on Security and Human Rights, 2000).
- **Reporting** -- Weekly E&S reports to PIU, incident reports within 24 hours.

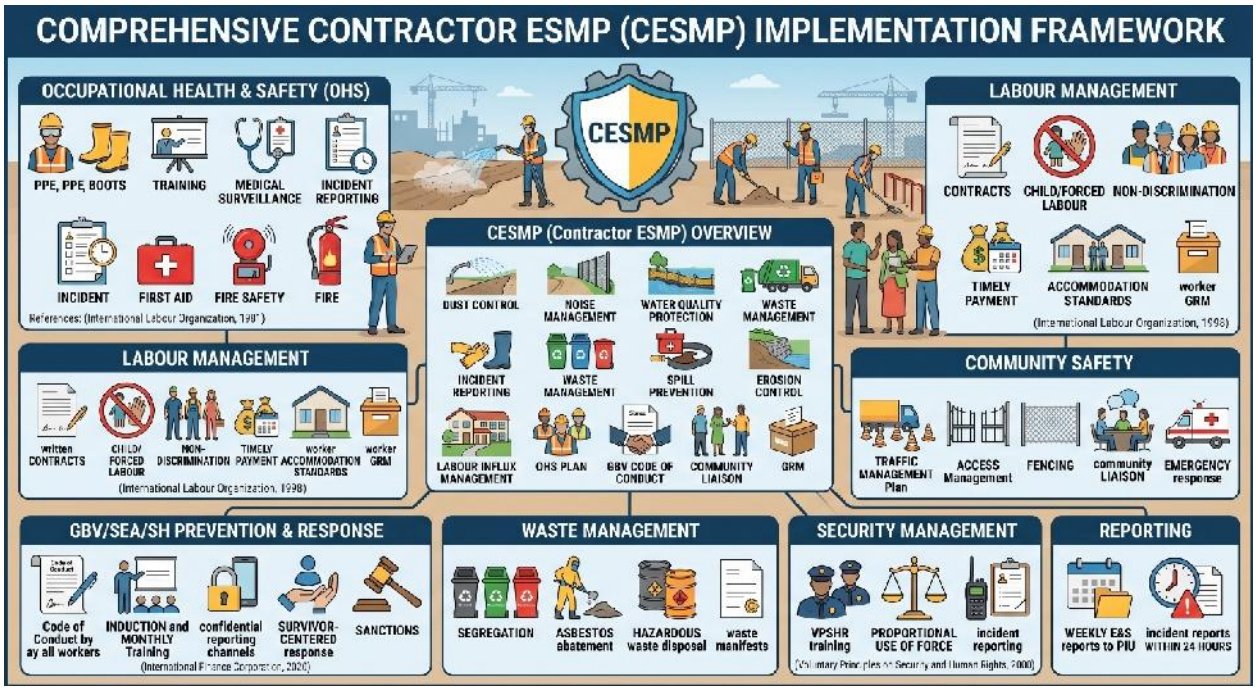


Figure 1.10: Contractor Compliance Requirements for ESMS Components

1.8 Project Risk Categorisation

FMEnv Category I -- Mandatory full EIA due to scale (29 facilities), sensitivity (wetlands, mangroves), magnitude of impacts (resettlement, asbestos, labour influx), public interest, and cumulative impacts (Federal Ministry of Environment, 2004).

AfDB Category 1 (High Risk) -- Confirmed by December 2025 Identification Mission based on (African Development Bank, 2025):

1. Multi-site complexity (29 facilities).
2. Involuntary resettlement at 6 sites (>200 PAPs at Agboju).
3. Environmentally sensitive sites (Agboju waterlogged area, wetlands).

4. Lack of dedicated E&S capacity within the PIU (institutional weakness).
5. Water crossings requiring boat transport (Gberefu, Agboyi).
6. Asbestos at 9 sites and improper waste management at *Bada, Ogbomoshotedo, Oridilu, Oba Salami, Isolo facility,* and Agbowa.

IFC Category A -- Mirrors AfDB Category 1 (International Finance Corporation, 2012).

Equator Principles IV Category A -- Requires independent ESIA, climate risk assessment (TCFD-aligned), human rights due diligence, independent monitoring (IESM), and 120-day public disclosure (Equator Principles Association, 2020).

Risk Management Approach:

For this Category 1 project, the following enhanced risk management measures are required:

Risk Area	Enhanced Measure
ESIA	Full ESIA with comprehensive baseline data, impact assessment, and mitigation
Resettlement	Full RAPs with independent valuation, compensation at full replacement cost, livelihood restoration, vulnerability support
Biodiversity	Critical Habitat screening; if confirmed, biodiversity offset (net gain, 1:1 to 3:1 ratio)
Hazardous Materials	Comprehensive HMWMP; licensed asbestos abatement; waste manifests
Labour and GBV	Labour Influx Management Plan; GBV/SEA/SH Action Plan; Code of Conduct; referral pathways
Independent Monitoring	IESM quarterly audits (unannounced, 20% of active sites per quarter)
Disclosure	120-day public disclosure (AfDB)

1.9 Involuntary Resettlement Integration (ESS5/PS5)

1.9.1 RAP Requirements for 6 Sites

The project sites that require the preparation of Resettlement Action Plans (RAPs)-to be submitted as standalone documents and appended to this ESIA are presented in Table 1.6. These sites trigger

AfDB Operational Safeguard 5 (Involuntary Resettlement) and IFC Performance Standard 5 due to the presence of Project-Affected Persons (PAPs), loss of assets, and economic or physical displacement (African Development Bank, 2023; International Finance Corporation, 2012).

Table 1.6 -- Sites Requiring Resettlement Action Plans (RAPs)

Site	PAPs	Affected Assets	RAP Status
Agboju Oriade (Multiple Development Services, 2026; African Development Bank, 2025)	>48 squatters + 58 shops	Residential structures, shops, church, school adjacent	Full RAP required
Ogba Ojodu (Multiple Development Services, 2026)	25 PAPs	Market stalls (commercial)	RAP required
Olorunda (Oke Ogbe) (Multiple Development Services, 2026)	3 PAPs	*Farmland*	RAP required
Agboju Ikorodu North (Multiple Development Services, 2026)	13 PAPs	Shops along fence	RAP required
Agboyi Ketu (Multiple Development Services, 2026)	1 commercial kiosk	Commercial structure, water-locked access	RAP required

1.9.2 RAP Coordination between Groups

The Resettlement Action Plan (RAP) for Agboju PHC (13 shop owners) is coordinated between this Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis) ESIA report and other LSHIP groups where resettlement is required.

Coordination Arrangements:

1. **Standalone RAP Document:** A standalone RAP document has been prepared covering Agboju PHC.
2. **Cross-Reference:** This RAP document is referenced in the Group 1 ESIA report to ensure consistency.
3. **Implementation Coordination:** The Project Implementation Unit (PIU) will coordinate RAP implementation across all groups, ensuring:
    - Compensation at full replacement cost (independent valuation)
    - Livelihood restoration programs (skills training, business grants)

- Vulnerability support for women-headed households, elderly, and persons with disabilities
- No land acquisition before compensation is fully paid

4. **Monitoring:** RAP implementation will be monitored Monthly by the PIU and verified by the Independent Environmental and Social Monitor (IESM), with findings reported to AfDB.
5. **Temporal Coordination:** RAP implementation for Agboju will be completed prior to the commencement of construction activities, in accordance with AfDB OS5 requirements.

The RAP for Agboju is prepared in accordance with AfDB Operational Safeguard 5 (OS5) and IFC Performance Standard 5 (PS5), ensuring that affected persons are compensated and supported before project activities commence.

1.9.3 Livelihood Restoration Framework

For all PAPs, the RAPs will include (African Development Bank, 2023):

- Cash compensation at full replacement cost (independent valuation, no depreciation).
- Transitional support (moving allowance, rental assistance for 6-12 months).
- Livelihood restoration programs (skills training, business grants, agricultural inputs and extension services, job placement assistance).
- Vulnerability support packages (additional assistance for women-headed households, the elderly, the disabled, and the very low income).

No land acquisition before compensation -- Construction cannot begin until PAPs have received compensation and assistance, verified by an independent monitor (African Development Bank, 2023/2024).

1.10 Climate Alignment (Paris Agreement, TCFD, Nigeria's NDC)

1.10.1 Climate Hazard Mapping

Table 1.7 provides a summary of the key climate-related hazards identified across the project sites, highlighting locations with elevated exposure and presenting projected changes under the 2050 high-emissions scenario (RCP 8.5) (Nigerian Meteorological Agency, 2024; Intergovernmental Panel on Climate Change, 2021; Nigerian Institute for Oceanography and Marine Research, 2023).

Table 1.7 -- Climate Hazard Mapping

Hazard	High-Risk Sites	Projected Change (2050, RCP 8.5)

Flooding (pluvial and fluvial)	Agboju, Oridilu, Bada, Isolo, Agbowa, Orimedu, Idotun, Farasime, Agboyi, Owutu, Oke Ogbe	+30% rainfall intensity; 1:100-year storm becomes 1:30-year (Intergovernmental Panel on Climate Change, 2021)
Coastal erosion / sea-level rise	Agboju, Oridilu, Orimedu, Idotun, Gberefu, APA Badagry West, Ibeju Lekki GH	Sea-level rise 0.2-0.5 m; increased storm surge (Intergovernmental Panel on Climate Change, 2021)
Heatwaves	All urban sites (Agboju, Oridilu, Bada, Ogbomoshotedo, Ogba, Otumara, Oba Salami, Isolo, Shomolu GH)	+2-3°C; >40°C days increase from 10/year to 60/year (Nigerian Meteorological Agency, 2024)
Extreme rainfall / storms	All sites	+20-30% intensity (Intergovernmental Panel on Climate Change, 2021)

Figure 1.11 presents a composite climate-hazard map of Lagos State, illustrating areas exposed to flooding, erosion, and coastal inundation, overlaid with the locations of the LHTIP project sites to support spatial risk screening and climate-resilience planning.



Figure 1.11 -- Map of climate hazards (flooding, erosion, coastal inundation)

1.10.2 Adaptation Measures (Climate-Resilient Design)

All facilities will incorporate (Task Force on Climate-related Financial Disclosures, 2017; Federal Ministry of Environment, 2021):

- Oversized culverts and drainage -- designed for 1:100-year storm + 30% climate factor.
- Elevated electrical panels -- placed above projected flood levels.
- Flood-proofing -- elevated floor slabs where needed, flood barriers for critical equipment.
- Cool roofs -- reflective coating, heat-resistant materials.
- Water security -- rainwater harvesting (5,000-10,000 L storage per PHC), borehole with UV filtration.
- Energy resilience -- Solar PV + battery storage (24-48 hours backup).

1.10.3 Alignment with Nigeria's NDC

Nigeria's NDCs commit to climate-resilient infrastructure and a 20% (47% conditional) unconditional GHG reduction by 2030 (Federal Ministry of Environment, 2021). LHTIPaligns through oversized drains, elevated electricals, solar PV (2,000-- 4,000$tCO_2e/year$ reduction), and energy-efficient design.

1.11 Gender, Inclusion & Vulnerability Framework

1.11.1 Gender Analysis & GBV Risk Screening

A gender analysis was conducted during reconnaissance. Key findings (Multiple Development Services, 2026; Lagos State Ministry of Women Affairs and Poverty Alleviation, 2023):

- Women face barriers to healthcare access (cost, transport, childcare, lack of female staff, safety concerns).
- Construction workforce is typically male-dominated; operation workforce (clinical) is predominantly female.
- GBV/SEA/SH risk is High at Agboju, Ogba, Otumara, Isolo, Agboyi, and Gberefu due to labour influx (500-1,000 workers), poor lighting, isolated paths, economic vulnerability, and lack of confidential reporting mechanisms.

Figure 1.12 presents a gender and vulnerability map of Lagos State, highlighting GBV risk hotspots, the distribution of vulnerable groups---including women-headed households, the elderly, and persons with disabilities---and the locations of riverine and island communities in relation to the LHTIPproject sites.

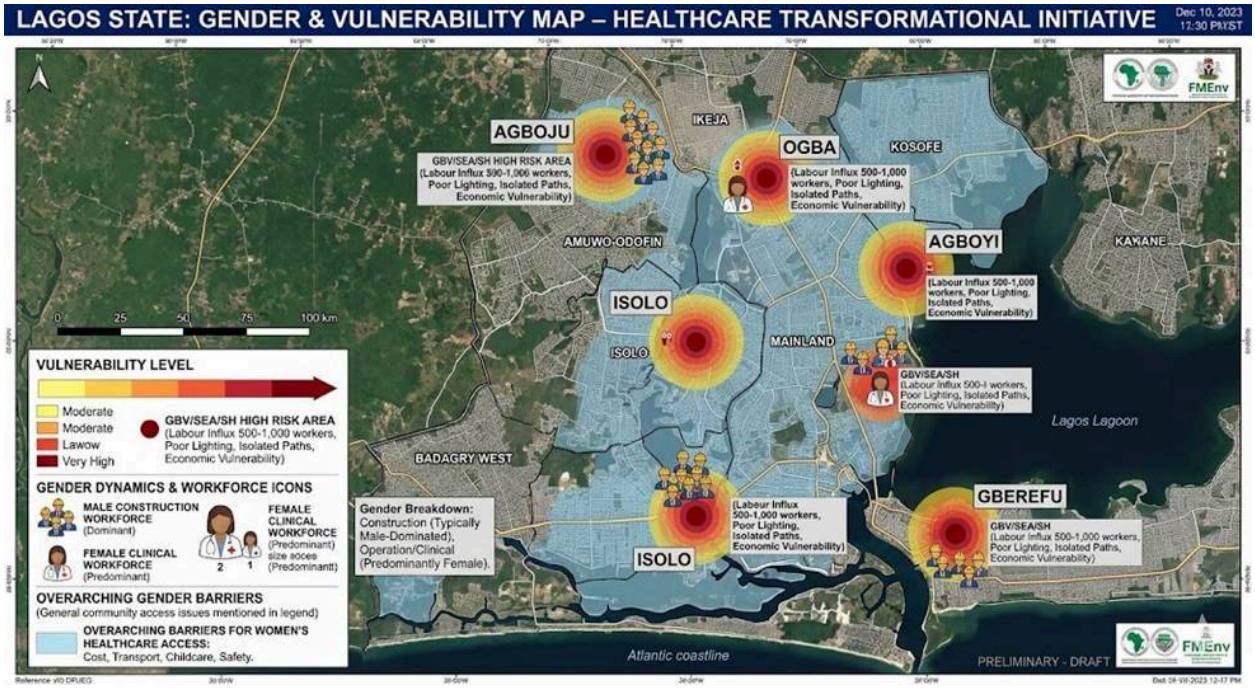


Figure 1.12 -- Gender and vulnerability map

1.11.2 AfDB OS2 -- GBV/SEA/SH Compliance

The LHTIP is fully aligned with AfDB Operational Safeguard 7 (OS7) and (OS2) – Vunerable Group and Labour and Working Conditions (ISS 2023/2024), which includes specific requirements for:

1. **GBV/SEA/SH Prevention and Response** -- Zero-tolerance policy; Code of Conduct; training; confidential reporting; survivor-centered response; referral pathways; sanctions.
2. **Gender Mainstreaming** -- Gender analysis; gender-balanced hiring; gender-sensitive facility design; gender-inclusive stakeholder engagement.
3. **Protection of Vulnerable Groups** -- Children, elderly, persons with disabilities, informal settlers, riverine/island communities.
4. **Labour Influx Management** -- Local hiring; worker accommodation standards; community liaison; health services.

Table 1.8: LHTIP Alignment with AfDB OS2 GBV/SEA/SH Requirements

OS2 Requirement	LHTIP Compliance Action	Evidence
Code of Conduct	Mandatory for all workers, subcontractors, security personnel	Appendix 11; Chapter 9

GBV/SEA/SH Training	Induction training + monthly refreshers	Chapter 9, Section 9.4.2
Confidential Reporting	Hotline, suggestion boxes, female GRM focal points, anonymous options	Chapter 9, Section 9.5.2
Survivor-Centered Response	Confidentiality, safety, respect, no retaliation, informed consent	Chapter 9, Section 9.5.1
Referral Pathways	Medical (PEP within 72 hours), psychosocial, legal, shelter	Chapter 9, Section 9.6
Sanctions	Warning, suspension, termination, legal prosecution	Chapter 9, Section 9.7
Gender-Balanced Hiring	≥50% female clinical staff, ≥30% female administrative staff	Chapter 1, Table 1.9
Disability-Friendly Design	Ramps, wide doorways, accessible toilets, braille signage	Section 3.3.2

Table 1.9 outlines the key gender and inclusion indicators that will be monitored throughout the implementation of the LSHIP. These indicators support the project's commitment to gender equity, social inclusion, and the protection of vulnerable groups, providing measurable targets and a framework for ongoing monitoring and reporting.

Table 1.9 -- Gender and Inclusion Indicators

Indicator	Target	Monitoring
Female staff in new PHCs	≥50% clinical, ≥30% administrative	Quarterly
Disability-friendly features in all new/refurbished PHCs	100%	Pre-operation inspection

GBV/SEA/SH cases reported and responded	100% within 48 hours	Monthly
Women participating in consultations	≥40% of participants	Per consultation
Vulnerable PAPs receiving enhanced support	100%	RAP monitoring
Local hiring (within LGA)	≥50% of unskilled labour	Monthly contractor report

1.12 Environmental and Social Management and Institutional Leadership

1.12.1 Institutional Leadership and Communication Structure

The LHTIP operates within a clearly defined institutional framework that establishes reporting lines, decision-making authority, and communication channels for effective project implementation. The leadership structure is designed to ensure accountability, transparency, and timely resolution of environmental and social issues across all PHC sites.

A. Project Governance Structure

The Lagos State Ministry of Health provides sectoral oversight and policy leadership. The Primary Health Care Board manages the PHC network, which has been decentralised into six Health Districts to bring healthcare closer to the people. The Project Implementation Unit (PIU) coordinates project delivery, having successfully implemented multiple health infrastructure projects between 2021–2025, including the New Massey Street Children's Hospital, General Hospital Ojo, and Ketu-Ejirin Psychiatry Hospital. Table 1.10 shows the project governance structure comprising the levels of different entities.

Table 1.10: Project Governance Structure for Safeguards Instrument

Level	Entity	Role	Key Responsibilities
Financing Institution	African Development Bank (AfDB)	Oversight & Supervision	Approve safeguard instruments Conduct supervision missions Review monitoring reports

			Enforce covenants
Regulatory Oversight (Federal)	Federal Ministry of Environment (FMEnv) & National Environmental Standards and Regulations Enforcement Agency (NESREA)	Regulatory Authority	**FMEnv:** Issue EIA Certificate Review ESIA and ESMP Conduct compliance inspections Enforce EIA Act **NESREA:** Enforce national environmental standards (air, water, noise, waste) Conduct regulatory compliance monitoring
Regulatory Oversight (State)	LASEPA, LAWMA, HEFAMAA	Regulatory Authority	State EIA concurrence Issue environmental permits Waste management oversight Healthcare facility accreditation
Implementing Agency	Lagos State Ministry of Health (LSMoH)	Project Execution	Overall project management Policy direction Resource allocation

Project Management	Project Implementation Unit (PIU)	Day-to-Day Management	ESMP implementation oversight Contractor management Stakeholder engagement GRM management Reporting to AfDB, FMEnv, and NESREA
Execution	Contractors	Construction & Refurbishment	CESMP implementation Environmental monitoring Worker management Community liaison Incident reporting
Independent Oversight	Independent Environmental & Social Monitor (IESM)	Third-Party Monitoring	Quarterly audits Compliance verification Direct reporting to AfDB
Community Representation	Traditional Institutions, CDAs, Community Liaison Officers	Community Interface	Community entry facilitation Stakeholder engagement GRM (community-level) Cultural heritage protection

B. Reporting and Communication Lines

Figure 1.13 establishes the communication channels for environmental and social management across the LSHIP.

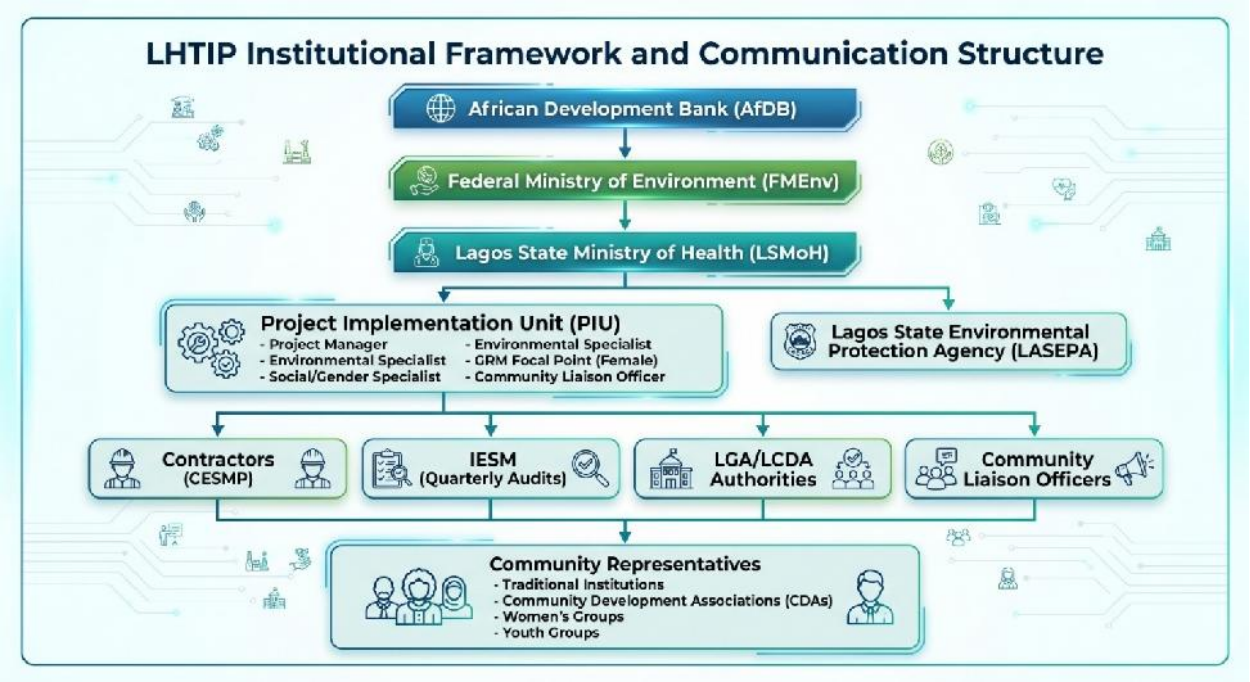


Figure 1.13: LHTIP Institutional Framework and Communication Structure

The institutional structure shown above is cross-referenced in Chapter 7 (ESMP) under institutional arrangements and in Chapter 9 (SEP) under communication and grievance redress mechanisms. It also supports AfDB OS10 by defining clear engagement and escalation pathways between the PIU, PMU, CLO, and community representatives.

Grievances from community members flow from the Community Representatives to the CLO, then to the Contractor, PMU, and PIU. Unresolved grievances escalate to LASEPA and FMEnv, and ultimately to AfDB's Independent Recourse Mechanism (IRM) if required. Detailed grievance procedures and communication protocols are provided in Chapter 9 (Stakeholder Engagement Plan).

Table 1.11. Communication Channels for Environmental and Social Management

Communication Type	Channel	Frequency	Responsible
Grievance Redress	- Toll-free hotline - Suggestion boxes at PHCs - Female GRM Focal Point - Community Liaison Officers - PIU Safeguards Team	Ongoing	PIU / Contractors

Community Engagement	- Town hall meetings - Focus Group Discussions - Community Liaison Officers - Traditional institutions	Quarterly	PIU / CLOs
Project Reporting	- Contractor → PIU: Weekly E&S reports - PIU → AfDB: Quarterly E&S reports - PIU → FMEnv: Annual ESMP reports - IESM → AfDB: Quarterly audit reports	As scheduled	Contractors / PIU / IESM
Incident Reporting	- Contractor → PIU: Within 24 hours - PIU → AfDB: Within 48 hours (serious incidents)	As needed	Contractors / PIU
Permitting & Compliance	- Contractor → LASEPA: As required - PIU → FMEnv: As required by EIA Certificate	As needed	Contractors / PIU

D. Community Liaison Structure

Table 1.12 The following community liaison structure is established for each PHC site:

Table 1.12: Community Liaison Structure

Level	Position	Role
Site Level	Site Community Liaison Officer (Contractor)	- Daily community interface - Advance notification of activities - Respond to community inquiries - Report grievances to PIU
Community Level	Traditional Leaders (Obas, Baales)	- Community entry facilitation - Cultural guidance - Grievance resolution (Level 1)
Community Level	CDA Chairpersons	- Community representation - Local hiring coordination - Feedback collection
LGA Level	LGA Environmental Health Officer	- Local regulatory liaison - Community health monitoring - Permit coordination

PIU Level	PIU Community Liaison Officer	- Overall community engagement coordination - GRM management - Stakeholder engagement reporting

1.13 Structure of The Entire Report

The structure of this ESIA follows the prescribed requirements of the African Development Bank (AfDB) for Category 1 projects and the Federal Ministry of Environment (FMEnv) for Category I undertakings. Given the scale, sensitivity, and multi-site nature of the LSHIP, strict adherence to these frameworks is essential to ensure regulatory compliance, methodological rigour, and alignment with international best practice.

Chapter 1 has established the strategic foundation for the assessment by presenting the national context, project rationale, delivery arrangements, and safeguard triggers. It has also outlined the legal and policy framework, introduced the project's risk categorization, described the statewide cluster and typology structure, and defined the institutional leadership and communication systems required for environmental and social management. Together, these elements set the stage for a comprehensive Category 1 ESIA.

The subsequent chapters build on this foundation by presenting baseline conditions, assessing potential impacts, proposing mitigation measures, and detailing the environmental and social management instruments required for implementation. The ESIA is organized into ten chapters and twenty-eight appendices, structured to fully meet the expectations of FMEnv, Lagos State regulators, and AfDB.

Report Structure

- **Chapter 1 --** Introduction National context, project overview, legal and policy framework, risk categorization, resettlement triggers, climate considerations, gender and vulnerability, institutional arrangements.
- **Chapter 2 --** Project Justification & Alternatives Rationale for the project, need assessment, alternative analysis (site, technology, design, "no-project" option).
- **Chapter 3 --** Project & Process Description Detailed description of all 29 PHC sites, design specifications, construction processes, operational systems, resource requirements.
- **Chapter 4 --** Baseline Environment Physical, biological, socio-economic, cultural, and climate baseline conditions across the project footprint.

- **Chapter 5 --** Impact Assessment Identification and evaluation of unmitigated environmental and social impacts for construction and operation phases.
- **Chapter 6 --** Mitigation Measures Proposed measures to avoid, minimise, reduce, or compensate for identified impacts.
- **Chapter 7 --** Environmental & Social Management Plan (ESMP) Roles, responsibilities, monitoring framework, performance indicators, capacity-building requirements, and budget.
- **Chapter 8** -- Hazardous & Medical Waste Management Plan (HMWMP) Procedures for segregation, storage, treatment, transportation, and disposal of medical and hazardous waste.
- **Chapter 9 --** Stakeholder Engagement & GBV/SEA/SH Action Plan Engagement strategy, grievance redress mechanism, gender-based violence prevention measures, and community interface protocols.
- **Chapter 10 --** Conclusion & Recommendations: Summary of findings, safeguard commitments, and recommendations for implementation.

1.14 FMEnv Participation, ESIA Team Composition and Stakeholders Engagement

1.14.1 FMEnv Participation and Documentation

The Federal Ministry of Environment (FMEnv) formally participated in the ESIA process for the Project and issued two statutory notifications to the Lagos State Ministry of Health (LSMoH):

1. Participation in Data Gathering and Laboratory Analyses (Letter Ref: Letter Ref: FMEnv/EA/EIA/9513/VOL1/26)/)

FMEnv notified LSMoH of its intention to witness the field data-gathering and laboratory sampling exercises. FMEnv officials were present during the sampling activities, and a **Field Attestation Register** was produced and signed by FMEnv representatives, the project proponent, and the ESIA consultants. The signed register is included as **Appendix 8**.

2. Participation in the Scoping Workshop (Letter Ref: Letter Ref: FMEnv/EA/EIA/9513/VOL1/27

FMEnv confirmed its participation in the Scoping Workshop alongside other state-level stakeholders. The workshop was successfully conducted and established the scope, data requirements, and key environmental and social issues to be addressed in the ESIA. The proceedings are documented in the relevant section of this report.

The two FMEnv notification letters (Refs: VOL1/26 and VOL1/27) constitute the official FMEnv documentation for this project and are included in **Appendix 1.3**. No additional confirmation letter is required, as the signed Field Attestation Register already provides formal evidence of FMEnv's statutory participation in the ESIA process.

FMEnv Participation and AfDB Operational Safeguards

FMEnv's statutory involvement directly supports compliance with the AfDB Integrated Safeguards System (ISS, 2023/2024) by strengthening:

- **OS1 -- Environmental and Social Assessment:** through validation of the accuracy, credibility, and completeness of baseline environmental and social data.
- **OS2 -- Labour and Working Conditions:** by ensuring that field sampling and laboratory activities adhere to national occupational health and safety requirements.
- **OS3 -- Resource Efficiency and Pollution Prevention:** via oversight of air, water, soil, and noise sampling that informs pollution prevention and environmental quality management.
- **OS5 -- Land Acquisition, Restrictions on Land Use and Involuntary Resettlement:** by confirming site conditions and community interactions relevant to land access and potential displacement risks.
- **OS10 -- Stakeholder Engagement and Information Disclosure:** by participating as a statutory stakeholder and reinforcing transparency, regulatory oversight, and proper documentation of engagement processes.

FMEnv Witnessing and Baseline Data Integrity

FMEnv's witnessing of the field data-gathering and laboratory sampling exercises ensures the integrity, reliability, and traceability of all baseline environmental and social data used in this ESIA. The signed Field Attestation Register provides independent verification that sampling methods, equipment use, chain-of-custody procedures, and laboratory analyses complied with national regulatory standards. This independent validation is essential for producing quantified, site-specific impact assessments, a core requirement under AfDB OS1 and a key concern highlighted during the Bank's review.

1.14.2 Stakeholder Engagement

FMEnv's participation in the field data-gathering and scoping processes forms part of the Project's regulatory stakeholder engagement and aligns with AfDB OS10 requirements for free, fair, prior,

and informed consultation. The witnessing exercise was conducted with the attendance of the following FMEnv and State officials:

1. Okwesa Francesca – FMEnv, Abuja
2. Oshimowo T. Bolaji – Ministry of Environment & Water Resources, Lagos State
3. Adenaike Olubunmi O. – FMEnv, Lagos Zonal Office
4. Oyawoye Anuoluwa – LSMOE/WR
5. Mr. Braimoh – PHCB
6. Shittaboy Tolulope – FMEnv, Lagos Zonal Office
7. Kehinde Biok T. – FMEnv, Lagos Zonal Office
8. Eberechukwu E.U – FMEnv, Lagos Zonal Office

Their presence ensured transparency, regulatory oversight, and proper documentation of engagement activities. This statutory participation is cross-referenced in the Stakeholder Engagement Plan (SEP), where broader community consultations, attendance records, and engagement outcomes are detailed. FMEnv's witnessing also provides assurance that stakeholder interactions were conducted in a manner consistent with OS10 principles of inclusiveness, fairness, and informed participation.

Plate 1.1: Collage of Photographs Showing Engagement with Regulators and Stakeholders During the ESIA Exercises





Stakeholders at the Meetings Held for the Amuwo Odofi Axis.

MDS ESIA Leads with FMENv Reps









Plat

Engagement with Regulators and Stakeholders During the ESIA Exercises

1.15 Public Disclosure and Accessibility

In accordance with AfDB's Policy on Disclosure and Access to Information (DAI Policy), which requires timely disclosure of project information to enable genuine public participation, the following accessibility measures will be implemented during the 120-day public disclosure period:

1.15.1 Accessibility for Illiterate Community Members

- **Audio Recordings:** Audio recordings of the Non-Technical Summary will be produced in English and Yoruba and made available at the waiting areas of Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs, community halls, and through community liaison officers.
- **Community Radio:** Key findings will be broadcast on local radio stations serving the axis in Yoruba and English over three consecutive weeks to ensure broad community reach.
- **Public Readings:** Public readings of the Non-Technical Summary will be conducted at each Group 1 PHC site and local community hall, with facilitators available to answer questions.

1.15.2 Accessibility for Visually Impaired Persons

- **Large-Print Versions:** Large-print (18pt font) versions of the Non-Technical Summary will be available at all disclosure locations across the Group 1 axis.
- **Audio Descriptions:** Audio recordings will include verbal descriptions of key figures, maps, and facility layouts.

- **Assistance:** Community liaison officers will be available to assist visually impaired persons in reviewing the report at each facility.

1.15.3 Accessibility for Local Catchment Communities (Agboju, Oridilu, Bada, Ogbomoshotedo)

- **Local Disclosure Points:** In addition to the Lagos State Ministry of Health (LSMoH) headquarters and the relevant LGA secretariats, hard copies of the ESIA and Non-Technical Summary will be available at:
    - Agboju PHC waiting area
    - Oridilu PHC waiting area
    - Bada PHC waiting area
    - Ogbomoshotedo PHC waiting area
    - Community halls in each catchment area

1.15.4 Feedback Mechanism During Disclosure

During the 120-day disclosure period, public comments on the draft ESIA will be collected through:

Channel	Description
GRM Hotline	Toll-free number for verbal comments and inquiries.
Suggestion Boxes	Located at each Group 1 PHC (Agboju, Oridilu, Bada, Ogbomoshotedo), community hall, and local market.
Community Meetings	Dedicated feedback sessions at each Group 1 site.
Written Submissions	Email and physical address provided in the ESIA.

All comments will be logged, reviewed, and responded to within 14 days. A summary of comments received and project responses will be included in the final ESIA submitted to FMEnv and AfDB.

1.15.5 Language and Translation

The Non-Technical Summary will be provided in:

- **English** (official language)
- **Yoruba** (dominant local language across the Group 1 axis)
- **Pidgin English** (widely spoken in urban and commercial communities)

CHAPTER 2 -- PROJECT JUSTIFICATION & ALTERNATIVES

2.1 Introduction

This chapter presents the justification for the Lagos State Health Infrastructure Project (LSHIP) and demonstrates why the project is necessary, what benefits it will deliver, and how it aligns with national, state, and international development priorities. The chapter also presents a systematic alternatives analysis, comparing the preferred option against reasonable alternatives, including the no-project option, alternative sites, engineering designs, construction methods, and climate adaptation strategies.

The alternatives analysis follows:

- **FMEnv EIA Act CAP E12 LFN 2004** (Section 4 -- consideration of alternatives) (Federal Ministry of Environment, 2004)
- **AfDB Operational Safeguard 1 (OS1)** -- alternatives analysis including no-action, technological, site, design, and operational alternatives (African Development Bank, 2023)
- **IFC Performance Standard 1** -- consideration of technically and financially feasible alternatives (International Finance Corporation, 2012)
- **Equator Principles IV** -- assessment of alternatives including environmental and social impacts (Equator Principles Association, 2020)

Note on Report Structure: This ESIA report covers **only Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)**. Separate, standalone ESIA reports have been prepared for the remaining clusters (Badagry Axis, Eti-Osa/Ibeju-Lekki Axis, Mainland/Yaba Axis, and Alimosho/Kosofe Axis). The justification and benefits presented in this chapter apply to the entire LHTIP programme, while the alternatives analysis focuses on site-specific considerations for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis facilities covered in this report.

2.2 Project Justification

2.2.1 Deficiencies of Existing Healthcare Infrastructure (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is a rapidly urbanising corridor with high population density and significant infrastructure gaps (Lagos State Ministry of Physical Planning and Urban Development, 2024). The four PHCs scheduled for new construction (Agboju) and refurbishment (Oridilu, Bada, Ogbomoshotedo) in this axis exhibit the following deficiencies:

Table 2.1: Deficiencies of Existing Healthcare Infrastructure

Deficiency	Evidence	Consequence
Non-functional PHCs	Only 337 of 350 public PHCs are functional across Lagos State (Lagos State Primary Healthcare Board, 2024). (Rising Damp & Saltwater Intrusion, Roofing Failures, Inadequate Perimeter Security, Erosion risk)	Millions of Lagosians lack access to primary care
Structural deterioration	Oridilu requires complete replacement; Oridilu, Bada, & Ogbomoshotedo has leaking roof, unsafe electricals (Multiple Development Services, 2026).	Patient and staff safety risks; inability to provide 24/7 service
Asbestos roofing	Asbestos suspected at Oridilu, Bada, and Ogbomoshotedo PHCs (African Development Bank, 2025; Multiple Development Services, 2026).	Occupational and community exposure to carcinogenic fibres
Inadequate water supply	Oridilu reports poor water quality (Multiple Development Services, 2026).	Risk of waterborne diseases; inability to maintain infection control
Inadequate waste management	Improper waste management observed at multiple sites (African Development Bank, 2025).	Community health risks; environmental contamination
Lack of disability access	Most existing PHCs lack ramps, wide doorways, accessible toilets.	Exclusion of vulnerable population
Flooding vulnerability	Agboju PHC is waterlogged (sensitive ecosystem); Oridilu has wetlands (Multiple Development Services, 2026).	Facility inundation; access blocked during rains
Erosion risk	Agboju and Oridilu are erosion-prone areas (Multiple Development Services, 2026).	Structural damage; sedimentation of water bodies

2.2.2 Safety Issues (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

- **Asbestos exposure:** Workers and communities face carcinogenic risk during refurbishment of Oridilu, Bada, and Ogbomoshotedo PHCs (asbestos suspected).
- **Structural collapse:** Poorly maintained buildings (e.g., *Oridilu, Bada, Ogbomoshotedo*) risk collapse.
- **Flooding:** Agboju PHC is waterlogged; Oridilu has wetlands -- seasonal flooding compromises patient safety.
- **Erosion:** Agboju and Oridilu PHCs are erosion-prone, requiring engineered drainage interventions.

2.2.3 Congestion

- **Overcrowded PHCs:** Functional PHCs in Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis serve far beyond designed capacity.
- **Referral bottlenecks:** PHCs unable to handle emergencies refer to [Ajeromi General Hospital] (overstretched) and then to LASUTH.

2.3 Strategic Need

The LSHIP aligns with Lagos State's two-pronged health strategy: (1) ensuring all residents have access to quality healthcare without financial ruin, and (2) making Lagos State a premier destination for inbound medical tourism. The project supports the State's THEMES+ agenda and contributes to the achievement of Universal Health Coverage.

2.3.1 Lagos State Development Plan 2052 -- Health Sector Goals

The Lagos State Development Plan 2052 sets ambitious health sector targets (Lagos State Government, 2022):

- Achieve Universal Health Coverage (UHC) by 2030
- Reduce maternal mortality from 150 to below 70 per 100,000 live births
- Reduce under-five mortality from 45 to below 25 per 1,000 live births
- Strengthen pandemic preparedness and response

LHTIP directly contributes by expanding access to primary care (new PHCs serving 20,000 to 30,000 population residents each in Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis), improving quality (refurbished PHCs), and strengthening referral systems.

2.3.2 AfDB High 5 Priorities

The LHTIP aligns with four of AfDB's five High 5 priorities (African Development Bank, 2015):

1. "Improve the Quality of Life for the People of Africa" -- improved healthcare access, job creation
2. "Light Up and Power Africa" -- solar PV systems at all PHCs
3. "Feed Africa" -- indirectly through improved health of farmers
4. "Industrialise Africa" -- healthier workforce, reduced absenteeism

2.3.3 Sustainable Development Goals (SDGs)

The LHTIP directly contributes to SDG 3 (Health), SDG 5 (Gender), SDG 8 (Decent Work), SDG 9 (Infrastructure), SDG 10 (Reduced Inequalities), SDG 11 (Sustainable Cities), SDG 12 (Responsible Consumption), SDG 13 (Climate Action), SDG 16 (Peace, Justice), and SDG 17 (Partnerships) (United Nations, 2015).

2.4 Project Benefits

The LSHIP is projected to deliver significant socio-economic impacts as part of Lagos State's broader health system transformation strategy:

- Over 6,500 direct jobs to be created across all components
- 1 million additional patient visits to PHCs and General Hospitals annually
- 1,240 additional patient beds
- 2,500 new health workers trained annually (upon completion of the University of Medical and Health Sciences)
- 6.4 million lab tests and 480,000 imaging scans to be supported annually through the MDSPS
- Annual economic impact: N138.6 billion (US$92 million)

Collectively, these investments will improve the lives and livelihoods of millions of Lagos residents while making Lagos a premier destination for medical tourism.

2.4.1 Economic Benefits (LHTIP Programme)

Table 2.2 Economic Benefits

Benefit	Quantification	Source
Direct jobs created	6,537 direct jobs across all components	Lagos State Ministry of Health, 2025, p. 44
Indirect jobs	Estimated 10,000--15,000	Consultant estimate

Annual economic impact	N138.6 billion (US$92 million)	Lagos State Ministry of Health, 2025, p. 44
Local procurement	60--70% of construction budget	Multiple Development Services, 2026

2.4.2 Local Business and Supply Chain Opportunities (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

The LHTIP presents significant opportunities for local businesses and supply chain development in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. These opportunities extend beyond direct employment and include:

Table 2.3. Local Material Supply Opportunities

Material Category	Estimated Quantity	Local Sourcing Potential	Local Suppliers	Economic Impact
Cement	1,500–3,000 tonnes	High (Dangote, Lafarge, other Nigerian manufacturers)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based distributors and retailers	Stimulates local trade and distribution networks
Sand and Gravel	2,000–5,000 m³] (sand); [4,000–10,000 m³] (gravel)	High (licensed local borrow pits and sand dredgers)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based sand dealers and quarry operators	Creates demand for local extractive sector
Concrete Blocks	70,000 – 150,000 blocks	High (local block-making industries)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based block manufacturers	Supports local manufacturing and employment

Steel Reinforcement	250–500 tonnes	Medium (Nigerian steel mills and distributors)	Nigerian steel distributors	Supports Nigerian manufacturing sector
Wood/Formwork	100–200 tonnes	High (local timber markets)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho timber markets	Benefits local forestry and timber trade
Plumbing and Electrical Materials	Significant quantities	Medium (local hardware stores and distributors)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based hardware stores and wholesalers	Stimulates local retail trade
Paints and Finishing Materials	Significant quantities	Medium (local manufacturers)	Local paint dealers and distributors	Supports local manufacturing and retail

Table 2.4 Business and Contractual Opportunities

Opportunity Type	Description	Target Beneficiaries	Monitoring Indicator
Direct Procurement	Contractors will procure materials from local suppliers where feasible	Local material suppliers, hardware stores, distributors	Volume of local procurement (₦ value)
Subcontracting	Local subcontractors engaged for specialized works (electrical, plumbing, roofing, etc.)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based contractors and artisans	Number of local subcontractors engaged
Service Contracts	Catering, security, waste management, and other services	Local service providers	Number of local service providers contracted

Equipment Rental	Rental of construction equipment from local suppliers	Local equipment rental companies	Number of local equipment suppliers
Accommodation and Hospitality	Worker accommodation and hospitality services	Local guesthouses, hotels, and landlords	Revenue generated for local hospitality sector
Transport and Logistics	Local transport services for workers and materials	Local transport operators (OKADA, Keke, buses, trucks)	Revenue generated for local transport sector

Table 2.5 Local Content Targets

Local Content Area	Target	Monitoring Method
Local Procurement (Materials)	≥50% of eligible construction materials sourced locally	Procurement records, supplier registration
Local Subcontracting	≥40% of eligible subcontracts awarded to local firms (within LGA)	Subcontract records
Local Hiring (Unskilled Labour)	≥50% of unskilled workers from LGAs where construction occurs	Hiring records (by LGA of residence)
Local Hiring (Skilled Labour)	≥30% of skilled workers from Lagos State	Hiring records
Local Services	≥60% of eligible service contracts awarded locally	Service contracts records
Women-Owned Businesses	≥20% of local procurement from women-owned businesses	Supplier registration, procurement records

To ensure that local businesses and communities benefit from the project, the following measures shall be implemented:

Table 2.6: Local Business Support Measures

Measure	Description	Responsible
Supplier Registration	Establish a local supplier database for materials and services	Contractor / PIU
Business Awareness	Conduct community meetings to inform local businesses of procurement opportunities	PIU / Community Liaison Officer
Capacity Building	Provide basic business and tendering skills training for local businesses	PIU / Contractor
Preference for Local Suppliers	Apply preference for local suppliers where quality and price are competitive	Contractor
Transparent Procurement	Ensure transparent and competitive procurement processes accessible to local businesses	Contractor / PIU
Payment Terms	Ensure prompt payment to local suppliers and subcontractors (within 30 days)	Contractor
Grievance Mechanism	Provide a mechanism for local businesses to report procurement-related grievances	GRM

The local procurement and employment opportunities generated by the project are expected to create a significant economic multiplier effect in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis:

Table 2.7: Economic Multiplier Effect

Multiplier Effect	Impact
Direct Employment Income	Workers spend wages in local economy (housing, food, transport, goods)
Local Procurement	Suppliers' revenue circulates within the local economy
Service Contracts	Service providers' revenue stimulates local service sector

Tax Revenue	Increased business activity generates tax revenue for LGAs
Skills Development	Local workers gain construction and technical skills, increasing future employability
Infrastructure Improvement	Access roads and other improvements benefit local businesses

Table 2.8 Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Site-Specific Local Business Opportunities

Site	Local Business Opportunities	Potential Local Suppliers
Agboju PHC (New Construction)	- Material supply (cement, blocks, sand, gravel, steel) - Labour supply (local workers) - Catering and hospitality services - Equipment rental	- local market suppliers - Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based block manufacturers - Local transport operators - Guesthouses and restaurants
Oridilu PHC (Refurbishment)	- Material supply (roofing, plumbing, electrical) - Labour supply (local artisans) - Waste management services - Security services	- local market suppliers - Amuwo-Odofin/Ajeromi Ifelodun/Alimosho-based hardware stores - Local waste management companies - Local security firms
Bada PHC (Refurbishment)	- Material supply (building materials) - Labour supply (local artisans) - Lakeside community employment - Local service providers	- local market suppliers - Local artisans - Local service providers

Ogbomoshotedo PHC (Refurbishment)	- Material supply (building materials) - Labour supply (local artisans) - Community employment	- local marke] suppliers - Local artisans - Local service providers

Here is the aligned text for **2.4.2 Social Benefits**, tailored specifically for the **Group 1 axis** (covering the PHC facilities: **Agboju, Oridilu, Bada, and Ogbomoshotedo**):

2.4.3 Social Benefits (Group 1 Axis Focus)

The Lagos State Health Infrastructure Project (LSHIP) is designed to deliver far-reaching social dividends across the 29 project sites. Beyond the physical structures, the initiative focuses on strengthening the social fabric of the host communities in the Group 1 axis (Agboju, Oridilu, Bada, and Ogbomoshotedo) and improving the quality of life for residents.

1. Enhanced Health Outcomes & Life Expectancy

The primary social benefit is the direct improvement in community health metrics across the Group 1 facilities:

- **Reduced Maternal and Infant Mortality:** Upgraded MCH (Maternal and Child Health) wings provide safer environments for deliveries and neonatal care, directly addressing high-risk births in underserved areas.
- **Infection Control:** By resolving WASH deficiencies and overcrowding at Agboju, Oridilu, Bada, and Ogbomoshotedo, the project reduces the transmission of hospital-acquired infections and waterborne diseases within the community.

2. Promotion of Social Equity & Inclusion

The project acts as a leveler for marginalized groups across the Group 1 axis:

- **Universal Accessibility:** Retrofitting facilities with ramps, grab rails, and wider corridors ensures that Persons with Disabilities (PWDs) and the elderly can access healthcare independently and with dignity.
- **Gender-Sensitive Care:** Improved spatial layouts provide private spaces for breastfeeding, counseling, and gender-based violence (GBV) screenings, making clinics a safer haven for women.

3. Economic Empowerment & Local Livelihoods

The revitalization process injects capital directly into the local economy of the Group 1 host communities:

- **Job Creation:** The construction and rehabilitation phases prioritize the recruitment of local labor (artisans, masons, and security), providing immediate income to households near Agboju, Oridilu, Bada, and Ogbomoshotedo.
- **Skill Transfer:** Local workers gain experience in modern, "green" construction standards and Occupational Health & Safety (OHS) protocols, increasing their future employability.
- **Micro-Enterprise Support:** Increased activity around the PHCs boosts the patronage of nearby small businesses and vendors.

4. Community Resilience & Psychological Well-being

Modernizing the PHCs restores public trust in the primary healthcare system across the Group 1 axis:

- **Improved Patient Experience:** Transitioning from dilapidated, cramped environments to clean, well-lit, and ventilated spaces reduces patient anxiety and improves the morale of healthcare workers.
- **Community Pride:** A modern, functional PHC serves as a landmark of government presence, fostering a sense of belonging and collective ownership among community members.
- **Climate Resilience:** By installing solar power and sustainable water systems, these PHCs remain functional during grid failures or extreme weather events, serving as "resilience hubs" for the community.

5. Strengthening the Health Governance Framework

The project empowers local health committees and stakeholders within the Group 1 axis:

- **Capacity Building:** Through train-the-trainer models and updated operational manuals, facility managers and local health committees are better equipped to maintain the assets.
- **Accountability:** The implementation of the Grievance Redress Mechanism (GRM) gives community members a formal voice, ensuring that healthcare delivery remains transparent and responsive to local needs.

Summary Statement

The LSHIP transcends simple "brick and mortar" renovation; it is a strategic investment in Social Capital across the Group 1 axis (Agboju, Oridilu, Bada, and Ogbomoshotedo), ensuring that

quality healthcare is no longer a luxury of distance or income, but a fundamental right accessible at the community level.

Social Benefits Matrix (Group 1 Focus)

The following Social Benefits Matrix outlines the projected impact of the Lagos State Health Infrastructure Project (LSHIP) for the Group 1 axis. These targets are aligned with the project's Environmental and Social Management Plan (ESMP) and national healthcare benchmarks.

Table 2.9 Social Benefits

Benefit	**Quantification (Projected/Target)**	**Source**
Maternal & Child Health Improvement	30–40% increase in facility-based deliveries; 25% reduction in neonatal referral delays.	LSHIP Inception Report & NHMIS Data
Job Creation (Local Labor)	Minimum 40% of unskilled/semi-skilled labor sourced from host communities during construction.	LSHIP Labor Management Procedure (LMP)
Disability Inclusion (PWD)	100% compliance with Universal Design standards (ramps, wide doors, PWD-toilets) across all 29 sites.	Lagos State Office for Disability Affairs (LASODA)
Health Literacy & Awareness	Reach of 5,000+ residents per PHC catchment area via community health outreach/GRM engagement.	Community Engagement & Stakeholder Plan
Youth Empowerment & Skills	150+ local artisans trained in sustainable construction and OHS protocols during project lifecycle.	MDSL Capacity Building Framework
Improved IPC Compliance	50% reduction in healthcare-associated infection risks due to upgraded WASH and ventilation.	ESIA Baseline & IPC Standards
Operational Reliability	24/7 power availability for vaccine cold chains via solar hybrid systems at 100% of sites.	Project Technical Specifications (Energy)

Grievance Resolution	95% resolution rate for community-raised concerns within 14 business days.	LSHIP Grievance Redress Mechanism (GRM)
Economic Stimulus	Estimated 15–20% boost in patronage for local micro-vendors near PHC sites during revitalization.	Socio-Economic Impact Assessment

2.4.4 Environmental Benefits

The Lagos State Health Infrastructure Project (LSHIP) integrates environmental sustainability as a core pillar of its infrastructure strategy across the Group 1 axis (Agboju, Oridilu, Bada, and Ogbomoshotedo). Moving away from "business as usual" construction, the programme delivers significant ecological benefits that align with Nigeria's Climate Change Act 2021 and international green building standards.

1. Climate Change Mitigation & Carbon Reduction

The shift toward sustainable energy directly reduces the carbon footprint of the healthcare facilities in Group 1:

- **Decarbonization of Power:** Replacing or augmenting fossil-fuel generators with Solar PV Hybrid systems across Agboju, Oridilu, Bada, and Ogbomoshotedo significantly lowers greenhouse gas (GHG) emissions.
- **Energy Efficiency:** The use of LED lighting, energy-efficient medical equipment, and passive cooling architectural designs reduces the overall energy demand of each facility in the axis.

2. Sustainable Water & Resource Management

LSHIP addresses water management challenges across the Group 1 facilities through smart resource loops:

- **Groundwater Protection:** Installation of modern, lined soakaways and bio-digesters at Agboju, Oridilu, Bada, and Ogbomoshotedo prevents the leaching of untreated effluent into the high-water table, protecting local aquifers.

- **Water Conservation:** The programme introduces low-flow taps and rainwater harvesting systems for non-clinical uses (e.g., floor cleaning, landscaping) across the Group 1 sites, reducing strain on local water sources.

3. Integrated Medical Waste Management

The project transforms how hazardous materials are handled at Group 1 facilities to prevent environmental toxicity:

- **Modernization of Disposal:** Replacing open-pit burning with eco-friendly, high-temperature incinerators or autoclaves that meet strict emission standards for the axis.
- **Waste Segregation:** Implementing standardized color-coded waste streams (Infectious, Sharps, and General) at Agboju, Oridilu, Bada, and Ogbomoshotedo ensures that hazardous waste is neutralized before leaving the site, preventing soil and water contamination.

4. Local Ecosystem Resilience

Recognizing local environmental conditions across the Group 1 axis, the project incorporates targeted safeguards:

- **Flood Attenuation:** Implementation of permeable paving and improved drainage networks reduces surface runoff and prevents seasonal flooding in low-lying healthcare compounds across Agboju, Oridilu, Bada, and Ogbomoshotedo.
- **Resilient Infrastructure Design:** Using robust, high-quality materials resistant to local weathering and wear ensures structural longevity, reducing the frequency of maintenance and construction waste generated by frequent repairs.

5. Indoor Environmental Quality (IEQ)

The refurbishment of the Group 1 PHCs focuses on establishing a healthy "micro-environment" for occupants and patients:

- **Natural Ventilation:** Redesigning window placements and ceiling heights to maximize cross-ventilation, which reduces the reliance on mechanical cooling and lowers the risk of airborne pathogen accumulation at Agboju, Oridilu, Bada, and Ogbomoshotedo.
- **Non-Toxic Materials:** Using low-VOC (Volatile Organic Compound) paints and medical-grade, non-porous surfaces to eliminate off-gassing and ensure a sterile, safe clinical environment across all four facilities.

Table 2.10 Environmental Benefits (LHTIP Programme)

Environmental Impact	Key Intervention	Long-term Benefit
Air Quality	Solar adoption & transition from petrol generators.	Reduction in local air pollutants (NO_x, SO_x) and noise pollution.
Water Security	Treated boreholes & rainwater harvesting.	Reduced depletion of local groundwater reserves.
Land Integrity	Secured medical waste zones & lined septic systems.	Prevention of soil contamination and "Sharp" waste accidents.
Resource Efficiency	Circular economy approach to construction waste.	Diverting debris from landfills through recycling and reuse.

2.5 Alternatives Analysis

2.5.1 No-Project Alternative

Description: The LHTIP is not implemented. Lagos State continues with existing healthcare infrastructure.

Environmental Impacts (No-Project):

- Continued improper medical waste management
- Continued reliance on diesel generators (air pollution, GHG emissions)
- No climate-resilient infrastructure -- existing facilities remain vulnerable to flooding, erosion, heatwaves

Social Impacts (No-Project):

- Continued lack of access to primary care for residents of Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis
- Continued maternal and child mortality (no improvement)
- Continued out-of-pocket expenditure (>80%)
- No RAPs for displaced persons -- squatters remain at risk of eviction without compensation
- Continued asbestos exposure risk (Oridilu, Bada, Ogbomoshotedo -- suspected)

Economic Impacts (No-Project):

- No direct job creation (6,537 jobs foregone across LHTIP programme)
- Continued productivity losses from morbidity

Conclusion: The no-project alternative is unacceptable. It perpetuates health inequities, fails to address infrastructure deficits, and ignores environmental and social risks.

2.5.2 Alignment Alternatives (Site Selection -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Group 1)

Table 2.11: Site Selection & Alignment Alternatives — Group 1 Axis

Facility	**Original/Preferred Site**	**Alternative Site(s) Assessed**	**Reason for Rejection**
Agboju PHC	Existing Footprint: Central urban ward location with established access.	Peripheral Greenfield Plot: A larger, vacant plot on the urban outskirts.	Accessibility & Integration: Reduced community visibility and increased emergency response time; high capital expenditure required to extend utility connections.
Oridilu PHC	Existing Footprint: Traditional community health grounds.	Commercial Corridor Plot: A vacant plot closer to the main commercial highway.	Environmental & Traffic Risk: High vulnerability to local traffic congestion, noise pollution, and elevated pedestrian accident risks.
Bada PHC	Existing Footprint: Dense neighborhood center.	Consolidated District Hub: Merging Bada and adjacent neighborhood facilities into one regional facility.	Social Inequity: Increased travel burden and transit costs for local residents, particularly pregnant women, children, and the elderly.
Ogbomoshotedo PHC	Existing Footprint: Established community health post.	Adjacent Expansion Plot: Negotiated acquisition of neighboring commercial land.	Economic/Social: High cost of land acquisition and potential for prolonged legal and community disputes with landowners.

Group 1 Axis Supplemental Sites	Existing Footprint: Peri-urban settlement plots.	Alternative Greenfield Site: Undeveloped land at the municipal boundaries.	Infrastructure Cost: Significant capital expenditure required to extend road access, drainage, and power infrastructure to the remote site.
Group 1 Axis Facilities	In-Situ Rehabilitation and Upgrading.	Consolidated Municipal Clinic: Shifting all primary healthcare functions to a single large municipal center.	Primary Care Logic: Primary health care facilities must remain at the "first-mile" community level to ensure effective immunization, antenatal care, and maternal outreach.

Table 2.12: Land Ownership Documentation:

Site	Land Ownership Type	Documentation
Agboju PHC	Government-Owned Land	- Survey Plan - Gazette Notice
Oridilu PHC	Government-Owned Land	- Survey Plan - Title Document
Bada PHC	Government-Owned Land	- Allocation Letter - Deed of Assignment
Ogbomoshotedo PHC	Government-Owned Land	- Allocation Letter - Deed of Assignment

Table 2.13 Rationale for Site Selection (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis):

Site	**Rationale**
Agboju PHC	Government-owned land; expanding residential area with high demand for health services; accessible location; no acquisition cost

Oridilu PHC	Government-owned land; existing facility footprint; dense urban community with established health services; proximity to target population
Bada PHC	Government-owned land; serves community; established health services; accessible to surrounding communities
Ogbomoshotedo PHC	Government-owned land; serves community; established health services; accessible to surrounding communities

2.5.3 Engineering Alternatives (Building Design)

Table 2.14: Engineering Alternatives (Building Design)

Alternative	Description	Advantages	Disadvantages	Selected?
Conventional design	Standard concrete block, grid electricity, diesel backup, conventional HVAC	Lower upfront cost (estimated 20% less)	Higher operating costs; higher GHG emissions; no climate resilience	No
Green building design (preferred)	Solar PV, natural ventilation, cool roofs, rainwater harvesting, energy-efficient lighting, disability-friendly design	Lower operating costs (40--60% reduction in energy costs); lower GHG emissions; climate-resilient; aligns with SDGs and NDCs	Higher upfront cost (estimated 20% premium)	**Yes**

Justification for green building design

Long-term cost savings, climate resilience, environmental benefits, social benefits (improved patient/staff comfort, disability access), alignment with AfDB, IFC, and Lagos State green building policies.

Table 2.15 Green Building Features for Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Sites:

Feature	**Agboju (New)**	**Oridilu (Refurb)**	**Bada (Refurb)**	**Ogbomoshotedo (Refurb)**

Solar PV	✓ (as applicable)	✓ (as applicable)	✓ (as applicable)	✓ (as applicable)
Natural Ventilation	✓	✓	✓	✓
Cool Roof	✓	✓	✓	✓
Rainwater Harvesting	✓	✓	✓	✓
LED Lighting	✓	✓	✓	✓
Disability Access	✓	✓	✓	✓

2.5.4 Energy Supply Alternatives

Table 2.16: Energy Supply Alternatives -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis

Alternative	Description	Advantages	Disadvantages	Selected?
Grid only	Rely solely on national grid	No upfront cost	Grid unreliable; no power during outages; no climate resilience	No
Diesel generator only	Diesel generators as primary power	Reliable (if fuel available)	High operating cost; air pollution; noise; GHG emissions	No
Grid + generator	Grid primary, generator backup	Moderate upfront cost	Still relies on grid (unreliable) and generator (pollution, cost)	No
Solar PV + battery + grid (preferred)	Solar primary, battery storage, grid backup	Low operating cost; zero emissions (during solar operation); silent; climate-resilient; 24--48 hour battery backup	Higher upfront cost (but declining)	**Yes**

2.5.5 Water Supply Alternatives

Table 2.17: Water Supply Alternatives

Alternative	Description	Advantages	Disadvantages	Selected?
Borehole only	Single borehole	Low upfront cost	Risk of depletion; no backup; no water quality treatment	No
Borehole + treatment	Borehole with UV filtration	Improved water quality	Still single point of failure; no backup during borehole failure	No
Borehole + rainwater harvesting + treatment (preferred)	Borehole primary, rainwater backup, UV filtration	Water security (rainwater backup); reduced groundwater abstraction; improved quality	Higher upfront cost (rainwater storage tanks)	**Yes**

2.5.6 Wastewater Treatment Alternatives

Table 2.18: Wastewater Treatment Alternatives

Alternative	Description	Advantages	Disadvantages	Selected?
Septic tank + soakaway (PHCs)	Standard for low-flow facilities	Low cost; low maintenance	Not suitable for high volumes; risk of groundwater contamination if poorly maintained	**Yes**
No treatment (discharge to drain)	Direct discharge to storm drain	Zero cost	Illegal (violates NESREA); environmental contamination; public health risk	No

2.5.7 Construction Alternatives

Table 2.19: Construction Alternatives

Alternative	Description	Advantages	Disadvantages	Selected?
Traditional construction	Conventional materials and	Familiar; locally available; lower cost	Higher embodied carbon; slower construction	**Yes** (with low-carbon measures)

	methods (cement, steel, block)			
Low-carbon construction	Use of low-carbon cement, recycled steel, local materials, reduced waste	Lower embodied carbon (20--30% reduction)	Slightly higher cost; requires sourcing	**Yes** (where feasible)

2.5.8 Climate Alternatives

Table 2.20: Climate Alternatives

Alternative	Description	Advantages	Disadvantages	Selected?
Standard design (no climate adaptation)	Design for current climate (1:50-year storm, no sea-level rise, no heatwave planning)	Lower upfront cost	Vulnerable to climate hazards; shorter facility lifespan; higher future adaptation cost	No
Climate-resilient design (preferred)	Design for future climate (1:100-year storm + 30% factor, elevated electricals, cool roofs, solar PV)	Resilient to climate hazards; longer lifespan; lower future adaptation cost; aligns with NDCs	Higher upfront cost (estimated 10--15% premium)	**Yes**

Justification for climate-resilient design

Lagos is highly vulnerable to climate hazards (flooding, heatwaves). Facilities designed for 50+ year lifespan will face significantly different climate conditions by 2050--2070 (Intergovernmental Panel on Climate Change, 2021).

2.5.9 Waste Management Alternatives

Table 2.21: Waste Management Alternatives

Alternative	Description	Advantages	Disadvantages	Selected?
Open burning (current practice at some PHCs)	Burn waste on site	Zero cost	Air pollution (dioxins, furans, PM); community	No

			health risk; illegal under NESREA	
Unsegregated disposal to landfill	Mixed waste (including infectious) sent to landfill	Simple	Environmental contamination; public health risk; violates healthcare waste standards	No
WHO-compliant HMWMP (preferred)	Segregation (colour-coded), safe storage, treatment (autoclave), LAWMA disposal	Protects workers, communities, environment; complies with WHO, AfDB, NESREA	Requires training, equipment, ongoing cost	**Yes**

Justification for WHO-compliant HMWMP

Mandatory under AfDB OS4, IFC PS3, and NESREA regulations (World Health Organization, 2014).

2.5.10 Site-Specific Justification for Preferred Alternatives

Table 2.22 Agboju PHC (New Construction):

Alternative	Preferred Option	Justification
Site Selection	Government-owned land	No acquisition cost; community support; established health services; accessible location
Building Design	Green building design	Climate resilience; long-term cost savings; environmental benefits
Energy Supply	Solar PV + battery + grid	Reliable; low operating costs; zero emissions; 24/7 operation
Water Supply	Borehole + rainwater harvesting	Water security; reduced groundwater abstraction

Construction	Traditional + low-carbon measures	Local availability; lower cost; reduced embodied carbon

Table 2.23 Oridilu PHC (Refurbishment):

Alternative	Preferred Option	Justification
Site Selection	Existing government-owned site	Established facility; no land acquisition required; serves existing community
Building Design	Green building design (retrofitted)	Climate resilience; long-term cost savings; environmental benefits
Energy Supply	Solar PV + battery + grid	Reliable; low operating costs; zero emissions
Water Supply	Borehole + rainwater harvesting	Water security; reduced groundwater abstraction
Refurbishment	Phased approach	Maintains health services during construction; reduces disruption

Table 2.24 Bada PHC (Refurbishment):

Alternative	Preferred Option	Justification
Site Selection	Existing government-owned site	Established facility; serves community; unique access
Building Design	Green building design (retrofitted)	Climate resilience; coastal adaptation (sea-level rise); long-term cost savings
Energy Supply	Solar PV + battery + grid	Reliable; low operating costs; zero emissions
Water Supply	Borehole + rainwater harvesting	Water security; reduced groundwater abstraction
Refurbishment	Phased approach	Maintains health services during construction; reduces disruption

Table 2.25 Ogbomoshotedo PHC (Refurbishment):

Alternative	Preferred Option	Justification
Site Selection	Existing government-owned site	Established facility; serves community; no land acquisition
Building Design	Green building design (retrofitted)	Climate resilience; long-term cost savings; environmental benefits
Energy Supply	Solar PV + battery + grid	Reliable; low operating costs; zero emissions
Water Supply	Borehole + rainwater harvesting	Water security; reduced groundwater abstraction
Refurbishment	Phased approach	Maintains health services during construction; reduces disruption

2.6 Climate Alignment

2.6.1 Nigeria's NDC Alignment

Nigeria's updated NDC (2021) commits to (Federal Ministry of Environment, 2021):

- **Adaptation:** Climate-resilient infrastructure, flood management, heatwave preparedness
- **Mitigation:** 20% unconditional (47% conditional) GHG reduction by 2030

LHTIP aligns through oversized drains (+30% climate factor), elevated electricals, solar PV (2,000–4,000 tCO2e/year reduction), and energy-efficient design.

2.6.2 TCFD Alignment

The LHTIP follows TCFD recommendations (Task Force on Climate-related Financial Disclosures, 2017):

Table 2.26: TCFD Alignment

TCFD Pillar	**LHTIP** Action
Governance	PIU responsible for climate risk management; ESMP includes climate monitoring

Strategy	Climate-resilient design protects assets and operations
Risk Management	Climate hazard mapping; risk assessment; adaptation measures
Metrics and Targets	GHG inventory; emissions reduction target (net-zero operational carbon)

2.7 Gender & Inclusion Alignment

The LHTIP mainstreams gender across all components (Lagos State Ministry of Women Affairs and Poverty Alleviation, 2023):

- **Facility design:** Separate maternal and child health spaces; female staff facilities; disability-friendly access
- **GBV prevention and response:** GBV Action Plan (Chapter 9); Code of Conduct; confidential reporting; referral pathways
- **Employment:** Gender-balanced hiring (≥50% female clinical staff, ≥30% female administrative staff)
- **Stakeholder engagement:** Gender-segregated FGDs; female GRM focal points; women's groups consulted
- **Livelihood restoration (RAPs):** Women-headed households receive vulnerability support; women's skills training and business grants

Table 2.27: Gender and Inclusion Targets

Indicator	Target	Monitoring Method
Female staff in new PHCs	≥50% clinical, ≥30% administrative	Quarterly staffing reports
Women in construction workforce	≥15% of total workforce	Monthly hiring records
Women-owned businesses in supply chain	≥20% of local procurement	Procurement records
GBV/SEA/SH cases reported and responded	100% within 48 hours	GRM records
Women participating in consultations	≥40% of participants	Attendance sheets

Vulnerable PAPs receiving enhanced support	100%	RAP monitoring
Disability-friendly features in all PHCs	100%	Pre-operation inspection
Local hiring (within LGA)	≥50% of unskilled labour	Monthly contractor reports

Table 2.28: Women-Owned Business Opportunities

Business Category	Opportunities	Support Measures
Material Supply	- Sand and gravel supply - Cement and block distribution - Hardware and building materials	- Supplier registration - Business training - Access to procurement information
Food and Catering	- Construction site catering - Staff canteen services - Food supply for workers	- Vendor registration - Hygiene training - Kitchen facilities access
Services	- Cleaning and janitorial services - Security services - Waste management services	- Service provider registration - Skills training - Contract facilitation
Artisanal Trades	- Finishing works (painting, tiling) - Landscaping and gardening - Sewing (uniforms, curtains)	- Skills training - Equipment support - Work opportunities
Transport and Logistics	- Local transport services - Material delivery - Staff transport	- Transport operator registration - Safety training

2.8 Local Content and Economic Development Plan

LHTIP is committed to maximising local economic benefits through a comprehensive Local Content and Economic Development Plan. This plan aims to:

1. **Maximise local procurement** of goods and services

2. **Create sustainable employment** for local communities
3. **Build local capacity** through skills transfer and training
4. **Support local businesses** through inclusive procurement processes
5. **Ensure equitable benefits** for women and vulnerable groups

2.8.1 Local Content Framework

Table 2.29: Local Content Framework

Component	Target	Implementation Strategy	Monitoring
Local Procurement	≥50% of eligible materials and services	- Supplier registration database - Preference for local suppliers - Transparent procurement	Procurement records; supplier registration
Local Hiring	≥50% unskilled; ≥30% skilled	- Local job advertisements - Community notification - Hiring from within LGA	Hiring records (by LGA of residence)
Local Subcontracting	≥40% of eligible subcontracts	- Local contractor registration - Capacity building - Tiered subcontracting	Subcontract records
Women-Owned Businesses	≥20% of local procurement	- Women entrepreneur support - Gender-responsive procurement - Business training	Procurement records by gender
Skills Transfer	≥100 local workers trained	- Apprenticeship programs	Training completion records

		- On-the-job training - Vocational training partnerships	
Community Investment	≥1% of construction budget	- Community development projects - Infrastructure improvements - Health outreach	Community investment records

Table 2.30 Implementation Arrangements

Activity	Responsible	Timeline
Local supplier registration	Contractor / PIU	Pre-construction (Month 1--2)
Local business awareness campaigns	PIU / Community Liaison Officer	Pre-construction (Month 1--2)
Local hiring plan	Contractor	Pre-construction (Month 1)
Skills training program	Contractor / PIU	Throughout construction
Procurement preference implementation	Contractor	Throughout construction
Monitoring and reporting	Contractor / PIU	Monthly

Table 2.31 Monitoring Indicators

Indicator	Target	Frequency	Responsible
Value of local procurement (₦)	≥50% of eligible procurement	Monthly	Contractor
Number of local suppliers engaged	≥50% unskilled; ≥30% skilled	Monthly	Contractor
Number of local workers hired	≥50% unskilled; ≥30% skilled	Monthly	Contractor

Number of women-owned businesses engaged	≥20% of procurement	Monthly	Contractor
Number of workers trained	≥100 across LSHIP programme	Quarterly	Contractor / PIU
Community satisfaction with local content	≥80% satisfied	Quarterly	PIU / IESM

2.9 Circularity & Resource Efficiency

2.9.1 Material Reuse and Recycling

Table 2.32: Material Reuse and Recycling

Material	Source	Reuse/Recycling Potential	Social Benefit
Construction waste (concrete, blocks, steel)	Demolition of existing structures	Crushed concrete and blocks reused as fill; steel recycled	Reduced disposal cost; local recycling jobs
Excavated soil	Earthworks (foundations, drainage)	Reused as fill on site; excess for landscaping	Reduced need for off-site disposal; local use
Wood waste	Formwork, pallets	Reuse for formwork; chipped for mulch; donated to community	Community benefits (wood for fuel, construction)
Metal scrap	Reinforcement steel, pipes	Recycled through local scrap dealers	Supports local scrap recycling industry
Packaging waste	Material deliveries	Reduced through just-in-time delivery; recycling where feasible	Waste management jobs; reduced landfill

2.9.2 Resource Efficiency

Table 2.33: Resource Efficiency

Resource	Efficiency Measure	Estimated Savings	Social Benefit
Energy	Solar PV; LED lighting; natural ventilation	40--60% reduction in grid/diesel consumption	Lower energy costs for PHC operations; reliable power for community health services

Water	Rainwater harvesting (5,000–10,000 L storage); water-efficient fixtures	20--30% reduction in borehole abstraction	Reduced groundwater stress; water security during droughts
Materials	Local sourcing; reduced waste; low-carbon cement	20 - 30% reduction in embodied carbon	Local economic benefits; lower environmental impact

2.9.3 Social Circularity Benefits

Circularity Measure	Social Benefit
Local material sourcing	Supports local businesses and jobs
Waste recycling	Creates waste management jobs; reduces landfill impact
Material reuse	Lowers cost; benefits community through donated materials
Water conservation	Reduces community water stress; supports sustainable water use
Energy efficiency	Lower PHC operating costs; resources available for patient care

2.10 Project Alternative

2.10.1 No Project Alternative

The "No Project" alternative evaluates the consequences of not implementing the Lagos State Health Infrastructure Project (LSHIP) in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. Under this scenario, the existing Primary Health Centres (PHCs) would continue operating with their current structural deficiencies, limited capacity, and inadequate service delivery infrastructure. Failure to implement the project would result in:

- Continued deterioration of public health outcomes, especially maternal and child health indicators.
- Persistent overcrowding at secondary and tertiary health facilities due to weak PHC capacity.
- Reduced access to essential services for vulnerable groups, including women, children, the elderly, and low-income households.

- Inability to meet Lagos State's Universal Health Coverage (UHC) targets and SDG 3 (Good Health and Well-Being).
- Increased disease burden due to poor facility hygiene, inadequate waste management, and limited diagnostic capacity.
- Continued infrastructure decay, leading to higher long-term rehabilitation costs.
- Loss of economic opportunities for local contractors, artisans, suppliers, and labourers.

Given these consequences, the "No Project" alternative is not desirable and does not support Lagos State's health sector development objectives or AfDB's strategic priorities for improving human capital and social infrastructure.

2.10.2 Site-Specific Alternatives for Each PHC

In accordance with AfDB ISS (2023/2024), alternatives were evaluated for each PHC in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis to ensure that design, location, layout, and construction approaches minimize environmental and social impacts.

PHC 1 -- Agboju Primary Health Centre

- **Alternative Location:** Relocation to adjacent parcel considered; rejected due to land ownership constraints and increased resettlement risk.
- **Alternative Design:** Two-storey structure evaluated; rejected due to structural load limitations.
- **Alternative Layout:** Internal circulation redesigned to reduce patient congestion; selected.
- **Alternative Construction Approach:** Prefabricated panels considered; rejected due to supply chain limitations.

PHC 2 -- Oridilu Primary Health Centre

- **Alternative Location:** Siting behind existing structure evaluated; rejected due to drainage issues.
- **Alternative Design:** Modular expansion considered; selected for reduced construction time.
- **Alternative Access Route:** Rear access road evaluated; rejected due to community safety concerns.

PHC 3 -- Bada Primary Health Centre

- **Alternative Location:** Relocation to LGA-owned land evaluated; rejected due to distance from catchment population.

- **Alternative Layout:** Expanded waiting area and triage zone; selected.
- **Alternative Waste Handling:** Off-site disposal vs. on-site temporary storage; hybrid model selected.

PHC 4 -- Ogbomoshotedo Primary Health Centre

- **Alternative Location:** Co-location with nearby facility evaluated; rejected due to service overlap.
- **Alternative Design:** Solar-powered cold chain storage added; selected.
- **Alternative Construction Approach:** Night-time construction rejected due to noise impacts.

The alternatives analysis presented above satisfies AfDB ISS requirements by demonstrating that feasible options were evaluated at both the project level and the site level. The selected alternatives minimize environmental and social impacts while enhancing service delivery efficiency, community accessibility, and long-term sustainability.

2.11 Conclusion

The alternatives analysis presented above satisfies AfDB ISS requirements by demonstrating that feasible options were evaluated at both the project level and the site level. The selected alternatives minimize environmental and social impacts while enhancing service delivery efficiency, community accessibility, and long-term sustainability.

The Lagos State Health Infrastructure Project (LSHIP) is fully justified by the severe deficiencies in Lagos State's healthcare infrastructure, the substantial economic, social, and environmental benefits it will deliver, and its alignment with national, state, and international development priorities.

The alternatives analysis demonstrates that:

- The no-project alternative is unacceptable, as it would perpetuate poor health outcomes, infrastructure decay, and limited access to essential services for vulnerable populations.
- Alternative sites were considered for all facilities, but the preferred sites are optimal based on proximity to target populations, land availability (government-owned), accessibility, and cost. Documentation for government-owned land is provided in Appendices 1.3.
- Green building design is preferred over conventional design due to improved energy efficiency, reduced operational costs, and alignment with AfDB climate-smart infrastructure principles.

- Climate-resilient design is essential given Lagos's high vulnerability to flooding, heatwaves, and sea-level rise.
- A WHO-compliant Healthcare Waste Management Plan (HMWMP) is mandatory and preferred over open burning or uncontrolled disposal.
- Local content and economic development are integrated into project design to maximise community benefits through job creation, procurement opportunities, and skill development.

This ESIA report covers only Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis). The preferred option for this cluster---construction of one new PHC and refurbishment of three existing PHCs, incorporating green building standards, solar PV systems, rainwater harvesting, climate-resilient design, and WHO-compliant waste management---is environmentally and socially sound. It delivers substantial public health benefits to residents of the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis and creates local employment and business opportunities.

The project is therefore recommended for approval by the Federal Ministry of Environment (FMEnv) and the African Development Bank (AfDB).

CHAPTER 3 -- PROJECT & PROCESS DESCRIPTION

3.1 Background & Overview

The Lagos State Health Infrastructure Project (LSHIP) is a US$200 million AfDB-financed programme designed to fundamentally transform healthcare delivery across Lagos State. The project addresses critical gaps in primary, secondary, and tertiary healthcare infrastructure through a coordinated, multi-component strategy that integrates physical infrastructure, diagnostic capacity, workforce development, and pandemic preparedness (Lagos State Ministry of Health, 2025).

The project is being implemented by the Lagos State Ministry of Health (LSMoH) through a dedicated Project Implementation Unit (PIU). Implementation leverages a mixed model: direct procurement for construction and refurbishment, and structured Public-Private Partnerships (PPPs) for diagnostic services.

Note on Report Structure: This ESIA report covers only Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis). Separate, standalone ESIA reports have been prepared for the remaining 7 clusters. This chapter presents the project description for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis facilities only.

The LHTIP comprises four major components. For the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, Components 1 and 2 have direct physical footprints:

Table 3.1: Project Component

Component	Description	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Sites	Intervention Type
Component 1: Primary Health Infrastructure	New climate-resilient PHCs	1 (Agboju)	New construction
	Existing PHC refurbishment	3 (Oridilu, Bada, Ogbomoshotedo)	Rehabilitation

Total facilities covered in this report: 4 PHCs (1 new construction + 3 refurbishment)

3.2 Project Location -- Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

3.2.1 Geographic Overview

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is a densely populated urban and peri-urban corridor in the western part of Lagos State. The 4 project sites are distributed across Amuwo-Odofin LGA, Ajeromi Ifelodun LGA, Alimosho LGA, Oriade LCDA, Ifelodun LCDA, Ayobo

Ipaja LCDA, and Egbe Idimu LCDA. Figure 3.1 provides a detailed view of key public health centers (PHCs) and their surrounding geography within the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Local Government Areas, Lagos State, Nigeria. It includes precise location coordinates, administrative boundaries, and magnified site-level details for chosen facilities.

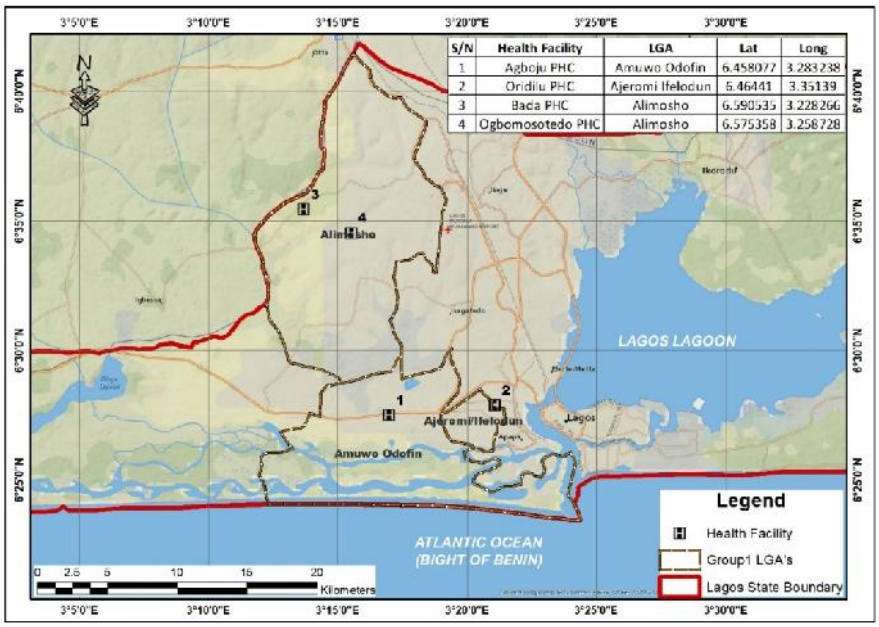
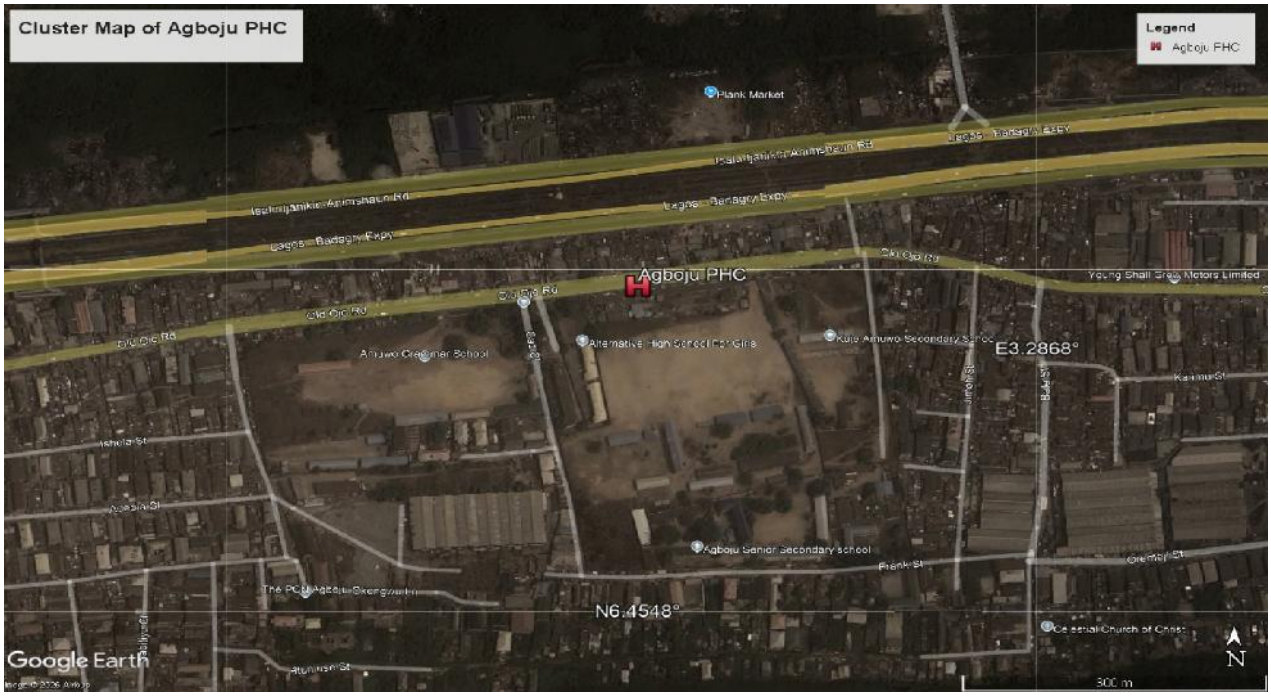


Figure 3.1: Project Area Map) showing all 4 project sites

Project Communities include the following:

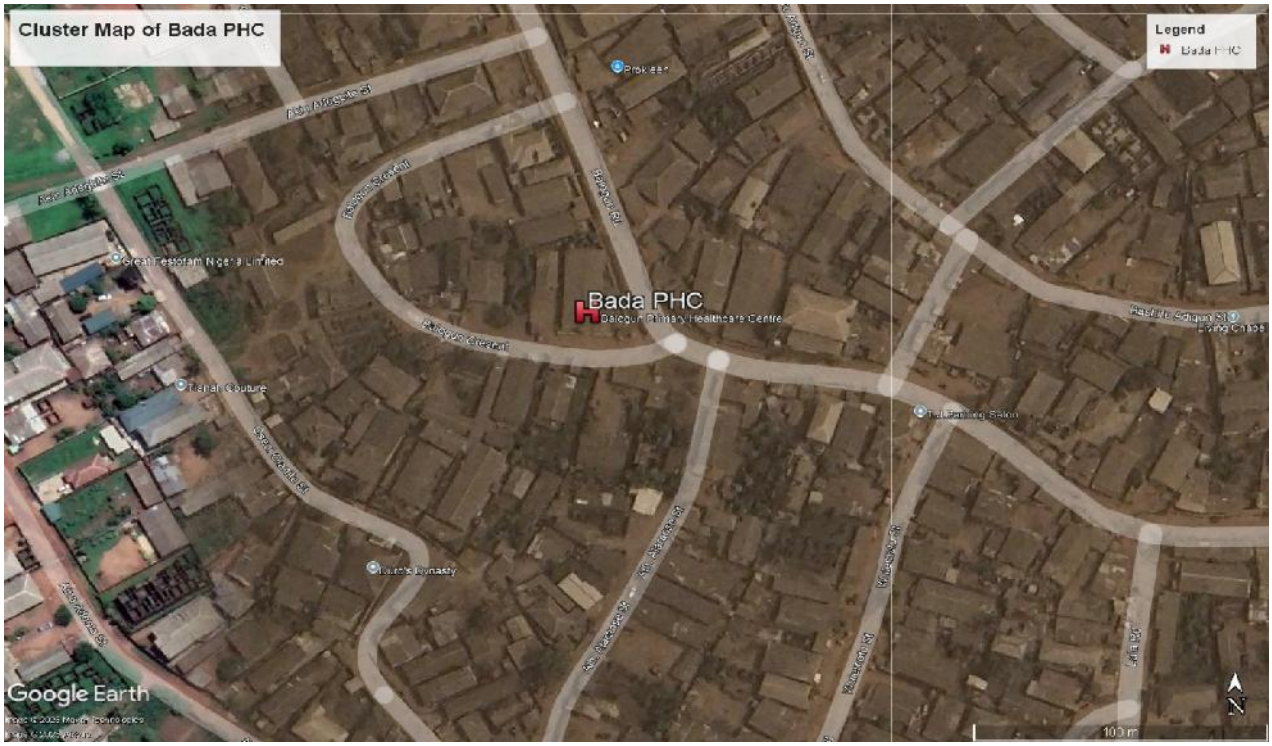
- Agboju PHC: Agboju, Oriade LCDA, Amuwo-Odofin LGA
- Oridilu PHC: Oridilu, Ifelodun LCDA, Ajeromi Ifelodun LGA
- Bada PHC: Bada village, Ayobo Ipaja LCDA, Alimosho LGA
- Ogbomoshotedo PHC: Ogbomoshotedo, Egbe Idimu LCDA, Alimosho LGA



Satellite-Based Cluster Map Showing the Spatial Location of Agboju PHC and Its Surrounding Environment



Satellite-Based Cluster Map Showing the Spatial Location of Oridilu PHC and Its Surrounding Environment



Satellite-Based Cluster Map Showing the Spatial Location of Bada PHC and Its Surrounding Environment



Satellite-Based Cluster Map Showing the Spatial Location of Ogbomoshotedo PHC and Its Surrounding Environment

Figure 3.2 -- Map of Group 1 (Amuwo – Odofin / Ajeromi Ifelodun & Alimosho Axis) showing all 4 project sites

3.2.2 Group 1 -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Site Summary

Below is the site information table for the Amuwo Odofin Axis Group 1, detailing the locations and project types for the three primary health centers.

Table 3.2 -- Sites Overview

S/N	Site Name	LGA/LCDA	GPS Coordinates	Address/Landmark	Project Type
1	Agboju PHC	Amuwo-Odofin LGA / Oriade LCDA	6.458077° N, 3.283238° E	Owoyemi Cl, Agboju, Satellite Town 102102, Lagos	New Construction
2	Oridilu PHC	Ajeromi Ifelodun LGA / Ifelodun LCDA	6.464410° N, 3.351390° E	Town Hall St, Badia Ojora, Ajeromi/Ifelodun	Refurbishment
3	Bada PHC	Alimosho LGA / Ayobo Ipaja LCDA	6.59053° N, 3.228266° E	Bada village, Ayobo Ipaja	Refurbishment
4	Ogbomoshotedo PHC	Alimosho LGA / Egbe Idimu LCDA	6.575358° N, 3.258728° E	Green land estate Isheri	Refurbishment

3.2.3 Group 1 Characteristics

Topography: Flat to gently undulating, with waterlogged areas and erosion-prone zones (Agboju, Oridilu) (Multiple Development Services, 2026).

Land use: Mix of urban (Agboju, Oridilu) and peri-urban (Bada, Ogbomoshotedo).

Environmental sensitivities: Wetlands, erosion (Agboju, Oridilu), asbestos suspected (Oridilu, Bada, Ogbomoshotedo).

3.3 Project Particulars -- New Construction

The 1 new PHC in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is designed as a Comprehensive Health Centre (Lagos State Ministry of Health, 2025, p. 25) with the following specifications:



- Community served: >100,000 residents
- Operation hours: 24 hours / 7 days
- Bed capacity: total 60 new primary level beds in Amuwo - Odofin Axis
- Clinical jobs created: 28 direct clinical jobs

Figure 3.3: Picture of the prototype of the proposed PHC for construction

3.3.1 New Construction Facilities

Table 3.3 -- New Construction Facilities

Facility	LGA/LCDA	Safeguard Requirement	Key Rationale
Agboju PHC	Amuwo-Odofin LGA / Oriade LCDA	ESIA	Government-owned land; expanding residential area

3.3.2 New PHC Design Features

The following design features are tailored to the specific geographical and socio-economic challenges of the Group 1 axis (Agboju, Oridilu, Bada, and Ogbomoshotedo), focusing on durability, energy independence, and community accessibility.

Table 3.4: PHC Design Features

Feature	Technical Specification	Environmental & Social Benefits
Flood-Resilient Substructure	Elevated finished floor levels (FFL) and reinforced concrete raft foundations designed for high water tables across Group 1.	**Environment:** Prevents structural damage during seasonal flooding. **Social:** Ensures the facility remains operational and accessible during extreme weather events.
Durable Construction Materials	Use of high-quality, weather-resistant roofing sheets and protective coatings on all external metalwork suitable for the local climate.	**Environment:** Reduces waste by extending the lifespan of building materials. **Social:** Lowers long-term maintenance costs for the local healthcare board.
Hybrid Solar Power System	Photovoltaic (PV) arrays with lithium-ion battery storage and smart inverter systems.	**Environment:** Reduces carbon footprint and reliance on fossil-fuel generators across Agboju, Oridilu, Bada, and Ogbomoshotedo. **Social:** Guarantees 24/7 power for vaccine cold-chains, emergency lighting, and nighttime deliveries.

Advanced WASH Infrastructure	Solar-powered boreholes with integrated multi-stage filtration and elevated storage tanks.	**Environment:** Prevents groundwater depletion and contamination. **Social:** Provides patients and the surrounding community with consistent access to potable water.
Integrated Waste Management	Color-coded segregation bins and on-site lined deep-pit incinerators or secure sharps pits.	**Environment:** Prevents medical waste from leaching into the local ecosystem. **Social:** Protects healthcare workers and the community from needle-stick injuries and infections.
Universal Accessibility (PWD)	Anti-skid ramps with 1:12 gradients, wider doorways, and specialized grab bars in sanitary sections.	**Environment:** Promotes efficient use of space within the existing footprint. **Social:** Ensures inclusive healthcare access for elderly residents and persons with disabilities across Group 1.
Thermal Comfort Design	High ceilings, cross-ventilation window placement, and heat-reflective roof paint.	**Environment:** Minimizes the need for energy-intensive air conditioning. **Social:** Creates a dignified and comfortable recovery environment for mothers and newborns.

Figure 3.2: 3D rendering of typical new PHC (Exterior)



Figure 3.3: 3D Rendering of Typical New PHC – Shared Ward (interior)



Figure 3.4: Prototype of the Proposed PHC for Construction



Figure 3.5 -- Typical floor plan of new PHC (prototype design)

3.3.3 Site-Specific Features -- New Construction

Agboju PHC:

- Government-owned land (documentation required)

- Erosion risk -- requires silt fences and sediment traps
- Expanding residential area -- high demand for services

3.4 Project Particulars -- Refurbishment (3 Facilities)

The 3 refurbished PHCs in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis will be upgraded to meet the benchmark standards for Comprehensive Health Centres (where space permits) or Primary Health Centres (where space is constrained) (Lagos State Ministry of Health, 2025).

Table 3.5 -- Refurbishment Facilities

Facility	LGA/LCDA	Safeguard Requirement	Key Rationale
Oridilu PHC	Ajeromi Ifelodun LGA / Ifelodun LCDA	ESIA	Asbestos suspected; dense urban community
Bada PHC	Alimosho LGA / Ayobo Ipaja LCDA	ESIA	Asbestos suspected; peri-urban community
Ogbomoshotedo PHC	Alimosho LGA / Egbe Idimu LCDA	ESIA	Asbestos suspected; peri-urban community

3.4.2 Refurbishment Scope by Activity

Table 3.6 -- Refurbishment Scope by Activity

Activity Category	**Specific Scope of Works**
Civil & Structural	Stripping of salt-damaged plaster; application of damp-proof membranes; repair of foundation settlements.
Roofing & Ceiling	Removal of corroded sheets; installation of marine-grade aluminum-zinc roofing and moisture-resistant PVC ceilings.
M&E Installations	Full electrical retrofitting for Hybrid Solar Systems; installation of energy-efficient LED lighting and inverter-compatible ACs.
WASH Upgrades	Installation of solar-powered boreholes with multi-stage filtration; construction of lined, non-permeable septic tanks.
Internal Remodeling	Reconfiguration of patient flow to expand maternal wards and ensure Infection Prevention and Control (IPC) compliance.

3.4.3 Site-Specific Sensitivities -- Refurbishment

Table 3.7 -- Refurbishment Sites with Specific Sensitivities

Site	Key Sensitivity	Special Requirement
Oridilu	Asbestos suspected; dense urban community	Asbestos survey; asbestos abatement plan (if confirmed)
Bada	Asbestos suspected; peri-urban community	Asbestos survey; asbestos abatement plan (if confirmed)
Ogbomoshotedo	Asbestos suspected; peri-urban community	Asbestos survey; asbestos abatement plan (if confirmed)

3.5 Process Description

3.5.1 Pre-Construction Phase

The pre-construction phase is critical for the Amuwo Odofin 1 axis Group 1 to ensure that engineering designs and environmental safeguards account for the unique riverine and coastal challenges of the project sites.

Table 3.8 -- Pre-Construction Activities

Activity	Description	Duration	Responsible	E&S Considerations
Site verification	Confirm boundaries, land ownership, environmental/social sensitivities	1--2 weeks	LSMoH / PIU / LASEPA / FMEnv	Land acquisition, RAP trigger (Agboju)
RAP implementation	Compensation, relocation, livelihood restoration for PAPs (Agboju -- *[13]* shops, *[0]* farmers, *[0]* informal settlers)	3--6 months	PIU / RAP consultant	Involuntary resettlement (OS5)
Asbestos survey	Licensed surveyor confirms presence/absence at Oridilu, Bada, Ogbomoshotedo (suspected)	2--4 weeks	Licensed asbestos surveyor	Worker/community exposure

Asbestos abatement	Licensed contractor removes asbestos (if confirmed)	2--4 weeks per site	Licensed abatement contractor	Air monitoring, hazardous waste
Detailed design	Architectural, structural, MEP, solar, drainage, landscaping	2--4 months	Design consultant	Climate resilience, green building
Permitting	LASEPA waste permit, water abstraction, building plan approval	1--3 months	PIU / Contractor	Compliance
Contractor procurement	Competitive bidding (AfDB rules)	2--3 months	LSMoH / AfDB	E&S criteria in bid documents
CESMP submission	Contractor submits ESMP, HMWMP, GBV Action Plan, OHS Plan	2--4 weeks after contract award	Contractor	Approval before mobilisation
Community notification	Inform communities of construction schedule, disruptions, GRM	1--2 weeks before mobilisation	PIU / Contractor	Stakeholder engagement
Mobilisation	Set up construction camp, laydown area, security, utilities	1--2 weeks	Contractor	Camp management plan

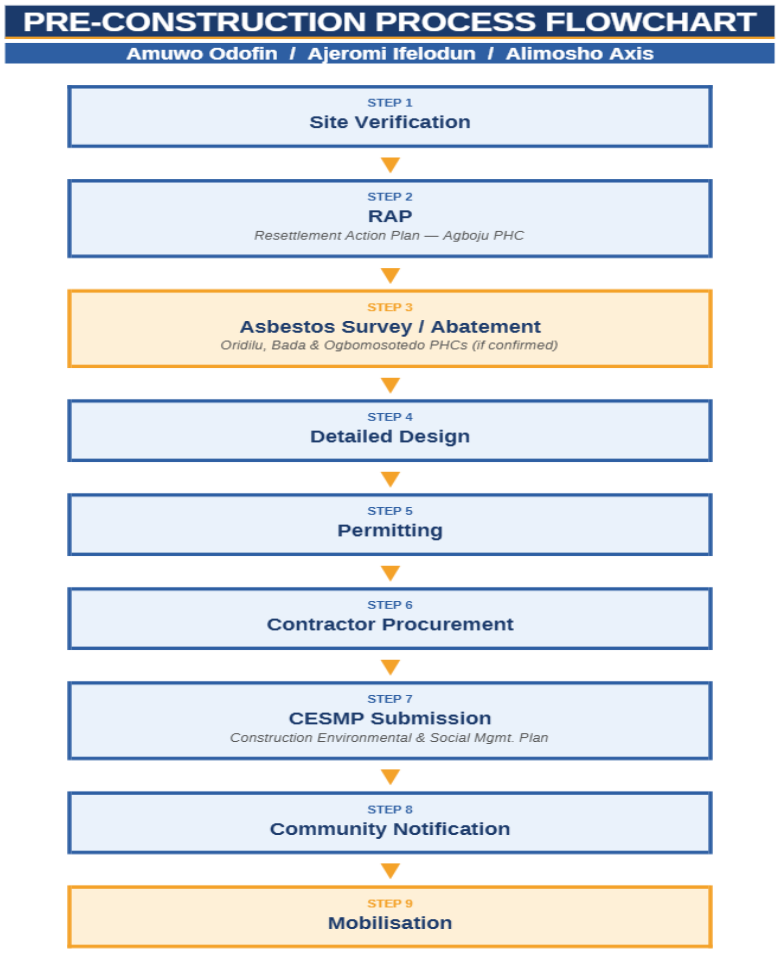


Figure 3.6 -- Pre-construction process flowchart

3.5.2 Construction Phase -- New Construction

The pre-construction phase for the Agboju PHC is specifically designed to address the new Greenfield construction for the PHC, a new flagship development, with a heavy emphasis on engineering for high water tables and coastal vulnerability.

Table 3.9 -- Construction Activities for New Construction Sites

Activity	Description	Duration (Typical)	E&S Considerations
Site clearing	Remove vegetation, debris, existing structures	1--2 weeks	Habitat loss, dust, noise, waste

Earthworks	Excavation, filling, grading	2--4 weeks	Erosion (Agboju), sedimentation, dust, noise, soil contamination
Foundation	Concrete footings, slab	2--3 weeks	Concrete wash water (pH), noise
Structural works	Columns, beams, block walls	4--8 weeks	Dust, noise, waste (blocks, mortar), OHS (falls)
Roofing	Roof structure, cool roof installation	2--3 weeks	OHS (working at height), noise
MEP installation	Electrical (including solar), plumbing, HVAC	4--8 weeks	Electrical safety, water leaks, OHS
Finishing	Flooring, painting (low-VOC), doors, windows, fixtures	4--6 weeks	VOC exposure, waste (paint cans)
Medical equipment installation	Lab equipment, autoclave, pharmacy fridge	2--4 weeks	OHS (heavy equipment), medical waste (testing)
Landscaping	Native species planting, erosion control	1--2 weeks	Soil erosion, biodiversity
Commissioning	Systems testing (solar, water, waste, fire safety)	1--2 weeks	Worker safety, community safety

3.5.3 Construction Phase -- Refurbishment (3 Sites)

Target Facilities: **Oridilu, Bada, and Ogbomoshotedo PHCs**

The construction phase for the refurbishment sites in the Group 1 axis is characterized by "Total Revitalization". Because these works occur within active or semi-active clinical environments, the focus is on speed, material durability, and maintaining community access.

Table 3.10 -- Construction Activities for Refurbishment Sites

Activity	Description	Duration (Typical)	E&S Considerations

Site preparation	Remove existing fixtures, protect remaining structures	1--2 weeks	Dust, noise, waste
Demolition (partial)	Remove unsafe structures, asbestos-containing materials (if confirmed)	1--3 weeks	Asbestos exposure (Oridilu, Bada, Ogbomoshotedo), dust, noise, hazardous waste
Structural repairs	Repair cracked walls, replace deteriorated beams/columns	2--4 weeks	Dust, noise, waste, OHS (falls)
Roof replacement	Replace roofing (asbestos if present)	1--2 weeks	Asbestos exposure, OHS (working at height)
MEP upgrades	Rewiring, new lighting, plumbing, solar PV integration	3--6 weeks	Electrical safety, water leaks, OHS
Finishing	Flooring, painting (low-VOC), new fixtures	2--4 weeks	VOC exposure, waste
Medical waste system	Install segregation bins, sharps containers, autoclave	1--2 weeks	Needle-stick injuries, infectious waste exposure
Disability access	Install ramps, widen doorways, accessible toilets	1--2 weeks	Physical injury; exclusion
Landscaping	Native species planting, erosion control	1--2 weeks	Soil erosion, biodiversity
Commissioning	Systems testing (solar, water, waste, fire safety)	1--2 weeks	Worker safety, community safety

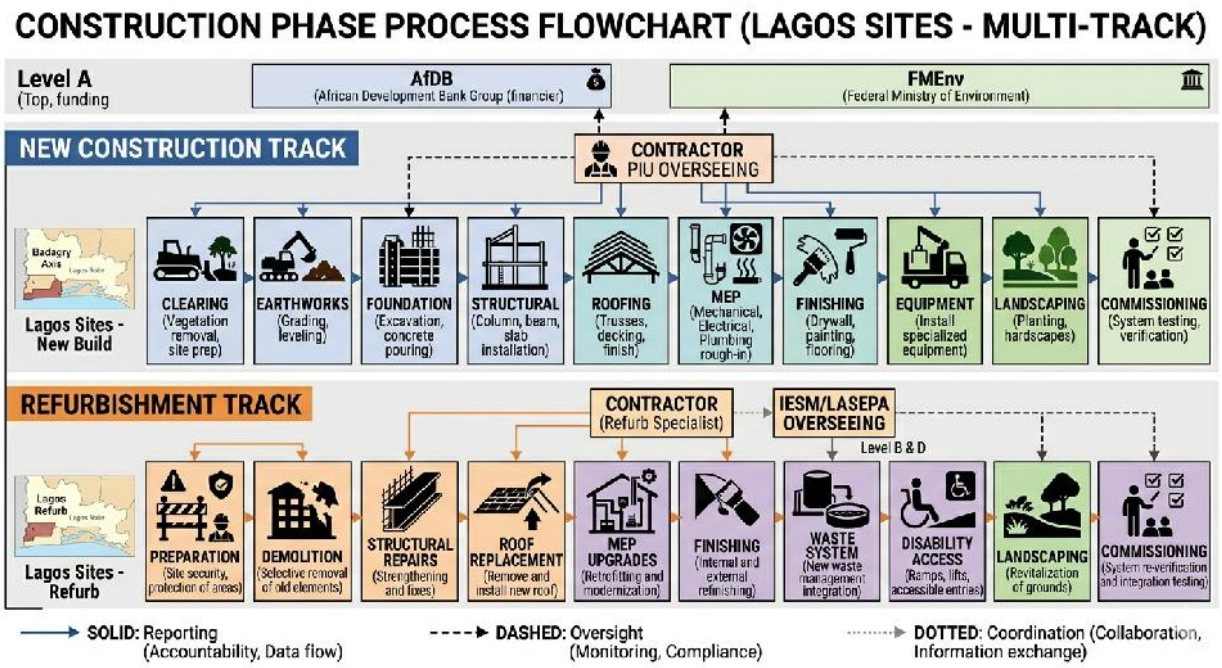


Figure 3.7 -- Construction phase process flowchart

3.6 Project Resources -- Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis

3.6.1 Labour Requirements

This table outlines the workforce composition required during the peak construction and refurbishment phase for Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs. The strategy emphasizes local content and minimizing the environmental footprint of the workforce across the axis.

Table 3.11 -- Labour Requirements by Category

Labour Category	Estimated Number	Source	Accommodation
Skilled workers (engineers, technicians, electricians, plumbers)	0–50	Lagos State (primarily)	Own accommodation or local rental
Semi-skilled (masons, carpenters, welders)	40–70	Lagos State (local hiring preference)	Local rental
Unskilled (labourers, cleaners, security)	80–120	LGAs (≥50% local hiring target)	Local rental (preferred)
Management/supervision (PIU, contractor management)	5–10	Lagos State + contractor	Own accommodation

Total estimated peak workforce for Group 1Axis: 160–320 workers (across 4 sites, phased)

Local hiring target: ≥50% of unskilled labour from LGAs where construction occurs

Labour influx risk: Medium 160–320 workers from outside communities)

3.6.2 Material Requirements

Table 3.12 -- Material Requirements

Material	Estimated Quantity	Source	E&S Consideration
Sulfate-Resistant Cement	4,500 – 6,000 bags / 225 – 300 tonnes	Local (Dangote, Lafarge)	Embodied carbon, dust
Steel (reinforcement)	45 - 60 tonnes	Local (steel mills)	Embodied carbon
Sand	1,200 – 1,500 m^3	Local (dredged -- licensed)	Erosion, habitat loss (dredging)
Gravel / laterite	900 – 1,100 m^3	Local (borrow pits -- licensed)	Habitat loss, erosion, dust
Concrete blocks	60,000–150,000 blocks	Local (block industries)	Embodied carbon
Roofing (cool roof)	2,200 – 2,800 m^2	Local or imported	Heat reduction
Solar panels	120 - 150 panels	Imported	Embodied carbon; disposal (end of life)
Batteries (lithium-ion)	45 units	Imported	Hazardous waste (end of life)
Water tanks	250,000 – 350,000 Litres	Local (plastic or concrete)	Low

Material Sourcing and Local Content Targets:

Material Category	Local Sourcing Target	Rationale
Cement	≥60%	Readily available locally; supports local distribution
Sand and Gravel	≥80%	Abundant local sources; reduces transport emissions and cost

Concrete Blocks	≥80%	Multiple local manufacturers; supports local industry
Steel	≥40%	Limited local manufacturing; regional sourcing feasible
Plumbing Materials	≥70%	Widely available in local hardware stores
Electrical Materials	≥60%	Available through local distributors
Paints and Finishing	≥70%	Local manufacturing available
Wood/Formwork	≥80%	Local timber markets available
Solar Panels	≤20%	Limited local manufacturing; imported essential
Batteries	≤10%	Limited local manufacturing; imported essential

Local Supplier Capacity Building:

Support Measure	Description	Responsible
Supplier Registration	Establish a local supplier database	Contractor / PIU
Business Training	Provide basic business and tendering skills training	PIU / Contractor
Quality Assurance	Support local suppliers to meet quality standards	Contractor
Payment Terms	Ensure prompt payment (within 30 days)	Contractor
Pre-qualification	Develop transparent pre-qualification criteria	Contractor / PIU

3.6.3 Equipment Requirements

Table 3.13 -- Equipment Requirements

Equipment	Estimated Quantity	Fuel/Power	E&S Consideration
Excavators	2–4	Diesel	Air emissions, noise, spills
Bulldozers	1–2	Diesel	Air emissions, noise, spills

Graders	1–2	Diesel	Air emissions, noise, spills
Compactors	1–2	Diesel	Air emissions, noise
Concrete mixers	2–5	Diesel or electric	Dust, noise, wash water
Trucks (hauling)	3–5	Diesel	Air emissions, noise, dust, traffic
Generators (construction)	2–6	Diesel	Air emissions, noise, spills
Cranes	1–2	Diesel or electric	OHS (falls, struck-by), noise
Water pumps	4–6	Diesel or electric	Noise, spills

3.7 Environmental Releases & Waste

3.7.1 Air Emissions

Table 3.14 -- Air Emission Sources and Mitigation

Source	Pollutant	Mitigation
Earthworks	Dust (PM10, PM2.5)	Water spraying (3× daily dry season)
Vehicle traffic	PM10, PM2.5, NOx, SO2, CO	Low-sulphur diesel; speed limits; maintenance
Generators (construction)	PM10, PM2.5, NOx, SO2, CO	Low-sulphur diesel; maintenance; limit use
Open burning (prohibited)	PM, dioxins, furans	Prohibited -- enforce through CESMP

3.7.2 Noise

Table 3.15 -- Noise Sources and Levels

Source	**Typical Noise Level (dB(A) at 10 m)**	**Mitigation**

Excavators	75--85	Restrict hours (7:00--18:00)
Bulldozers	80--90	Restrict hours
Concrete mixers	70--80	Restrict hours
Generators	70--80	Enclosures, silencers
Trucks	70--80	Speed limits; restrict hours
Construction activities (hammering, etc.)	80--100	Restrict hours; noise barriers near sensitive receptors

Noise limits (NESREA): Residential daytime 55 dB(A), nighttime 45 dB(A) (National Environmental Standards and Regulations Enforcement Agency, 2009).

3.7.3 Wastewater

Table 3.16 -- Wastewater Sources and Management

Source	**Volume (Typical)**	**Pollutants**	**Mitigation**
Construction -- concrete wash water	1–5 m³/day per site	High pH (11--13), suspended solids	Contain; neutralise; settle; reuse or dispose (licensed)
Construction -- dewatering	5–50 m³/day per site	Suspended solids	Settle before discharge (silt fence, sediment trap)
Construction camp -- sewage	5–20 m³/day per camp	BOD, coliforms, nutrients	Portable toilets + septic tank; LAWMA collection
Construction camp -- greywater	10–50 m³/day per camp	Detergents, suspended solids	Soakaway or septic tank
Operation -- clinical wastewater (PHC)	5–20 m³/day	Pathogens, blood, chemicals (lab), pharmaceuticals	Septic tank (soakaway) -- no discharge to water bodies

3.7.4 Solid Waste

Table 3.17 -- Solid Waste Types and Management and Local Opportunities

Waste Type	Source	Quantity (Estimated)	Hazardous?	Mitigation	Local Business Opportunities
Construction waste -- inert	Concrete, blocks, bricks, tiles	500–2,000 tonnes (per site)	No	Reuse as fill; recycle (crushed concrete); dispose at licensed landfill	- Recycling business - Transport services - Aggregates supply
Construction waste -- wood	Formwork, pallets	50–200 tonnes (per site)	No	Reuse; recycle; donate to community	- Wood recycling - Donation to community - Biomass fuel
Construction waste -- metal	Scrap steel, rebar, offcuts	10–50 tonnes (per site)	No	Recycle (scrap dealers)	- Scrap metal buying - Recycling jobs - Local scrap dealers
Hazardous waste -- asbestos	Roofing, insulation (Oridilu, Bada, Ogbomoshotedo -- if confirmed)	10–100 tonnes (per site)	Yes	Licensed abatement; double-bag; labeled transport; hazardous waste landfill	- Licensed abatement contractors (specialised) - Transport to licensed landfill (specialised)

Hazardous waste -- fuels/oils	Spills, maintenance	1–5 tonnes (total)	Yes	Bunded storage; spill kits; licensed disposal	- Waste oil recycling - Licensed waste contractors
Medical waste -- infectious	Dressings, swabs, lab waste	50–500 kg/day (per facility)	Yes	HMWMP; autoclave; LAWMA disposal	- Medical waste treatment services - LAWMA collection
Medical waste -- sharps	Needles, scalpels, syringes	10–100 kg/day (per facility)	Yes	Sharps containers; incineration	- Incineration services - Sharps disposal services
Medical waste -- pharmaceutical	Expired drugs	1–10 kg/day (per facility)	Yes	Return to manufacturer; incineration	- Pharmaceutical waste services - Incineration services
General waste (operation)	Paper, food, packaging	100–500 kg/day (per facility)	No	LAWMA collection; recycling	- Recycling services - LAWMA collection

3.8 Traffic Status & Forecast

3.8.1 Baseline Traffic

Table 3.18 -- Baseline Traffic by Site

Site	Road	AADT (Estimated)	LOS	Peak Hours

Agboju	Owoyemi Cl, Agboju, Satellite Town 102102, Lagos	850 – 1,200	C	07:30 – 09:30; 16:30 – 18:30
Oridilu	1.Town Hall St, Badia Ojora, Ajeromi/Ifelodun	400 – 650	B	08:00 – 10:00; 15:00 – 17:00
Bada	Bada village, Ayobi ipaja	1,100 – 1,500	D	07:00 – 10:00; 16:00 – 19:00
Ogbomoshotedo	Green land estate Isheri		D	07:00 – 10:00; 16:00 – 19:00

3.8.2 Construction Traffic Forecast

Table 3.19 -- Construction Traffic Forecast

Activity	Additional Vehicle Trips (per day, per site)	Peak	Mitigation
Material delivery (trucks)	5–15	Morning (7:00--9:00)	Schedule deliveries outside peak hours
Worker transport (buses/vans)	2–8	Morning (7:00--8:00), evening (17:00--18:00)	Stagger shifts; use local workers
Equipment movement	1–3	As needed	Escort vehicles; advance notification
Waste haulage	1–3	As needed	Cover loads; schedule outside peak

3.8.3 Operation Traffic Forecast

Table 3.20 -- Operation Traffic Forecast

Facility	Estimated Daily Patient Visits (Year 1)	Estimated Staff	Estimated Visitor Trips (daily)
New PHC (typical)	200–500	20–30	100–200

3.8.4 Traffic Management Plan (TMP)

All construction sites in Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis will have a TMP (Appendix 9) including:

- Signage (construction warning, speed limits, pedestrian crossings)
- Flag persons (where needed)

- Delivery scheduling (avoid peak hours)
- Worker transport (minimise private car use -- use buses)
- Access management (maintain access to homes, businesses)
- Emergency access (clear routes for ambulances, fire trucks)

qA. Traffic Safety Measures:

Measure	Description
Signage	Construction warning signs, speed limit signs, pedestrian crossing signs, "School Zone" markers where applicable
Flag Persons	Trained flag persons deployed at site entrances, road crossings, and near schools
Speed Limits	30 km/h on site access roads; 15 km/h near residences and schools
Delivery Scheduling	Schedule deliveries outside peak hours (avoid 7:00--9:00 and 16:00--19:00)
Worker Transport	Minimise private car use; use buses/vans for worker transport
Access Management	Maintain access to homes, businesses, and the PHC during construction
Emergency Access	Clear routes for ambulances, fire trucks, and emergency services
Pedestrian Crossings	Marked crossings with signs and flag persons

B. Community Access Management:

Measure	Description	Responsible
Advance Notification	Notify community 48 hours in advance of significant disruptions	Contractor / Community Liaison Officer

Access to Homes	Maintain access to all homes during construction; provide temporary walkways if needed	Contractor
Access to Businesses	Maintain access to shops and businesses; provide alternative routes if needed	Contractor
Access to PHC	Maintain access to the PHC during refurbishment; if temporary closure needed, provide alternative arrangements	PIU / Contractor
School Zone Safety	Enhanced safety measures near schools (flag persons, speed limits, crossing guards)	Contractor
Community Liaison	Designated community liaison officer to coordinate access issues	Contractor / PIU
Grievance Mechanism	GRM for community members to report access-related issues	GRM

D. Traffic Monitoring and Reporting:

Indicator	Target	Monitoring Method	Frequency
Traffic incidents	Zero	Incident reports	Daily
Speed compliance	100%	Speed monitoring; observations	Daily
Signage visibility	100%	Visual inspection	Daily
Flag person presence	100% during operations	Site inspection	Daily
Community complaints	Zero unresolved	GRM records	Weekly
Access maintained	100%	Site inspection	Daily

3.9 Project Schedule

3.9.1 High-Level Schedule

Table 3.21 -- High-Level Project Schedule

Phase	Duration	Start (Target)	End (Target)

Pre-construction (RAP, asbestos, design, permits)	Duration	Q2 2026	Q1–Q2 2027
Construction (phased across 4 sites)	6–12 months	Q2 2027 (first sites)	Q2 2029 (last sites)
Commissioning	12–24 months	Rolling	Rolling
Operation	1–3 months per site	Q4 2027 (first sites)	N/A

3.9.2 Detailed Schedule (Typical PHC -- 6--12 months)

Table 3.22 -- Detailed Construction Schedule

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Pre-construction	■	■										
Site clearing		■										
Earthworks		■	■									
Foundation			■									
Structural works			■	■	■							
Roofing					■							
MEP					■	■	■					
Finishing							■	■	■			
Equipment installation									■	■		

Landscaping										■ ■		
Commissioning											■ ■	■ ■

Figure 3.8 -- Project schedule Gantt chart

3.10 Summary

Chapter 3 has provided a comprehensive description of the LHTIP facilities within Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis**)**, including:

- 4 PHC sites (1 new construction + 3 refurbishment) with GPS coordinates, addresses, and project types
- 1 new PHC (Agboju) -- climate-resilient, green building, solar PV, disability-friendly
- 3 refurbished PHCs (Oridilu, Bada, Ogbomoshotedo) -- structural, asbestos abatement where needed (suspected), MEP upgrades
- Site-specific sensitivities -- erosion (Agboju), waterlogged ecosystem, asbestos suspected (Oridilu, Bada, Ogbomoshotedo)
- Process description -- pre-construction, construction (new and refurbishment), operation
- Engineering design -- drainage (1:100-year storm + 30% climate factor), solar PV, rainwater harvesting, disability access

3.11 Community Business and Employment Opportunities

The LHTIP presents significant opportunities for local communities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. Beyond the direct health benefits, the project will generate employment, business opportunities, and economic development.

3.11.1 Employment Opportunities

Table 3.23 -- Employment Opportunities

Labour Category	**Estimated Number (Peak)**	**Source**	**Local Hiring Target**	**Accommodation**
Skilled workers (engineers, technicians, electricians, plumbers)	30–50	Lagos State (primarily)	≥30% from Lagos State	Own accommodation or local rental

Semi-skilled (masons, carpenters, welders)	40–70	Lagos State (local hiring preference)	≥40% from LGAs	Local rental
Unskilled (labourers, cleaners, security)	80–120	LGAs (local hiring preference)	≥50% from LGAs	Local rental (preferred)
Management/supervision (PIU, contractor management)	5–10	Lagos State + contractor	≥30% from Lagos State	Own accommodation

Total estimated peak workforce for Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis: 160 – 320 workers (across 4 sites, phased)

Local Hiring Targets by Site:

Site	Unskilled Local Hiring Target	Skilled Local Hiring Target	Rationale
Agboju PHC	≥50% from Amuwo-Odofin LGA	≥30% from Lagos State	Government-owned land; community support; accessible location
Oridilu PHC	≥50% from Ajeromi Ifelodun LGA	≥30% from Lagos State	Established community; dense urban population; skills available
Bada PHC	≥50% from Alimosho LGA	≥30% from Lagos State	Peri-urban community; skills available
Ogbomoshotedo PHC	≥50% from Alimosho LGA	≥30% from Lagos State	Peri-urban community; skills available

3.11.2 Business and Supply Chain Opportunities

Table 3.24 -- Business and Supply Chain Opportunities

Opportunity Type	Description	Target Beneficiaries

Material Supply	Supply of cement, blocks, sand, gravel, steel, roofing, plumbing, electrical materials	Local suppliers, hardware stores, distributors
Equipment Rental	Rental construction equipment (excavators, mixers, compressors, etc.)	Local equipment rental companies
Transport Services	Material haulage, worker transport, waste transport	Local transport operators
Catering Services	Provision of meals for workers	Local caterers and food vendors
Accommodation Services	Worker accommodation	Local guesthouses, landlords
Security Services	Site security	Local security firms
Waste Management Services	Construction waste collection, recycling	Local waste management companies
Subcontracting	Specialised works (electrical, plumbing, roofing, finishing)	Local contractors and artisans

3.11.3 Women and Youth Employment Opportunities

Table 3.25 -- Women and Youth Employment Targets

Category	Target	Actions
Women in Construction	≥15% of total workforce	- Targeted recruitment - Skills training - Flexible working arrangements - Childcare support where feasible
Women in Supply Chain	≥20% of local procurement from women-owned businesses	- Supplier registration - Business training - Access to procurement information

Youth Employment	≥30% of unskilled workforce	- Apprenticeship programs - Skills training - Mentorship from skilled workers
Youth Skills Training	≥50 youth trained in construction skills	- On-the-job training - Vocational training partnerships - Certification support

3.11.4 Community Benefits Monitoring

Table 3.26 -- Community Benefits Monitoring Indicators

Indicator	Target	Frequency	Responsible
Local hiring (unskilled)	≥50% from LGAs	Monthly	Contractor
Local hiring (skilled)	≥30% from Lagos State	Monthly	Contractor
Local procurement (materials)	≥50% of eligible materials	Monthly	Contractor
Local subcontracting	≥40% of eligible subcontracts	Monthly	Contractor
Women in workforce	≥15% of total workforce	Monthly	Contractor
Women-owned business procurement	≥20% of local procurement	Monthly	Contractor
Youth trained	≥50 across Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis	Quarterly	Contractor / PIU
Community satisfaction	≥80% satisfied	Quarterly	PIU / IESM

CHAPTER 4 -- BASELINE ENVIRONMENT

4.1 Introduction

This chapter presents the refined baseline environmental and social conditions for the 4 project sites within Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis) under the Lagos State Health Infrastructure Project (LSHIP). The baseline describes the physical, biological, and socio-economic characteristics of each site and its area of influence, based on actual field data collected during reconnaissance surveys (24–27 February and 1-10 April 2026).

Data sources include (Multiple Development Services, 2026; Lagos State Ministry of Environment, 2023; Nigerian Meteorological Agency, 2024):

- Field measurements and observations during reconnaissance
- Stakeholder consultations (community entry meetings, FGDs, KIIs)
- GIS mapping and remote sensing (Sentinel-2, Landsat, SRTM)
- Secondary datasets (Lagos State Ministry of Health, PHCB, LASEPA, NIMET, National Population Commission, AfDB BTOR)

Given the multi-site nature of the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, baseline conditions vary across urban commercial-residential, urban residential/traditional, peri-urban residential, and urban mixed residential environments. This chapter is organised into:

1. Area of Influence (AoI)
2. Baseline Methodology
3. Physical Environment (by site)
4. Biological Environment (by site)
5. Socio-Economic and Cultural Environment (by site)
6. Resettlement Baseline
7. GBV/SEA/SH Baseline
8. Climate Baseline

4.2 Area of Influence (AoI)

The Area of Influence is defined at three levels, in accordance with the AfDB Integrated Safeguards System (ISS, 2023/2024) and IFC Performance Standard 1 (IFC PS1).

4.2.1 Direct Area of Influence (DAI)

The DAI includes all areas that will be directly physically altered by project activities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis:

Site	**DAI (estimated)**	**Description**
Agboju PHC	1,800 – 2,500 m²	Expanded footprint for entirely new building and ambulance bay
Oridilu PHC	800 – 1,200 m²	Work contained within the existing facility footprint, including new external WASH infrastructure and solar arrays
Bada PHC	800 – 1,200 m²	Focused on internal remodeling and roofing overhaul within the current perimeter; solar inverter installation
Ogbomoshotedo PHC	800 – 1,200 m²	Internal remodeling and roofing overhaul, with installation of solar inverter

Total DAI for Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis: Approximately 8–12 hectares

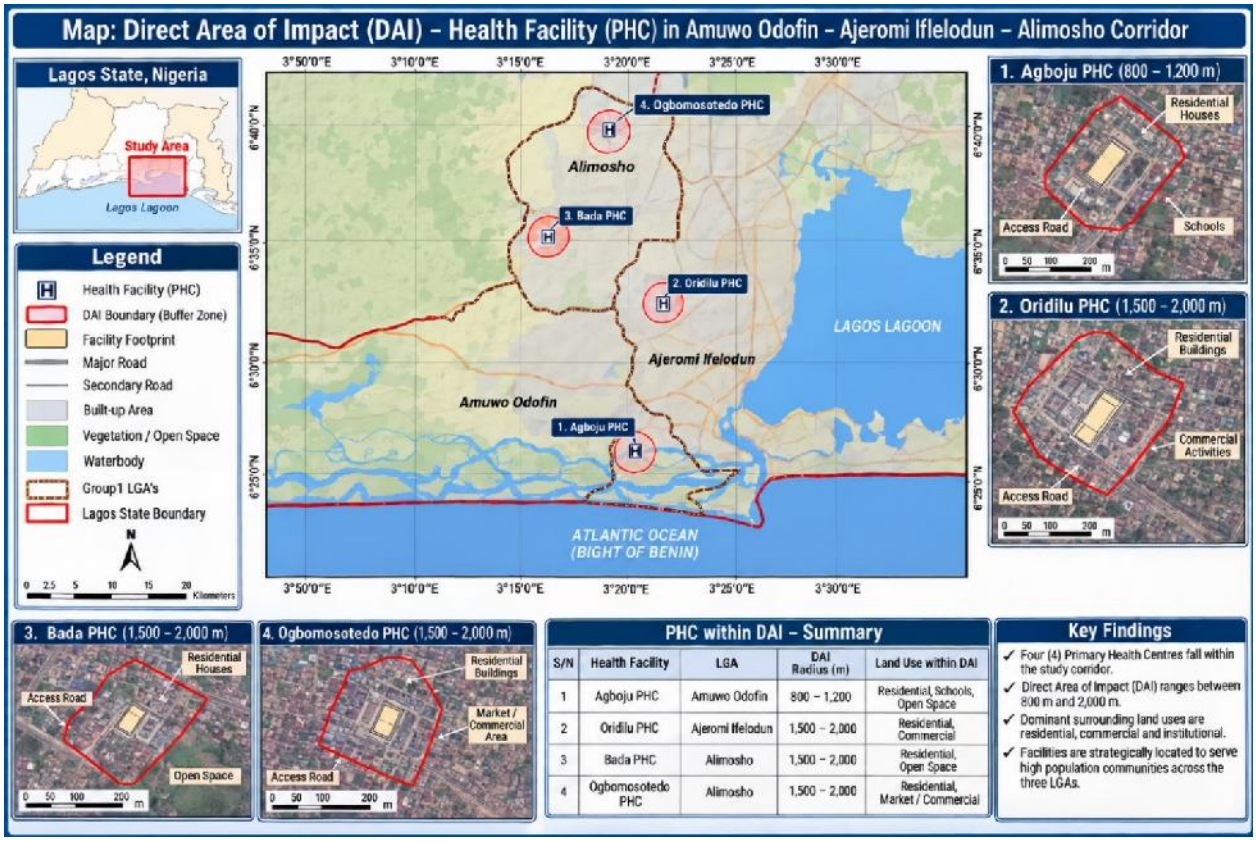


Figure 4.1: Map showing DAI boundaries for Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis sites

4.2.2 Indirect Area of Influence (IAI)

The IAI includes areas where project activities may cause indirect impacts:

- 200 m to 1 km buffer around each site
- Settlements, farmlands, wetlands, water bodies within buffer
- Utilities and social infrastructure (schools, markets, religious sites, water sources)
- Access roads (traffic impacts along haul routes)

Table 4.1 -- Communities and Ecological Zones within 1 km Buffer of Each Site

Site	Communities within 1 km	Ecological Zones within 1 km	Sensitive Receptors
Agboju PHC	1 Owoyemi Close, via Baruwa Bus Stop, Agboju, Satellite Town, Lagos	Coastal Plain Sands; Low-lying inland wetlands and seasonal floodplains	Residential households, local primary school, community market,

			mechanic workshops, churches, motor parks
Oridilu PHC	1.Town Hall St, Badia Ojora, Ajeromi/Ifelodun	Urban residential/traditional	Artisanal fishing docks, schools, shops
Bada PHC	Bada village, Ayobi ipaja	Peri-urban residential	Small-scale farms, roadside kiosks, residential dwellings
Ogbomoshotedo PHC	Green land estate Isheri	Urban mixed residential	Schools, residential blocks, commercial blocks, churches

4.2.3 Cumulative Influence Zone (CIZ)

The CIZ includes areas affected by cumulative impacts from LHTIP combined with other projects in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho corridor:

- Urban Regeneration Projects: 7 major roads (16.4km total) in the Amuwo-Odofin/ Ajeromi Ifelodun /Alimosho Division, which increases permanent vehicular emissions and noise levels.
- Coastal & Port Developments: the Lagos-Calabar Coastal Highway (Section 1) and various dredging or port activities along the Amuwo-Odofin/ Ajeromi Ifelodun /Alimosho Axis, which affect the hydrodynamics and aquatic biodiversity of the creek.
- Multiple residential developments
- Proposed road upgrades

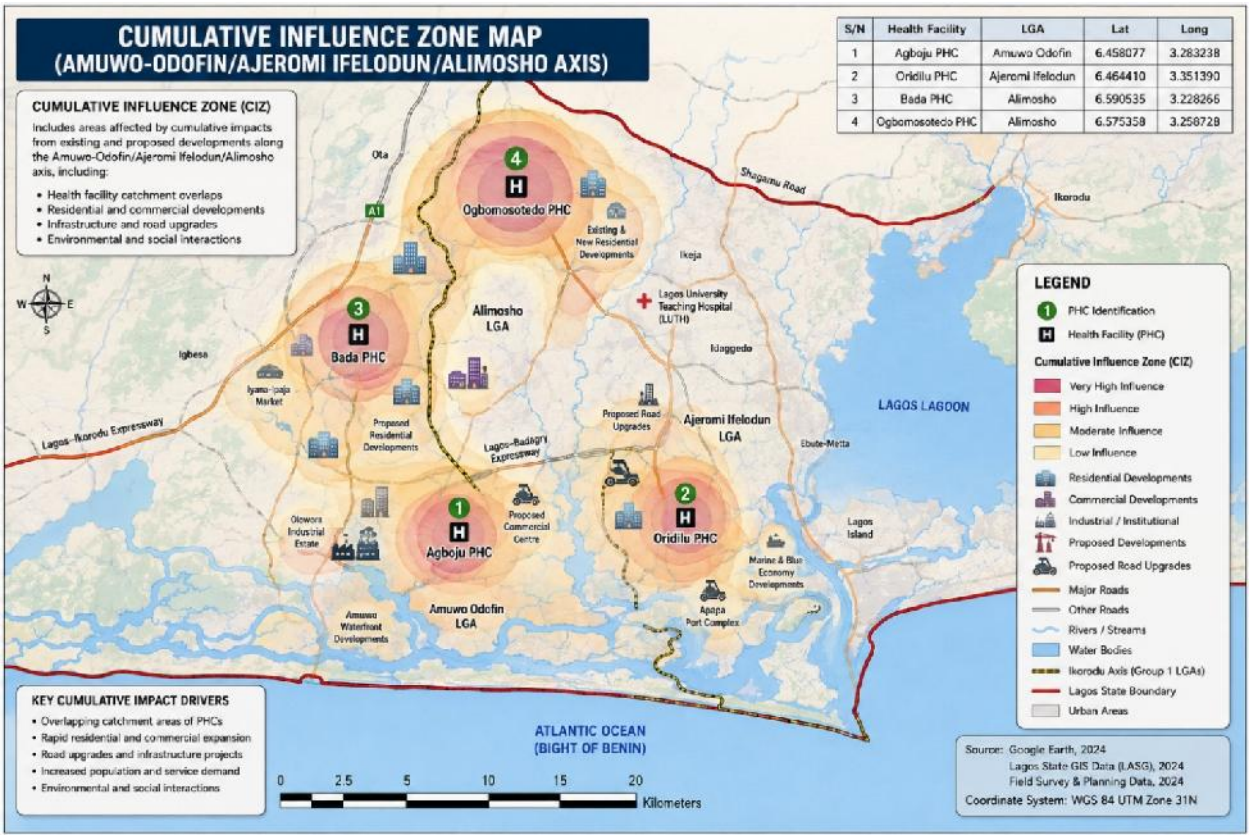


Figure 4.2 -- Cumulative influence zone map

4.3 Baseline Methodology

4.3.1 Field Surveys and Reconnaissance

Field surveys for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis were conducted in two phases: (i) an initial reconnaissance survey from 24–27 February 2026, and (ii) a wet season sampling campaign from 1–9 April 2026 in line with FMEnv ESIA Procedures (1995), FMEnv Act CAP E12 LFN 2004, LASEPA Regulations, and AfDB ISS (2023/2024). The surveys followed the structured reconnaissance methodology described in the *LHTIP Reconnaissance & Site Observation Form*, which includes desktop screening, Prioritization, field verification, stakeholder interactions, and rapid environmental and social risk identification.

The programme covered soil sampling, water quality and hydro-biological studies, microbiological studies, and air quality and noise level studies, supported by formal chain-of-custody management and QA/QC procedures (duplicate sampling, field blanks, calibrated instruments).

The field team conducted boundary confirmation, GPS mapping, walkthrough assessments, photo documentation, and rapid consultations with community representatives, Ward Health Officers,

traditional leaders, and users of nearby facilities. These engagements helped validate land status, identify sensitive receptors, confirm social dynamics, and detect early safeguard triggers such as asbestos, flooding, erosion, waste mismanagement, and potential PAPs.

The reconnaissance covered all four sites in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Agboju, Oridilu, Bada, Ogbomoshotedo), with detailed observations recorded using the standard LHTIP field instrument (Table 4.2).

Table 4.2 -- Reconnaissance Survey Coverage

Parameter	Method	Equipment	Coverage (4 Sites)
Site identification	GPS mapping	Handheld GPS	All 4 sites
Land use / land cover	Visual observation, photography	Digital camera	All 4 sites
Topography	Visual observation	N/A	All 4 sites
Flooding / erosion indicators	Visual observation	N/A	All 4 sites
Sensitive ecosystems	Visual observation, rapid ecological assessment	N/A	Agboju, Oridilu, Bada, Ogbomoshotedo
Asbestos screening	Visual observation	N/A	Oridilu, Bada, Ogbomoshotedo (suspected)
Waste management practices	Visual observation	N/A	All 4 sites
Social baseline	FGDs, KIIs, informal interviews	Structured questionnaire	All 4 sites

PAP identification	Interviews, observation	N/A	Agboju ([13] shops, [0] farmers, [0] informal settlers)

4.3.2 Baseline Methodology and Data Collection

Solid Waste Baseline Assessment

Baseline assessment of solid waste generation across the Amuwo Odofin facility was conducted through field observation and interviews with PHC staff and adjacent occupants. The facility generates mixed municipal waste, including paper, plastics, food waste, and minor quantities of medical waste. Informal waste dumping was observed along local transport corridors and unpaved urban margins. The facility currently lacks a formalized waste segregation system at source, and local municipal/informal collectors handle disposal. This baseline directly informs the waste management measures incorporated into the ESMP.

Stakeholder Engagement Integration

Stakeholder engagement was embedded throughout the reconnaissance and baseline exercise. The field team held rapid consultations with traditional leaders, Ward Health Officers, women's groups, youth associations, local traders, adjacent land users, informal business operators, and PHC staff. Key issues raised included urban flooding and localized drainage constraints, protection of local trading livelihoods, proper waste handling, facility security lighting, and expectations for local employment during construction. These engagements informed the sampling design, the scope of the ESMP, RAP screening, and the identification of sites requiring additional safeguards (such as asbestos testing and PAP enumeration).

4.3.2.1 Seasonal Sampling Regime

The baseline assessment for the Amuwo Odofin facility was conducted during one (1) seasonal sampling campaign:

- **Sampling Campaign:** Campaign 1
- **Season:** Wet Season
- **Dates:** 1–9 April 2026
- **Parameters Sampled:** Air quality, noise, groundwater, soil, flora, fauna, and socio-economic indicators.
- **Number of Sampling Points:** 2 sampling points covering the Amuwo Odofin PHC site.

Rationale for Single-Season (Wet Season) Sampling

The decision to conduct a single-season (wet season) baseline field campaign is justified by the following:

- **Regulatory Approval:** The fieldwork was conducted with full FMEnv oversight and approval, as evidenced by the signed Field Attestation Register (Appendix 8). FMEnv's participation and witnessing of the data gathering exercise validates the acceptability of the wet season sampling.
- **Project Timelines:** The LSHIP programme operates within defined implementation schedules aligned with AfDB financing covenants. A full two-season baseline would have delayed project approval and implementation by 6–12 months, compromising the delivery of critical healthcare infrastructure to underserved communities.
- **Conservative Approach:** Wet season baseline data represents the worst-case scenario for several environmental parameters (e.g., flood risk, groundwater elevation, urban runoff). Using this as the baseline ensures a conservative and precautionary approach to impact assessment and mitigation design.
- **Literature Supplementation:** Existing literature and historical data have been used to augment the baseline, providing a robust characterisation of seasonal conditions beyond the field sampling period.
- **Implementation Monitoring:** The ESMP includes provisions for dry season monitoring (Table 7.1), ensuring that the full seasonal range is captured before project completion and that adaptive management can be implemented if required.

This approach is consistent with international best practice for ESIA, where single-season baseline data, when properly justified and supplemented by literature, is acceptable provided that monitoring during implementation captures the missing season. The approach is also aligned with the AfDB ISS requirement for "appropriate and relevant baseline data" (OS1) rather than prescriptive requirements for multi-season sampling.

4.3.2.2 Seasonal Data Completeness and Literature-Based Augmentation

While the wet-season baseline provides essential data for understanding peak environmental conditions, comprehensive seasonal representation requires data collection across both wet and dry seasons. Literature from comparable urban environments in Lagos State indicates that significant seasonal variations occur in the following parameters:

- **Groundwater Quality:** High water levels and active contamination pathways during the wet season; lower water table, potential concentration of contaminants, and reduced dilution effects during the dry season (NIMET, 2024; LASEPA, 2017; Lagos State Ministry of Environment, 2023).
- **Groundwater Levels:** Peak recharge and shallow water table during the wet season; lower levels and potential stress on aquifers during the dry season (Nigerian Hydrological Services, 2020; NIOMR, 2023).
- **Air Quality (PM_{10}, $PM_{2.5}$):** Lower particulate levels due to wet deposition and reduced dust generation in the wet season; higher PM levels and increased dust from unpaved surfaces during the dry season, alongside potential harmattan influence (NIMET, 2024; NESREA, 2021).
- **Air Quality (Gaseous):** Enhanced dilution by rainfall and stable atmospheric conditions in the wet season; potential accumulation, temperature inversions, and reduced dispersion during the dry season (USEPA, 2020; WHO, 2017).
- **Ecology and Biodiversity:** Peak vegetation growth and high biological activity in the wet season; reduced vegetation and low water availability in the dry season (Nigerian Conservation Foundation, 2021; IFC, 2012).
- **Noise Levels:** Comparable year-round patterns, though heavy rainfall may affect wet season measurements; potentially elevated ambient levels during the dry season due to increased human activity and backup generator use (NESREA, 2009).
- **Socio-Economic Activities:** High local commercial and trading activity year-round, with seasonal adjustments based on weather patterns (LSHIP Baseline Study, 2026).
- **Flood Risk:** Maximum exposure to localized urban stormwater accumulation and drainage constraints during the wet season; reduced flood risk during the dry season (IPCC, 2021; NIMET, 2024).

Literature-Based Augmentation of Baseline Data

To address the limitation of single-season data collection, the ESIA has drawn extensively from existing literature to augment the baseline characterisation through:

- **Historical Climate Data:** Long-term climate records (1985–2024) from NIMET providing robust seasonal patterns for temperature, rainfall, humidity, and wind.

- **Published Research:** Academic and institutional studies on urban Lagos providing data on seasonal variations in air quality, urban runoff, and socio-economic conditions.
- **Government Reports:** LASEPA and Lagos State Ministry of Environment monitoring reports covering both wet and dry seasons for cross-validation.
- **Previous ESIA Studies:** Comparable ESIA reports for urban infrastructure projects in Lagos State providing benchmark data for seasonal parameters.
- **International Standards:** WHO, IFC, and USEPA guidelines supplying reference values that account for seasonal variation.

4.3.2.3 Secondary Data Sources Used

- **Climate Data (1985–2024):** Nigerian Meteorological Agency (NIMET), Lagos Station, Ikeja (Rainfall, temperature, humidity, wind speed/direction, sunshine hours).
- **Demographic Data:** National Population Commission (NPC); Lagos State Bureau of Statistics, 2024 (Population size, density, household composition).
- **Socio-Economic Data:** National Bureau of Statistics (NBS); Lagos State Socio-Economic Survey (Livelihoods, income, education, employment).
- **Health Facility Data:** Lagos State Primary Healthcare Board, 2024; HEFAMAA, 2024 (PHC functionality, patient load, staffing).
- **Ecological Data:** Lagos State Ministry of Environment, 2023; Nigerian Conservation Foundation, 2021 (Urban flora, green spaces).
- **Geological Data:** Nigerian Geological Survey Agency (NGSA) (Coastal plain sands and sedimentary formations).
- **Hydrological Data:** Nigerian Institute for Oceanography and Marine Research (NIOMR, 2023) (Regional hydrogeology and drainage characteristics).
- **Climate Projections:** IPCC AR6 (2021); NIMET (2024) (RCP 8.5 projections for 2050).
- **Regulatory Standards:** FMEnv, NESREA, LASEPA, WHO, IFC, AfDB ISS (Compliance benchmarks).
- **Project Design Data:** Lagos State Ministry of Health, 2025; MDS Feasibility Study, 2025 (Project components, typology, design specifications).
- **Previous ESIA Studies:** Comparable ESIA reports for urban projects in Lagos State (Benchmark data for seasonal parameters).

- **Academic Literature:** Published research on Lagos urban ecology and environmental quality (Seasonal variation data and baseline supplementation).

4.3.2.4 Quality Assurance and Commitment to Dry Season Monitoring

Quality Assurance

All primary data were collected using calibrated equipment (Aeroqual Series 500, REED Sound Level Meter, Kestrel 5500, PCSTestr 35) and analysed at Bato Chemical Laboratories Limited, an FMEnv-accredited laboratory. The team completed chain-of-custody forms for all samples (Appendix 3 and Appendix 10A). Secondary data were sourced from official government publications and peer-reviewed sources, with citations provided throughout Chapter 4.

Commitment to Dry Season Monitoring

In accordance with AfDB ISS (2023/2024) OS1 requirements and FMEnv ESIA guidelines, the project will collect dry season baseline data during the implementation monitoring phase. This commitment is embedded in the project's Environmental and Social Management Plan (ESMP) and is reflected in the following provisions:

- **Dry season sampling at all established sampling points:** Governed under Table 7.1 (Environmental & Social Monitoring Matrix).
- **Seasonal comparison and trend analysis:** Detailed in Section 7.5 (Monitoring Plan).
- **Annual ESMP review incorporating seasonal data:** Outlined in Section 7.9 (ESMP Budget & Implementation Schedule).
- **Budget allocation for dry season monitoring:** Secured under Section 7.9 (ESMP Budget).

This approach ensures comprehensive seasonal representation and provides a complete environmental baseline that captures both peak and low conditions for all key parameters. Dry season monitoring will be conducted at the same sampling locations established during this wet season exercise, enabling direct seasonal comparison and robust trend analysis.

4.3.3 Laboratory Analysis Status

All environmental samples were analyzed at Bato Laboratory, Lagos --- an FMEnv-certified and ISO-accredited laboratory --- using APHA, ASTM, WHO, and FMEnv-approved analytical methods. Full laboratory results and certificates of analysis are provided in Appendix 5 and4.

4.4 Physical Environment

4.4.1 Climate and Meteorology

Lagos State lies in the humid tropical climate zone (Köppen: Aw). For the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis:

Parameter	Value	Source
Rainfall pattern	Bimodal (April--July, September--October)	NIMET, 2024
Annual rainfall	1,500--1,800 mm (average 1,632 mm)	NIMET, 2024
Temperature range	26--35°C (average 28°C)	NIMET, 2024
Relative humidity	70--90% (rainy season), 50--70% (dry season)	NIMET, 2024
Wind patterns	Southwesterly (rainy season), northeasterly (dry season)	NIMET, 2024

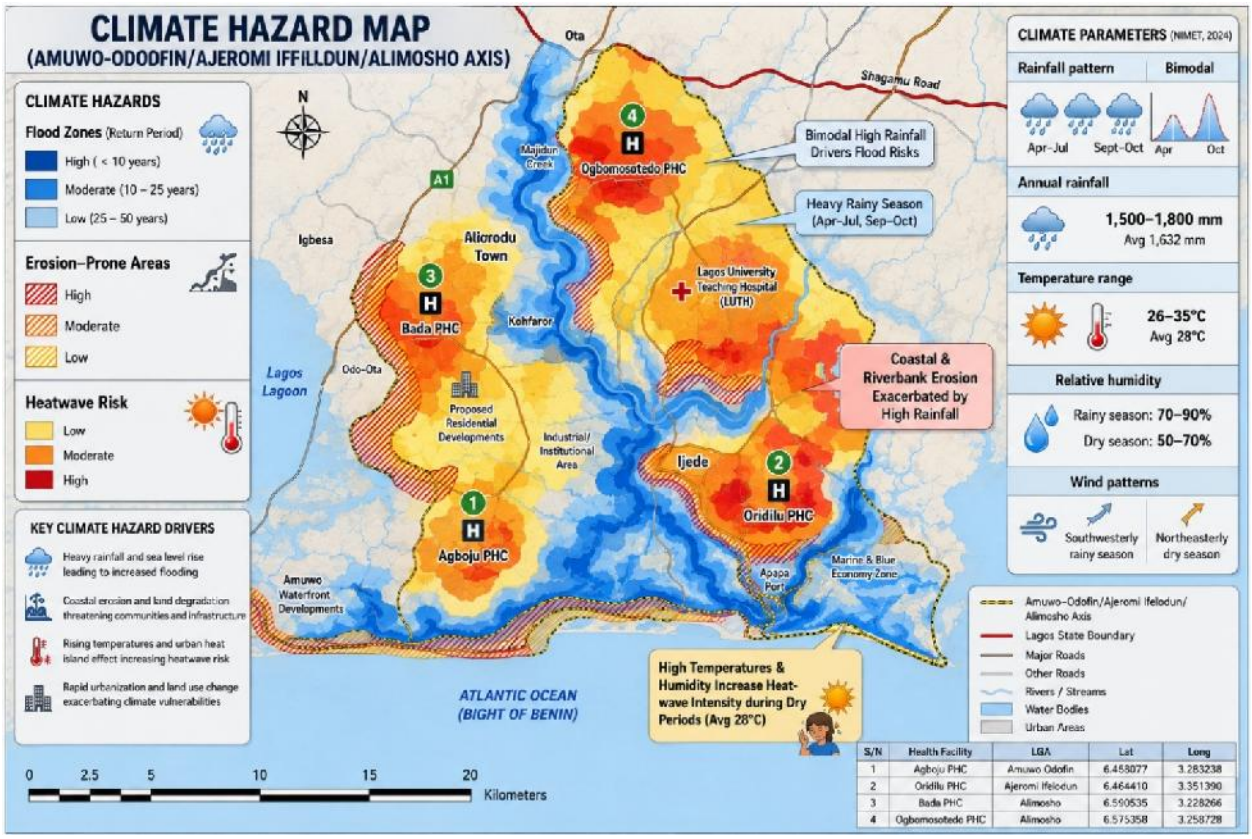


Figure 4.3 -- Climate hazard map

4.4.2 Air Quality Baseline

Air quality across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis was assessed through rapid reconnaissance observations during the 1-10th April, 2026 field surveys, followed by quantitative laboratory analysis conducted at Bato Laboratory, Lagos (FMEnv-certified and ISO-accredited). Results indicate generally low to moderate particulate matter concentrations across all sites, consistent with urban and peri-urban environments where vehicular activity is the dominant source of particulates. Full laboratory results are provided in Appendix 5.

Table 4.3 -- Air Quality Baseline by Site

Site	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	Dominant Sources
Agboju PHC	*79.3* µg/m³	*109.7* µg/m³	Vehicle emissions, road dust
Oridilu PHC	*61* µg/m³	*35.8* µg/m³	Vehicle emissions, road dust, industrial activities
Bada PHC	*68.8* µg/m³	*39.6* µg/m³	Vehicle emissions, road dust

Ogbomoshotedo PHC	*49.5* µg/m³	*35.3* µg/m³	Vehicle emissions, road dust

Compliance Benchmarks

Parameter	FMEnv Limit (24 Hours)	WHO Limit (24 Hours)	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Range
PM_{10}	250 µg/m³	50 µg/m³	49 – 79 µg/m³
$PM_{2.5}$	40 µg/m³	25 µg/m³	35 - 105 µg/m³

Interpretation:

- All $PM_{2.5}$ values fall well above both WHO and FMEnv limits, which is not a surprise given that Amuwo -Odofin & Alimosho are both the most congested LGAs in the State, prone to insane levels of Air pollution.
- PM_{10} values are slightly above WHO limits but well below FMEnv limits, typical for unpaved peri-urban roads.

Sensitive Receptors (Air Quality)

- Schools: None within 100 m of any site
- Health Facilities: Ikorodu General Hospital (~5 km from cluster)
- Residential Areas: Present around all sites

4.4.3 Noise Baseline

Noise measurements were taken across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis during the February 2026 field surveys. Quantitative readings were collected using a calibrated digital sound level meter, following FMEnv and WHO Environmental Noise Guidelines. Results indicate generally low to moderate noise levels typical of urban and peri-urban environments, with traffic and human activity being the dominant sources.

Table 4.4 -- Noise Baseline by Site (Amuwo-Odofin -- Quantitative Assessment)

Site	Daytime Leq dB(A)	Night-time Leq dB(A)	Dominant Sources
Agboju PHC	52.7	50.7	Human activity, traffic, wind
Oridilu PHC	63.5	58.9	Human activity, traffic, industrial activity
Bada PHC	61.0	59.2	Traffic (moderate), human activity

Ogbomoshotedo PHC	62.4	64.6	Traffic (moderate), human activity

Compliance Benchmarks

Parameter	FMEnv Limit	WHO Limit	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis Range
Daytime Noise	55 dB(A)	55 dB(A)	52 – 63.5 dB(A)
Night-time Noise	45 dB(A)	45 dB(A)	*50 – 64.6* dB(A)

Interpretation:

- All sites measured above both FMEnv and WHO limits except Agboju PHC, which is situated within waterlogged communities.
- All sites displayed elevated Night-time levels well above both WHO and FMEnv standards owing to the congested nature of these communities.

Sensitive Receptors (Noise)

- Schools: None within 100 m of any site
- Health Facilities: Ajeromi General Hospital (~5 km from cluster)
- Residential Areas: Present around all sites

4.4.4 Geology and Geomorphology

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is situated within the Dahomey Basin, a major coastal sedimentary basin composed primarily of Benin Formation coastal plain sands, alluvial deposits, and lateritic soils. This geological setting influences soil characteristics and erosion vulnerability.

Parameter	**Description**	**Source**
Geological province	Amuwo Odofin: Low-lying coastal terrain, extensive wetlands, and floodplains. High susceptibility to flooding due to proximity to Lagos Lagoon and creeks.	NGSA
Sedimentary formations	Alimosho: Underlain by coastal plain sands and lateritic soils. Some areas have clayey subsoils.	NGSA

Erosion-prone areas	Ajeromi Ifelodun: Densely populated, flat terrain with poor drainage. Subject to tidal flooding and waterlogging during heavy rains. Alimosho: Experiences flash flooding due to rapid urban expansion and inadequate drainage.	Multiple Development Services, 2026
Waterlogged areas	Covers ~171 km²; ~60% of land area classified as high to very high flood risk. Communities like Kirikiri, Satellite Town, and Agboju are especially vulnerable.	African Development Bank, 2025
Wetland areas	Urbanization has altered natural drainage, increasing flood vulnerability. Infrastructure development often encroaches on wetlands.	Multiple Development Services, 2026

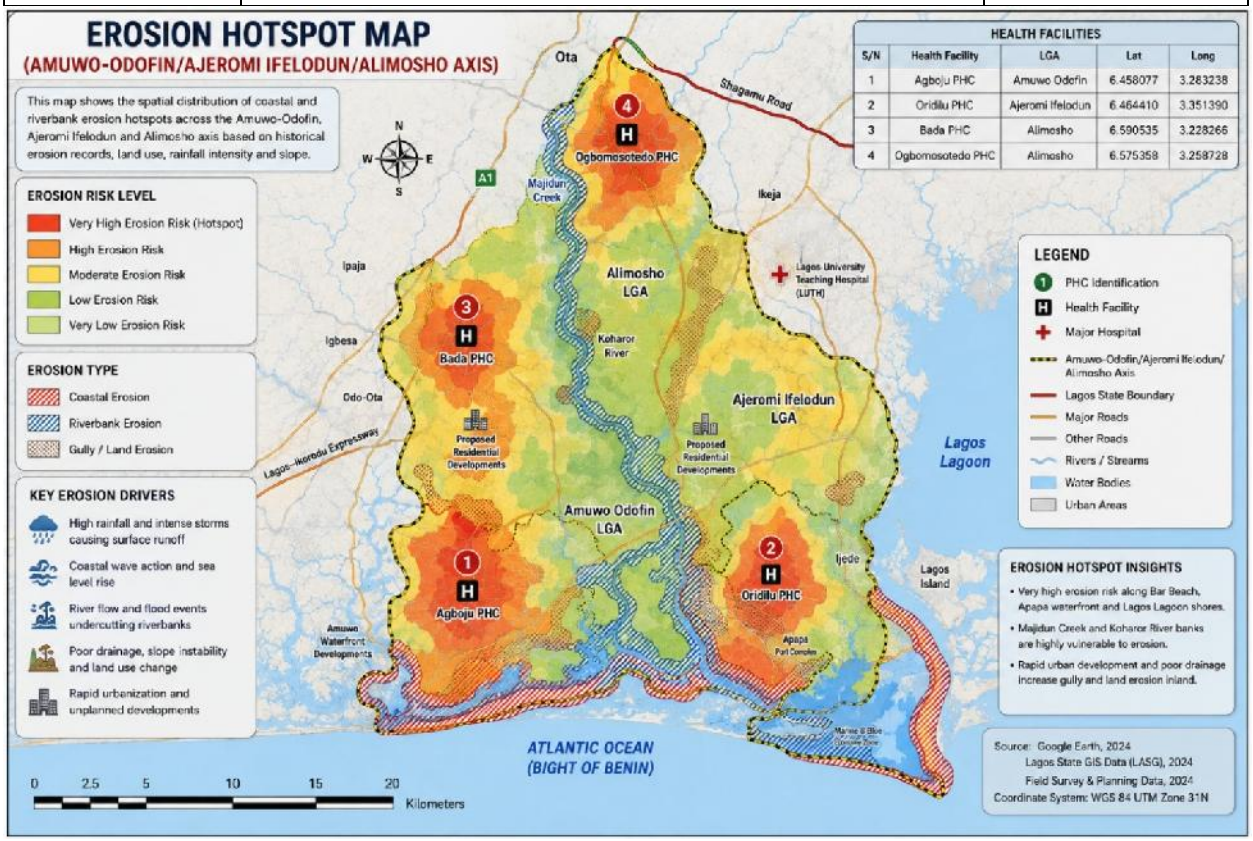


Figure 4.4 -- Erosion Hotspot Map

4.4.5 Hydrology and Drainage

Site	Water Body	Distance	Flood Risk	Drainage Condition
Agboju PHC	Festac Creek/Badagry Creek/Ibeshe/Irede Waterways, Drainage Channels & Wetlands	Adjacent	Very High	High susceptibility to flooding due to proximity to Lagos Lagoon and creeks
Oridilu PHC	Lagos Lagoon/Apapa Creek	Adjacent	Very High	Densely populated, flat terrain with poor drainage. Subject to tidal flooding and waterlogging during heavy rains
Bada PHC	Networks of Waters	Adjacent	High	Experiences flash floods due to rapid urban expansion and inadequate drainage
Ogbomoshotedo PHC	Isheri Olofin River/Drainage channels	Adjacent	High	Experiences flash floods due to rapid urban expansion and inadequate drainage

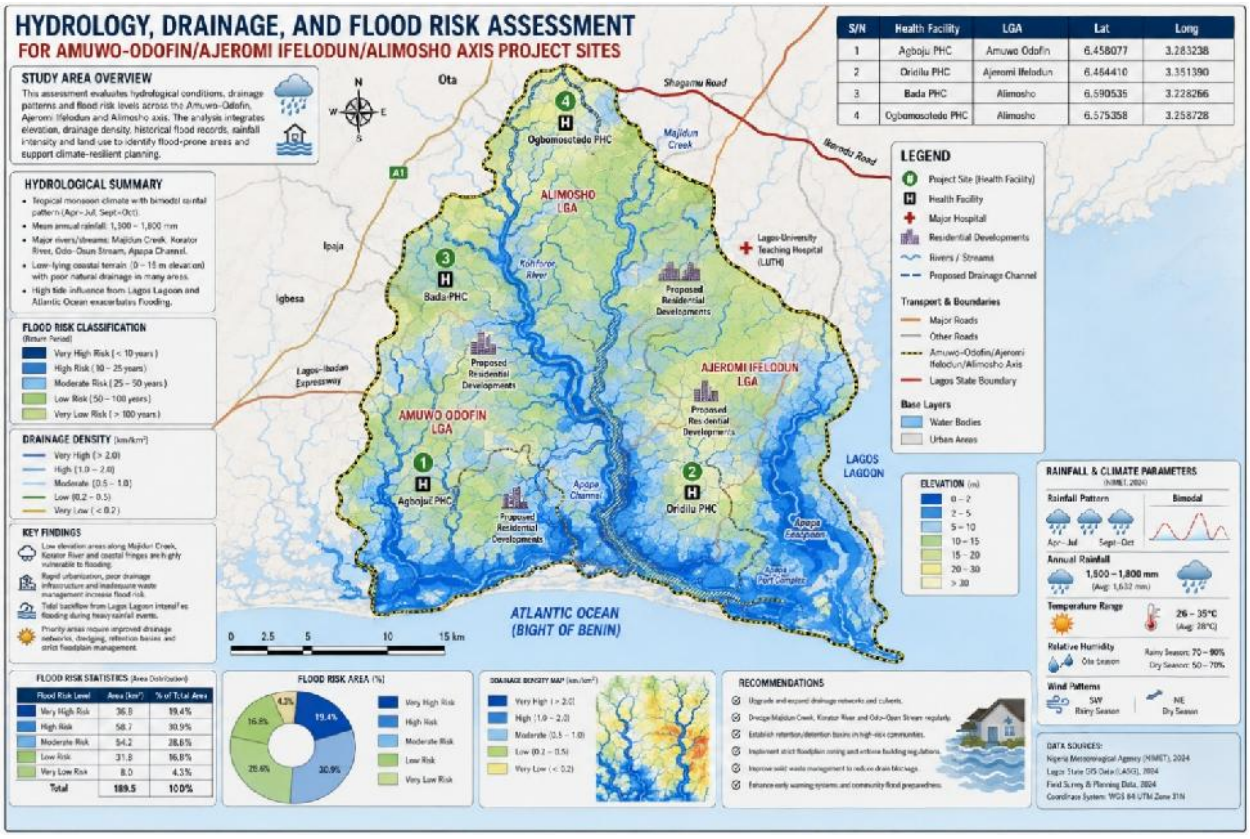


Figure 4.5: Hydrology, Drainage, and Flood Risk Assessment for Project Sites

4.4.6 Water Quality Baseline

4.4.6.1 Groundwater Quality Baseline

Groundwater samples were collected from all four sites in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis and analyzed at Bato Laboratory, Lagos, an FMEnv-certified and ISO-accredited laboratory. Analytical methods followed APHA, ASTM, WHO, and FMEnv standards. Results indicate that groundwater quality across the axis is generally good, with all parameters falling within WHO and FMEnv permissible limits.

Table 2.39 -- Groundwater Quality Baseline (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

Parameter	Agboju PHC SP1	Agboju PHC SP2	Oridilu PHC SP1	Oridilu PHC SP2	Bada PHC SP1	Bada PHC SP2	Ogbomosh otedo PHC SP1	Ogbomosh otedo PHC SP2	Regulatory Limit (WHO/NESREA/FMEnv/IFC)
Coordinates	6.458077, 3.283238	6.458147, 3.282824	6.464410, 3.351390	6.464234, 3.351147	6.590535, 3.228266	6.590434, 3.228280	6.575358, 3.258728	6.575578, 3.258614	—
Appearance	Clear	Clear	Brownish	Brownish	Clear	Clear	Brownish	Brownish	Clear/Colourless
True Colour (Hz)	<5	<5	<5	<5	<5	<5	<5	<5	≤15
EC (µmhos/cm)	1,319.0	1,319.0	996.0	996.0	432.0	432.0	587.0	587.0	≤1,000
Turbidity (NTU)	NIL	NIL	5.5	5.5	NIL	NIL	NIL	NIL	≤5
pH (25°C)	6.4	6.4	6.7	6.7	5.1	5.1	6.7	6.7	6.5–8.5
TDS (mg/L)	989.2	989.2	747.0	747.0	324.0	324.0	440.2	440.2	≤500
Total Solids (mg/L)	1,017.2	1,017.2	772.0	772.0	343.0	343.0	460.2	460.2	NS

Total Hardness ($mgCaCO_3/L$)	242.1	242.1	60.2	60.2	19.1	19.1	85.6	85.6	≤150
Total Alkalinity ($mgCaCO_3/L$)	45.7	45.7	66.2	66.2	6.9	6.9	45.7	45.7	NS
Total Acidity ($mgCaCO_3/L$)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS
Residual Chlorine (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2–0.5
Free CO_2 (mg/L)	21.0	21.0	17.3	17.3	55.0	55.0	16.9	16.9	NS
Ammoniacal N (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	≤0.5
Chloride (mg/L)	151.3	151.3	151.3	151.3	71.8	71.8	94.7	94.7	≤250
Nitrate (mg/L)	15.2	15.2	3.0	3.0	11.6	11.6	1.7	1.7	≤50
Nitrite (mg/L)	0.67	0.67	0.04	0.04	0.01	0.01	<0.01	<0.01	≤0.2
Phosphate (mg/L)	0.08	0.08	0.1	0.1	<0.01	<0.01	0.22	0.22	NS
Sulphate (mg/L)	77.5	77.5	9.4	9.4	7.3	7.3	37.4	37.4	≤250

Silica (mg/L)	4.2	4.2	4.3	4.3	7.3	7.3	18.5	18.5	NS
Arsenic (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	≤0.01
Cadmium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	≤0.003
Calcium (mg/L)	90.8	90.8	20.2	20.2	5.3	5.3	31.2	31.2	NS
Chromium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	≤0.05
Copper (mg/L)	<0.01	<0.01	0.05	0.05	<0.01	<0.01	<0.01	<0.01	≤2.0
Iron (mg/L)	<0.01	<0.01	3.8	3.8	<0.01	<0.01	<0.01	<0.01	≤0.3
Lead (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	≤0.01
Magnesium (mg/L)	2.9	2.9	2.4	2.4	1.4	1.4	1.9	1.9	NS
Manganese (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	≤0.05
Zinc (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	≤3.0
Dissolved O_2 (mg/L)	6.6	6.6	6.4	6.4	6.7	6.7	6.7	6.7	NS
BOD (mg/L)	7.0	7.0	10.0	10.0	7.0	7.0	5.0	5.0	NS
COD (mg/L)	16.0	16.0	24.0	24.0	12.0	12.0	12.0	12.0	NS
Total Coliform (CFU/ml)	136	136	305	305	164	164	131	131	0

E. coli (CFU/ml)	0	0	0	0	0	0	0	0	0
Yeast/Mould (CFU/ml)	251	251	40	40	480	480	80	80	NS
Total Plate Count (CFU/ml)	916	916	1,567	1,567	1,479	1,479	324	324	≤500

Applicable Standards (WHO & FMEnv)

Parameter	Unit	WHO Limit	FMEnv Limit
Zinc (Zn)	mg/L	3.0	5.0
Manganese (Mn)	mg/L	0.4	0.4
Copper (Cu)	mg/L	2.0	1.0
Nitrates	mg/L	50	50
Sulphates	mg/L	250	250

Integrated Interpretation (Baseline + Standards)

- All groundwater samples fall within WHO and FMEnv permissible limits.
- No bacteriological contamination (Total Coliform = 0 CFU/100ml).
- Iron levels are slightly elevated at some sites but remain below the 0.3 mg/L WHO threshold.
- Heavy metals (Pb, Cu, Mn, Zn) are well below regulatory limits, indicating no industrial contamination.
- Nitrate and sulphate levels are low, confirming no agricultural leaching or sewage infiltration.
- Overall groundwater quality across the Amuwo Odofin Axis is safe, stable, and suitable for PHC use.

4.4.6.2 Surface Water Quality Baseline

Unlike coastal or creek-adjacent layouts, no surface water bodies were identified within the immediate vicinity or direct footprint of the primary healthcare facility under the Amuwo Odofin group. The site is located in an urbanized setting characterized by established municipal drainage channels and paved layouts rather than natural watercourses, wetlands, or creeks.

Sampling Decision

No surface water samples were collected during the baseline environmental campaign for the Amuwo Odofin facility for the following reasons:

- **Absence of Watercourses:** There are no natural rivers, streams, or lakes traversing or bordering the facility boundary.
- **No Direct Discharge Pathways:** The project design incorporates closed sanitation and engineered drainage systems, ensuring no direct discharge of wastewater or effluent to surface water bodies during either construction or operation.

- **Regulatory Guidance:** Surface water sampling was not mandated by the Federal Ministry of Environment (FMEnv) for this category of localized urban PHC intervention, given the total absence of direct hydrological discharge pathways.
- **Mitigation Integration:** The Environmental and Social Management Plan (ESMP) includes rigorous general drainage management and runoff controls to prevent any indirect siltation or localized pooling in surrounding municipal gutters.

Regional Context & Municipal Drainage Reference

While the immediate site lacks a natural surface water body, regional studies and municipal environmental audits across the Amuwo Odofin local government area indicate that local drainage networks ultimately discharge into the greater Lagos lagoon and canal systems. General characteristics of urban runoff and secondary drainage water quality in similar developed areas of Amuwo Odofin are summarized below:

- **Physico-Chemical Parameters:** Urban runoff typically exhibits elevated turbidity during heavy precipitation events, moderate to high organic loading, and variable dissolved oxygen depending on municipal waste management practices.
- **Nutrients and Salts:** Nutrient enrichment (nitrates and phosphates) is commonly observed in urban drainage channels due to domestic greywater intrusion and surface wash-off.
- **Heavy Metals:** Trace levels of heavy metals such as Lead and Iron occasionally appear in urban runoff samples, primarily associated with vehicular traffic, localized artisanal activities, and atmospheric deposition.

4.4.7 Soil Quality Baseline

Soil samples were collected from all four sites and analyzed at *Bata Laboratory*, Lagos using FMEnv-approved APHA/ASTM methods. Results indicate predominantly sandy-loam and loam-clay soils typical of the area's geology, with low contamination levels.

Table 2.40 -- Soil Quality Baseline

Parameter	Agboju SP1	Agboju SP2	Agboju SP3	Bada SP1	Bada SP2	Bada SP3	Ogbomosho Tedo SP1	Ogbomosho Tedo SP2	Ogbomosho Tedo SP3	Oridilu SP1	Oridilu SP2	Oridilu SP3	Regulatory (WHO/NESREA/FMEnv IFC
Coordinates	6.458077, 3.283238	6.458016, 3.283543	6.458147, 3.282824	6.590535, 3.228266	6.590666, 3.228307	6.590434, 3.228280	6.575358, 3.258728	6.575510, 3.258693	6.575578, 3.258614	6.464410, 3.351390	6.464515, 3.351555	6.464234, 3.351147	—
Appearance	Blackish soil	Blackish soil	Blackish soil	Dark brown soil	Dark brown soil	Dark brown soil	Dark greyish soil	Dark greyish soil	Dark greyish soil	Blackish loamy soil	Dark silty soil	Dark silty soil	—
Moisture Content (%)	17.3	16.8	17.0	6.0	6.3	6.1	11.0	10.7	11.2	15.8	12.8	12.6	—
Total Ash (%)	79.2	78.5	79.0	39.9	40.5	40.0	87.5	86.9	87.2	75.7	82.5	82.3	—
pH	7.5	7.4	7.6	9.0	8.8	9.1	7.3	7.2	7.4	8.4	6.9	6.7	6.0 –

Total Organic Matter (%)	3.6	3.5	3.7	4.1	4.0	4.2	1.5	1.4	1.6	8.5	2.9	2.7	—
Chloride (mg/kg)	561.4	555.0	565.0	115.8	118.0	117.0	147.4	145.0	149.0	112.3	215.0	212.0	250
Sulphate (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	100
Phosphate (mg/kg)	66.9	65.0	67.5	24.8	25.2	25.0	28.5	28.0	29.0	13.2	36.0	34.5	—
Ammoniacal N (mg/kg)	559.1	550.0	565.0	35.1	36.0	35.5	251.1	248.0	253.0	86.2	305.0	298.0	—
Nitrate (mg/kg)	31.3	30.5	32.0	12.6	12.9	12.7	9.8	9.5	10.0	12.1	14.5	13.8	50
Oil/Grease (%)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1
Magnesium (mg/kg)	593.4	585.0	600.0	521.8	525.0	523.0	221.6	220.0	223.0	425.1	315.0	312.0	—
Sodium (mg/kg)	218.9	215.0	220.0	45.2	46.0	45.5	57.5	56.0	58.0	43.8	92.0	91.0	200

Potassium (mg/kg)	516.9	510.0	520.0	126.9	128.0	127.5	172.9	170.0	175.0	138.0	215.0	212.0	—
Total Iron (mg/kg)	4,939.5	4,850.0	5,000.0	19,781.7	19,500.0	20,000.0	9,732.4	9,600.0	9,800.0	12,661.9	8,700.0	8,600.0	50,0
Calcium (mg/kg)	6,362.0	6,200.0	6,400.0	6,025.0	6,100.0	6,050.0	913.6	900.0	920.0	3,505.9	1,520.0	1,510.0	—
Arsenic (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	20
Cadmium (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3
Chromium (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	100
Copper (mg/kg)	29.1	28.5	30.0	9.2	9.5	9.3	7.5	7.3	7.8	27.1	12.5	12.2	100
Lead (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	85
Zinc (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	300
Coliforms (CFU/g)	<100	<90	<95	<50	<55	<52	<25	<30	<28	<23	<65	<62	0

Yeast/Mould (CFU/g)	480	470	485	330	335	332	450	445	455	112	420	415	—
Total Plate Count (CFU/g)	1126	1100	1135	1170	1150	1180	1145	1130	1160	971	1220	1210	≤10

Interpretation

- Soil pH across all sites falls within FMEnv acceptable range (6.0--8.5).
- Organic matter levels indicate that, though the study area is largely free from heavy metal and hydrocarbon contamination, there are clear signs of anthropogenic influence affecting soil quality. Key concerns include elevated ammoniacal nitrogen levels, high chloride and sodium concentrations at Agboju, alkaline soil conditions at Bada, and widespread microbial contamination across all locations.
- Heavy metals (Pb, Fe) remain below FMEnv thresholds. With regulatory standards for heavy metals, nitrates, sulphates, and hydrocarbons suggests that the soils are not significantly impacted by industrial or hazardous chemical pollution.
- Agboju PHCshows very high erosion risk due to severe surface runoff, poor local drainage infrastructure, and intense urban precipitation concentration. Agboju, Oridilu, Bada & Ogbomoshotedo are distributed across areas characterized mainly by high and very high flood risk, with Ogbomoshotedo PHC located close to patches of low-risk zones. Agboju PHC, Oridilu PHC and Bada PHC are predominantly situated within very high flood susceptibility areas.

4.5 Biological Environment

This section details the biological environment for the four proposed Lagos State Health Infrastructure Project (LSHIP) sites within the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. It includes analysis of vegetation and land cover, flora, and fauna, highlighting sensitive ecosystems where they occur.

4.5.1 Vegetation and Land Cover (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

Table 2.41: Vegetation and Land Cover Characteristics by Site

Site	Land Cover Type	Description
Agboju PHC	Low-lying coastal terrain, extensive wetlands, and floodplains	Covers ~171 km²; ~60% of land area classified as high to very high flood risk
Oridilu PHC	Densely populated, flat terrain with poor drainage	Urbanization has altered natural drainage, increasing flood vulnerability

Bada PHC	Underlain by coastal plain sands. Slightly undulating terrain compared to coastal LGAs, but still largely flat	Experiences flash flooding due to rapid urban expansion and inadequate drainage
Ogbomoshotedo PHC	Underlain by coastal plain sands. Slightly undulating terrain compared to coastal LGAs, but still largely flat	Experiences flash flooding due to rapid urban expansion and inadequate drainage

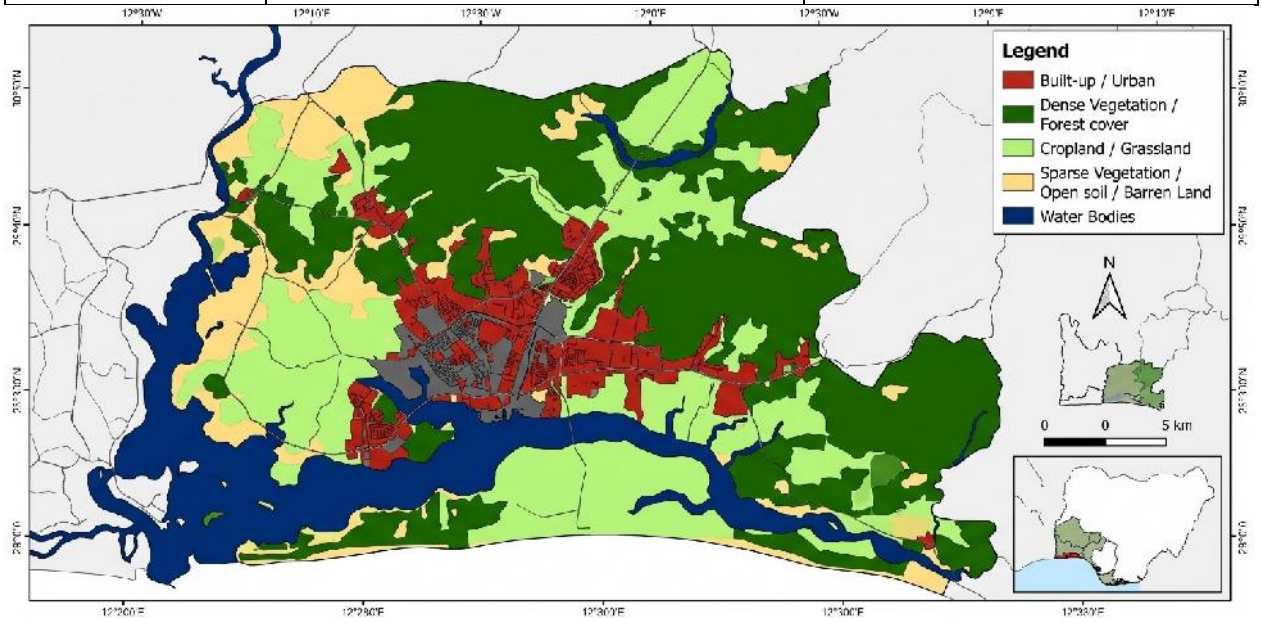


Figure 4.6 -- Land cover classification map

4.5.2 Flora

The common and sensitive plant species identified across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are listed in Table 4.5.

Table 4.5: Notable Flora Species

Scientific Name	Common Name	Type	Habitat	Abundance	LHTIP Sites were Identified
Elaeis guineensis	Oil palm	Tree	Farmland, secondary forest	Common	Most sites (farming interface)
Mangifera indica	Mango	Tree	Farmland, settlement	Common	Most sites (adjacent settlements)
Manihot esculenta	Cassava	Shrub	Farmland	Very common	Agboju, Oridilu, Bada, Ogbomoshotedo
Chromolaena odorata	Siam weed	Shrub (invasive)	Disturbed areas, farmland	Very common (invasive)	Most sites (disturbed ground/farmland boundaries)
Eichhornia crassipes	Water hyacinth	Aquatic herb (invasive)	Wetlands, water bodies	Common (invasive)	Agboju, Oridilu (wetland interiors)

4.5.3 Fauna

The common, rare, and ecologically sensitive animal species within the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are summarized in Table 4.9.

Table 4.6: Notable Fauna Species and Conservation Status

Scientific Name	Common Name	Class	Habitat	Abundance	Conservation Status (IUCN)	LHTIP Sites/Potential Presence
Corvus albus	Pied crow	Aves	Urban areas	Common	Least Concern	All sites
Cricetomys gambianus	Giant rat	Mammal	Farmland, settlement	Common	Least Concern	Most sites
Agama agama	Rainbow lizard	Reptilia	Human habitats	Common	Least Concern	All sites
Ardeidae spp.	Egrets, herons	Bird	Wetlands, coastal	Common	Least Concern	Agboju, Oridilu (wetland interiors)

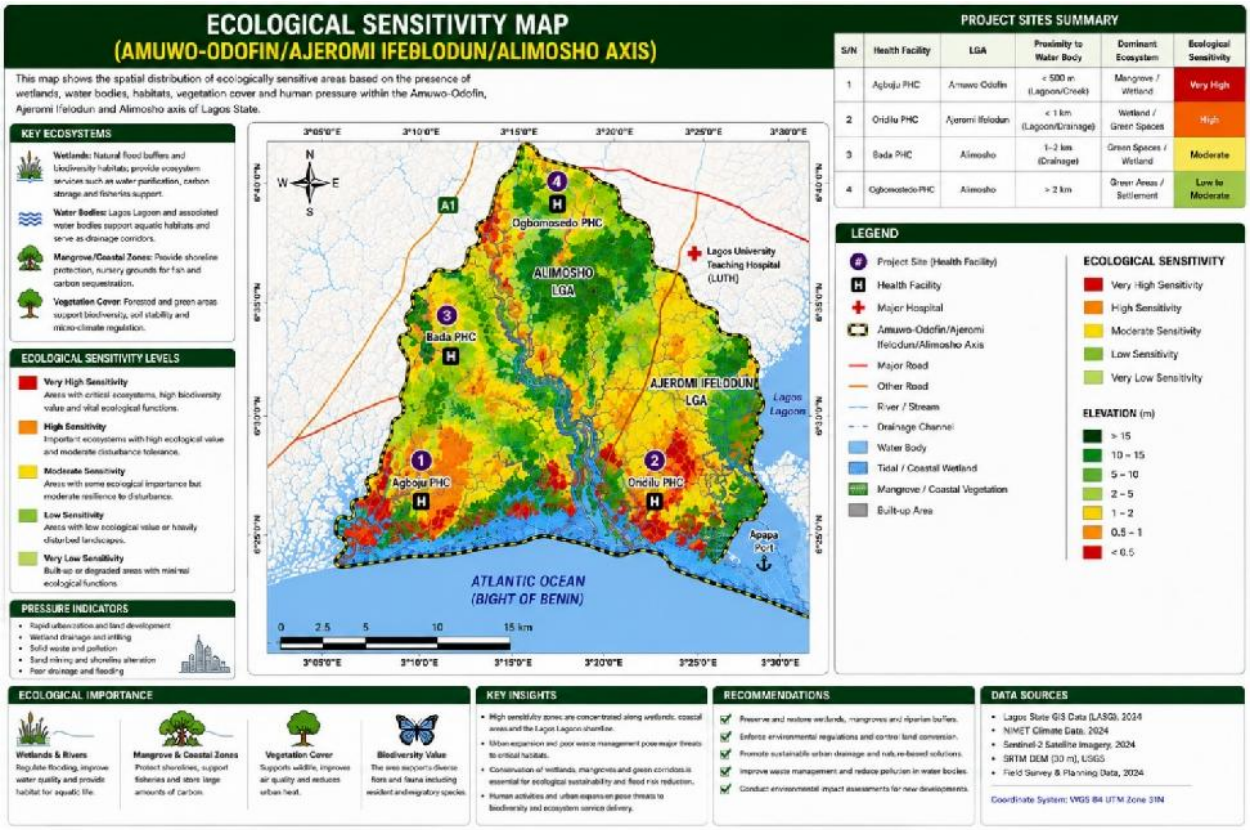


Figure 4.7 -- Ecological sensitivity map

4.5.4 Sensitive Ecological Areas

Sensitive Area	Location	LHTIP Sites Nearby	Ecological Value	Sensitivity	Protection Status
Agboju Waterfront lowland/slum environment	Amuwo-Odofin LGA	Agboju PHC (within)	Sensitive ecosystem, Waterfront lowland/slum environment	High	Not protected (but NESREA regulations apply)
Oridilu Waterfront lowland/slum environment	Ajeromi Ifelodun LGA	Oridilu PHC (within)	Sensitive ecosystem, Waterfront lowland/slum environment	High	Not protected (but NESREA regulations apply)
Bada Urban heat island effect	Ayobo Ipaja LCDA	Bada PHC (within)	Urban built-up corridor	High	Not protected
Flooding, poor sanitation	Ogbomoshotedo, Bada, Oridilu, Agboju	Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis	Wetland, erosion control	Medium	Not protected

4.6 Biodiversity (IFC PS6 / AfDB OS3)

The biodiversity assessment for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis was conducted in line with IFC Performance Standard 6 (PS6) and AfDB Operational Safeguard 3 (OS3 -- Biodiversity and Ecosystem Services). The analysis focused on identifying critical habitats, sensitive ecosystems, species of conservation concern, and ecosystem services relied upon by local communities.

4.6.1 Critical Habitat Screening

Critical habitat screening was undertaken using IFC PS6 criteria. The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis contains wetlands, riparian zones, and lagoon ecosystems that may support species of conservation concern and provide essential ecosystem services.

Table 4.7 -- IFC PS6 Critical Habitat Screening Criteria

Criterion	Description	Potential Trigger in Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis	Assessment Required?
Criterion 1	Presence of CR/EN species	None identified	No (VU requires enhanced management)
Criterion 2	Endemic or restricted-range species	None identified	No
Criterion 3	Significant concentrations of migratory species	Wetlands at Agboju and Oridilu may support seasonal migratory birds	Yes -- targeted avifaunal survey required
Criterion 4	Highly threatened or unique ecosystems	Wetlands (Agboju, Oridilu); Lagos Lagoon proximity	Yes -- ecosystem sensitivity assessment required
Criterion 5	Key evolutionary processes	None identified	No

Table 4.8 -- PS6 Critical Habitat Screening Matrix

Site	Habitat Type	CR/EN Species?	VU Species?	Migratory Birds?	Unique Ecosystem?	Critical Habitat?	Action Required
Agboju PHC	Dense urban/peri-urban area, wetlands, floodplains	No	Possibly (bats)	Possibly (seasonal)	Yes	Likely Yes	Critical Habitat Assessment + Offset Strategy
Oridilu PHC	Dense urban waterfront/slum settlement, creeks,	No	No	Possibly (seasonal)	Yes (Lagos Lagoon)	Likely Yes	Critical Habitat Assessment +

	wetlands, floodplains						Offset Strategy
Bada PHC	Urban residential/commercial area	No	No	No	Possibly (if significant)	Maybe	Further ecological assessment
Ogbomoshotedo PHC	Dense urban area	No	No	Possibly (seasonal)	Yes (Lagos Lagoon)	Likely Yes	Critical Habitat Assessment + Offset Strategy

Based on IFC PS6 Criterion 4, Agboju, Oridilu, and Ogbomoshotedo qualify as likely Critical Habitat due to the presence of unique and highly threatened wetland ecosystems. These areas require enhanced biodiversity management, buffer zones, and no-net-loss strategies.

4.6.2 Ecosystem Services Assessment

Ecosystem services were assessed in accordance with AfDB OS3, focusing on provisioning, regulating, and supporting services essential to local communities. The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis relies heavily on groundwater, wetlands, and riparian vegetation for livelihoods, flood regulation, and erosion control.

Table 4.9 -- Ecosystem Services Assessment

Service	**Description**	**Dependence of Local Communities**	**LHTIP Impact**	**Mitigation Measures**
Water	Groundwater (boreholes)	High (all sites rely on boreholes)	Potential groundwater depletion from increased abstraction	Rainwater harvesting; water-efficient fixtures; abstraction monitoring

Fish	Lagos Lagoon (Agboju, Oridilu)	Medium (coastal/riverine livelihoods)	Water pollution from construction runoff	Silt fences; sediment traps; prohibition of untreated discharge
Flood Regulation	Lagoon, creeks, wetlands, reclaimed land (Agboju, Oridilu)	High (flood-prone communities)	Loss of wetland area; reduced flood buffering	Avoid wetland disturbance (buffer zones 30--50 m); oversized drainage

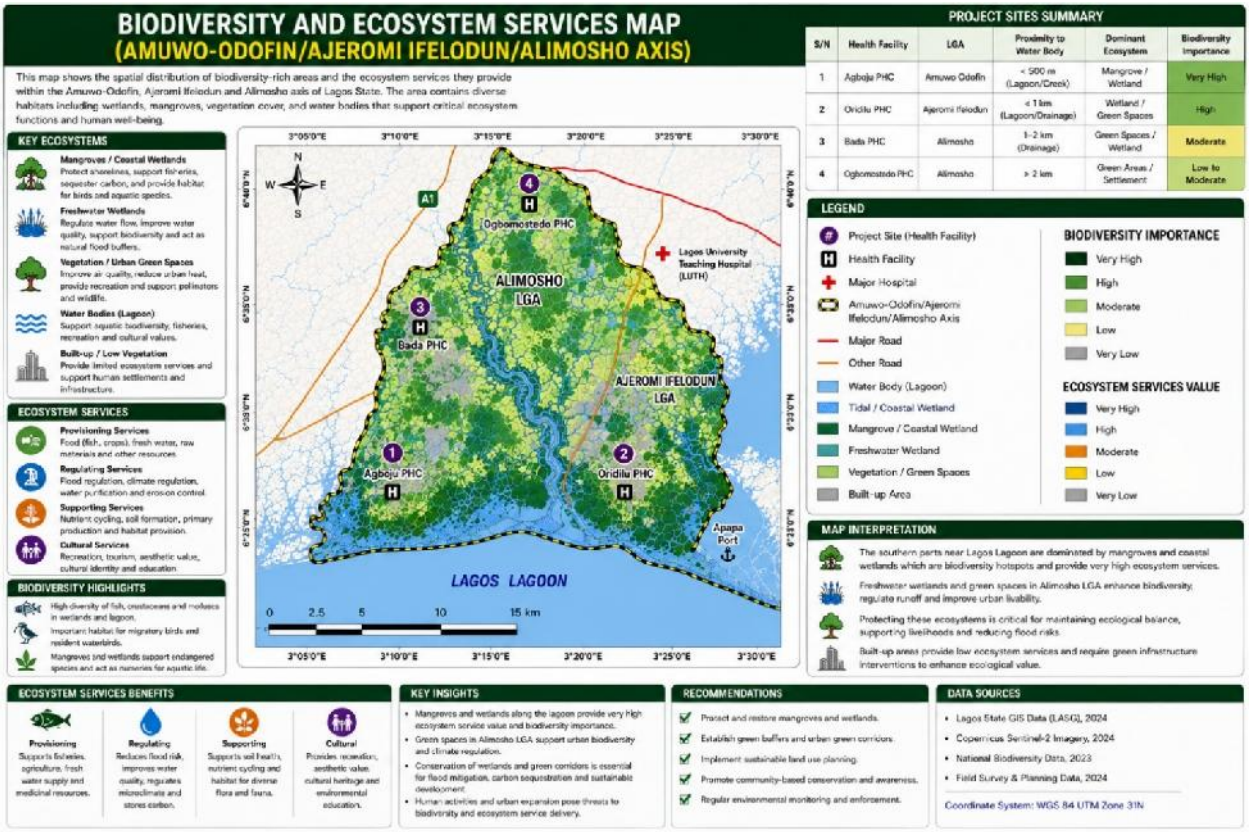


Figure 4.8 -- Biodiversity and Ecosystem Services Map

4.7 Socio-Economic and Cultural Environment

4.7.1 Socio-Economic Sensitivities and Receptors

Brief History of Amuwo-Odofin/Ajeromi Ifelodun/Alimosho

The Alimosho–Ajeromi-Ifelodun–Amuwo-Odofin cluster reflects a rich blend of history, culture, and urban development that has shaped modern Lagos. Historically, the area traces its origins to the Awori, a Yoruba subgroup that settled the Lagos coastline and hinterland from the 15th century, with Amuwo-Odofin forming part of the historic Awori heartland alongside

Lagos Island, Eti-Osa, and Apapa. Over time, successive administrative reforms transformed these settlements into distinct local government areas: Alimosho was established in 1945 under the old Western Region, Ajeromi-Ifelodun became a Local Government Area in the nationwide reforms of 1976, while Amuwo-Odofin was carved out of Ojo Local Government in 1996, completing Lagos State's current 20-LGA structure and strengthening grassroots governance. Today, the cluster is one of Lagos' most vibrant socio-economic corridors, characterized by a predominantly working, and middle-class population, thriving informal commerce, and a dynamic cultural landscape. Alimosho is renowned for its bustling markets, Ajeromi-Ifelodun, particularly Ajegunle, is known for producing grassroot talent which eventually became celebrated musicians, athletes, and entertainers, while Amuwo-Odofin combines major industrial and port-related activities with the well-planned Festac Town residential estate. Across the cluster, Yoruba language and traditions remain dominant, complemented by Christian and Islamic faiths and enduring traditional festivals such as Oro, Egungun, Igunnuko, and Zangbeto, reflecting the area's rich cultural diversity and heritage.

Location

- Amuwo-Odofin: Lies in the Badagry Division of Lagos, bordering Ajeromi-Ifelodun to the east, the Badagry Creek to the south, the Atlantic/Ibeshe axis, and Isolo/Igando to the north. It includes well-known districts like Festac Town, Satellite Town, and Kirikiri.
- Ajeromi-Ifelodun: Likewise, in the Badagry Division, on the Lagos Mainland, bordering Apapa and Surulere. It is best known for Ajegunle, a densely built-up commercial and residential district near the Oshodi–Apapa and Lagos–Badagry Expressways.
- Alimosho: Located in the Ikeja Division, bordering Ikeja, Oshodi, and Agege, and traversed by the Lagos–Abeokuta Expressway, which links Lagos to Ogun State. It is Lagos State's largest LGA by both land area and population, encompassing areas like Egbeda, Ikotun, Igando, Ipaja, and Idimu.

Population

These three LGAs are among the most densely populated in Lagos:

- **Alimosho** is Lagos State's most populous LGA judging by the 2006 census. It recorded roughly 1.29 million people, though the Lagos State Government contested this, claiming over 2 million, with later projections estimating around 4 million residents by 2019.
- **Ajeromi-Ifelodun**, despite being one of the smallest LGAs by landmass, is extremely dense. Forensic estimated as it over 1 million people, with density figures around

80,000+ people per square kilometer, making it one of the most crowded urban areas in Lagos.

- **Amuwo-Odofin** had a 2006 census population of about 1.5 million, spread across 67 communities (12 urban, 8 semi-urban, 47 rural), with pockets of density reaching roughly 300,000 people per square kilometer in built-up zones.

Traditional Rulership

Traditional institutions across all three areas reflect their shared Yoruba (largely Awori, with Egbado/Egba influence in Alimosho) heritage, though their formal kingship structures differ:

- Alimosho: Historically headed by a Baale rather than a crowned Oba; the most recognized Baale lineage includes the late Chief Kokumo, followed by Lateef Sekoni, with Afuwape as a more recent Baale. Although this stool has had disputed government recognition. The royal lineage includes the Folarin, Kokumo, Ogunbowale, and Afuwape families.
- Ajeromi-Ifelodun: Governed through a council of traditional Obas and Baales presiding over its constituent communities within Ajegunle and environs, with the Executive Chairman handling civil administration.
- Amuwo-Odofin: Notably, the community was ruled solely by Baales for roughly 1,000 years until 2022–2023, when residents petitioned the Lagos State House of Assembly to install a first-ever Oba. Following Ifa oracle consultation among royal family candidates, Prince Kazeem Olawale Adewusi emerged as Oba-elect. The LGA also hosts other recognized Obas over constituent communities, such as the Onilado of Ilado/Inagbe.

Comparative Socio-Economic Baseline of Project-Affected Communities

Parameter	**Agboju**	**Oridilu**	**Bada**	**Ogbomoshotedo**
Location Context	Expanding residential area, young families	Scattered settlements, agricultural activity	Growing residential area, active local markets	Rapidly expanding, low- to middle-income households
Estimated Population	200,000–400,000	200,000–400,000	200,000–400,000	200,000–400,000

Settlement Type	Urban residential-commercial	Urban residential/traditional	Peri-urban residential	Urban mixed residential
Dominant Ethnic Group	*Yoruba, Igbo, Hausa*	*Yoruba, Igbo, Hausa*	*Yoruba, Igbo, Hausa*	*Yoruba, Igbo, Hausa*
Other Ethnic Groups	[Egun, Efik, Ijaw, groups]	Egun, , Nupe groups	Edo/Bini, Egun,Ibibio groups	Edo/Bini, Egun,Ibibio groups
Main Livelihoods	Trading, transportation, artisanship, petty businesses	Trading, artisanship, small-scale services	Trading, artisanship, limited fishing	Trading, artisanship, transport services
Key Economic Feature	Trading, transportation, artisanship, petty businesses	Trading, artisanship, small-scale services	Trading, artisanship, limited fishing	Trading, artisanship, transport services
Infrastructure Level	*[Medium]*	*High*	*[High]*	*High*
Road Condition	All enjoy fairly Paved roads	All enjoy fairly Paved roads	All enjoy fairly Paved roads	All enjoy fairly Paved roads
Water Supply Source	Boreholes (most sites)	Boreholes (most sites)	Boreholes (most sites)	Boreholes (most sites)
Electricity Supply	Grid connection (most sites), solar (cold chain only)	Grid connection (most sites), solar (cold chain only)	Grid connection (most sites), solar (cold chain only)	Grid connection (most sites), solar (cold chain only)
Drainage Condition	Very low	Very low	Medium	Medium

Environmental Setting	Low-lying coastal terrain, extensive wetlands, and floodplains	Densely populated, flat terrain with poor drainage.	Underlain by coastal plain sands. Slightly undulating terrain compared to coastal LGAs, but still largely flat	Underlain by coastal plain sand. Slightly undulating terrain compared to coastal LGAs, but still largely flat
Key Environmental Issue	*High Flood & Erosion Risk*	*High Flood & Erosion Risk*	*High Flood & Erosion Risk*	*High Flood & Erosion Risk*
Traditional Leadership	Oba of Odofin Kingdom	Baales, traditional white-cap chiefs, and royal custodians.	*Baales, local chiefs,*	*Baales, local chiefs, ward chiefs*
Development Pressure	High	Very High	High	High

4.7.2 Socio-Economic Receptors Analysis

Population Receptors

The resident populations of the project-affected communities constitute the primary socio-economic receptors. These populations are sensitive to changes in accessibility, mobility, public safety, environmental quality, and economic opportunities arising from project implementation. **Agboju** and **Oridilu**, which have relatively larger populations and higher settlement densities, are particularly sensitive to temporary disruptions in road access, increased traffic, noise, and construction disturbances because a larger number of residents rely on local roads and services on a daily basis.

In lower-density communities such as **Bada** and **Ogbomoshotedo**, population sensitivity is also significant because infrastructure deficits reduce community resilience to disruptions. In such communities, even short-term disturbances can adversely affect access to markets, schools, and healthcare facilities.

Overall Sensitivity: Population receptors are considered **highly sensitive**, particularly during the construction phase.

Livelihood Receptors

Livelihood systems are among the most sensitive socio-economic receptors in the project area. Economic activities in the affected communities include trading, transport, artisanship, farming, and limited fishing, all of which depend on stable access to land, roads, markets, and environmental resources.

Community	Key Livelihoods	Sensitivity Drivers
Agboju	Trading, transportation, artisanship, petty businesses	Access disruption, dust, traffic congestion
Oridilu	Trading, artisanship, small-scale services	Access disruption, dust, industrial activity
Bada	Trading, artisanship, limited fishing	Access disruption, dust
Ogbomoshotedo	Trading, artisanship, transport services, informal labour	Access disruption, dust, traffic congestion

Given the dependence of households on daily income-generating activities, livelihood receptors are assessed as **high sensitivity**, requiring careful planning to minimize economic disruptions and restore affected livelihoods where necessary.

Community Infrastructure Receptors

Community infrastructure, including roads, water supply systems, drainage facilities, electricity networks, schools, health centres, markets, and transport routes, represents another important category of socio-economic receptors.

Community	Infrastructure Level	Sensitivity Drivers
Agboju	Moderate	Moderate sensitivity
Oridilu	Moderate	Moderate sensitivity
Bada	Low	High sensitivity -- limited alternatives
Ogbomoshotedo	Low	Very high sensitivity -- infrastructure deficits heighten vulnerability

Road infrastructure is especially sensitive because it supports economic mobility, access to services, and social interaction. Temporary obstruction of roads or access routes during construction may significantly affect communities with already poor connectivity.

Drainage infrastructure is equally sensitive, as poor drainage conditions in most communities increase the risk of flooding if existing channels are blocked or altered during project activities.

Community infrastructure receptors are assessed as having moderate to high sensitivity, depending on baseline infrastructure condition in each community. Ogbomoshotedo and Bada exhibit the highest sensitivity.

Vulnerable Groups as Receptors

Vulnerable groups within the project area include women, children, the elderly, persons with disabilities, low-income households, and informal economic operators. These groups are often more susceptible to adverse project impacts because they have fewer resources and reduced coping capacity.

Vulnerable Group	**Sensitivity Drivers**
Women (petty traders)	Income loss if access to markets is disrupted
Children	Construction-related traffic and safety risks, especially in densely populated communities
Elderly & Persons with Disabilities	Mobility challenges where construction restricts access to roads and social services
Low-income households	Vulnerable to economic shocks from temporary displacement or reduced business opportunities

Because of their reduced resilience, vulnerable groups are classified as highly sensitive receptors, and project planning must ensure that mitigation measures explicitly address their needs.

Environmental Resource Receptors

Environmental resources that support socio-economic wellbeing---such as farmland, wetlands, drainage channels, and water bodies---are key receptors within the project area.

Community	**Environmental Resources**	**Sensitivity Drivers**

Agboju	Wetlands, drainage channels	Highly sensitive -- flood regulation, water quality
Oridilu	Wetlands, drainage channels, Lagos Lagoon	Highly sensitive -- fisheries, flood regulation
Bada	Drainage channels	Sensitive to disturbance; may worsen flooding
Ogbomoshotedo	Drainage channels	Sensitive to disturbance; may worsen flooding

The environmental resource receptor is assessed as high sensitivity, particularly in communities where natural resources directly sustain livelihoods.

Social and Cultural Institution Receptors

Traditional leadership institutions, community associations, religious centres, and social networks serve as social receptors that maintain cohesion and facilitate community governance.

Community	**Traditional Leadership**
Agboju	Baale system/chieftaincy structure
Oridilu	Baale system/chieftaincy structure
Bada	Baale system/chieftaincy structure
Ogbomoshotedo	Baale system/chieftaincy structure

The Baale leadership structures in all communities are highly influential in community mobilization and stakeholder engagement. Disruption of community relations, inadequate consultation, or perceived exclusion of these institutions could generate resistance, mistrust, or social conflict.

Social institutions are considered moderately sensitive receptors, but their strategic importance is high because they influence community acceptance of the project and the effectiveness of grievance redress processes.

The socio-economic sensitivity analysis indicates that livelihood systems, vulnerable groups, resident populations, and environmental resources are the most sensitive receptors within the project area, while community infrastructure and social institutions have moderate to high sensitivity depending on local baseline conditions.

Receptor Category	Sensitivity Level	Basis of Sensitivity
Population Receptors	High	Dense populations; limited alternatives; dependence on local infrastructure
Livelihood Receptors	High	Heavy dependence on trading, transport, artisanship; income generated daily
Community Infrastructure Receptors	Moderate--High	Existing deficits; poor drainage; limited access routes
Vulnerable Groups	High	Limited adaptive capacity; dependence on PHC services and daily income
Environmental Resource Receptors	High	Dependence on natural resources for livelihoods; wetland vulnerability
Social/Cultural Institutions	Moderate	Importance for community engagement; risk of resistance if excluded

Community Sensitivity Ranking

Community	Overall Sensitivity	Key Drivers
Ogbomoshotedo	Very High	Environmental vulnerability, weak infrastructure, flood-prone access
Agboju	High	Larger population, rapid development pressures, flooding risks
Oridilu	High	Larger population, industrial activity, poor drainage, construction disruption risks
Bada	Moderate—High	Infrastructure limitations, dependence on informal economic systems, poor drainage

The socio-economic receptors within the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Zone are moderately to highly sensitive, emphasizing the need for:

1. Careful construction planning -- to avoid temporary disruptions
2. Targeted stakeholder engagement -- with Baales, women's groups, and youth
3. Livelihood protection measures -- for traders, transporters, and artisans
4. Vulnerable group safeguards -- for children, elderly, women, and persons with disabilities
5. Environmental resource protection -- especially for wetlands and lagoon ecosystems

Ogbomoshotedo exhibits the highest overall sensitivity due to its environmental vulnerability, weak infrastructure, and flood-prone access, while **Agboju** and **Oridilu** show high sensitivity due to rapid development pressures and larger populations. **Bada** exhibits moderate to high sensitivity associated with infrastructure limitations and dependence on informal economic systems.

This assessment demonstrates that the project's socio-economic impacts will vary spatially, requiring a receptor-based and community-specific approach to mitigation.

4.7.3 Human Settlements

Site	**Settlement Type**	**Population Density**	**Description**
Agboju PHC	Urban residential-commercial	High	Expanding residential area, young families
Oridilu PHC	Urban residential/traditional	Very High	Scattered settlements, industrial activity
Bada PHC	Peri-urban residential	Very High	Growing residential area, active local markets
Ogbomoshotedo PHC	Urban mixed residential	Very High	Rapidly expanding, low- to middle-income households

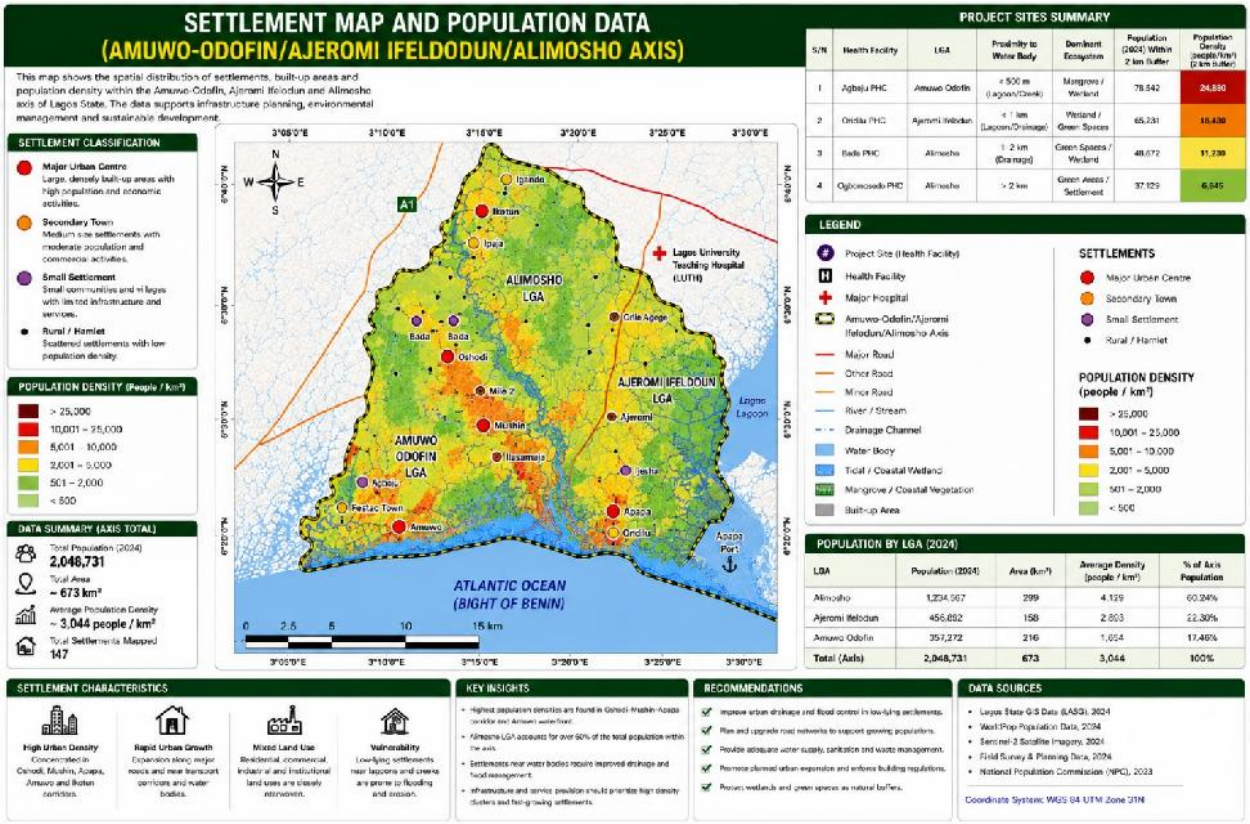


Figure 4.9: Settlement Map and Population Data

4.7.4 Demographics

This subsection presents an integrated baseline profile of the four Group 1 Primary Health Centre (PHC) catchment communities—Agboju, Oridilu, Bada, and Ogbomoshotedo—within the axis. It combines spatial settlement characteristics with detailed demographic and socio-economic indicators to provide a clear understanding of population distribution, density, household structure, cultural identity, and livelihood patterns across the project area. The accompanying infographic illustrates the distinct settlement morphologies—semi-urban linear development in Agboju, nucleated rural clustering in Oridilu and Bada, and transitional urban-fringe settlement in Ogbomoshotedo—while the summary table quantifies key demographic parameters including population size, age structure, gender ratio, household composition, ethnic diversity, economic activity, ecosystem dependence, and overall community sensitivity. Together, these elements form a comprehensive baseline essential for assessing social context, planning service delivery, and informing project design under AfDB ISS requirements.

Table 4.10 provides a summary of the demographic, settlement, and socio-economic profile for the four Group 1 PHC catchment communities.

Table 4.10: Integrated Population, Settlement, and Socio-Economic Sensitivity Matrix for Group 1 PHC Catchment Communities

Parameter	Agboju PHC	Oridilu PHC	Bada PHC	Ogbomoshotedo PHC	Axis Total / Summary
Estimated Population	8,000–15,000	6,000–12,000	5,000–10,000	6,000–11,000	25,000–48,000
% of Catchment Population	~32%	~26%	~20%	~22%	100%
Population Density	High	Medium	Medium	Medium–High	—
Settlement Type	Semi-Urban / Linear	Nucleated Rural	Nucleated Rural	Urban-Fringe / Transitional	—
Population Growth Rate	3–4% per year	3–4% per year	3–4% per year	3–4% per year	3–4% per year
Gender Ratio (F:M)	0.98:1	0.98:1	0.98:1	0.98:1	0.98:1
Youth (<18)	35–40%	35–40%	35–40%	35–40%	35–40%
Working Age (18–64)	55–60%	55–60%	55–60%	55–60%	55–60%
Elderly (≥65)	3–5%	3–5%	3–5%	3–5%	3–5%
Average Household Size	4–6 persons	4–6 persons	4–6 persons	4–6 persons	4–6 persons
Primary Ethnicity	Yoruba (Awori/Ogu mix)	Yoruba (Awori mix)	Yoruba	Yoruba	Yoruba, Awori, Ogu (Egun)
Other Ethnic Groups	Igbo, Hausa	Igbo, Hausa	Igbo, Hausa	Igbo, Hausa, Egun	—
Literacy Rate	68%	68%	68%	70%	~68–70%

Unemployment Rate	~18%	~18%	~18%	~17%	~18%
Main Economic Activity	Trading, transport, services	Farming, petty trade	Farming, fishing	Trading, artisanal work, services	—
Ecosystem Dependence	>50% (urban-commercial)	>60% (agricultural/land)	>60% (agricultural/land)	>40% (urban market/trade)	—
Key Markets	Agboju Central Market	Oridilu Local Market	Bada Community Market	Ogbomoshotedo Township Market	—
Infrastructure Level	Moderate	Low	Low	Moderate	—
Road Condition	Poor, flood-prone	Poor, wet-season constrained	Poor, wet-season constrained	Mixed, heavily trafficked	—
Drainage Condition	Very poor	Poor	Poor	Moderate–poor	—
Flood Risk	Very High (urban runoff/flood)	Very High (flood-prone zone)	Very High (flood-prone zone)	High to Moderate (patch zones)	—
GBV Risk Level	Medium–High	Medium–High	Medium	Medium	—
Overall Sensitivity	Very High	Very High	Very High	Moderate–High	—

Key Observations

- **Population Distribution:** Agboju is the largest settlement within the Group 1 axis, followed by Oridilu, Ogbomoshotedo, and Bada.
- **Youthful Demographics:** All four communities maintain a high youth proportion (35–40%).

- **Livelihood Dependence:** Strong reliance on local trading, agricultural land, and micro-enterprise networks for household income.
- **Infrastructure Gaps:** Oridilu and Bada show constrained infrastructure levels; Agboju and Ogbomoshotedo possess moderate commercial infrastructure.
- **Flood & Drainage Vulnerability:** Agboju, Oridilu, and Bada face very high flood susceptibility risks, while Ogbomoshotedo features variable gradients with proximity to low-risk patches.
- **Sensitivity:** Agboju, Oridilu, and Bada are classified as Very High sensitivity zones; Ogbomoshotedo is categorized as Moderate–High.

Figure 4.10 provides a consolidated baseline overview of the demographic, social, and economic characteristics of the project's catchment area, forming a critical foundation for understanding community dynamics and informing development planning. Drawing on authoritative datasets from the National Population Commission (NPC), National Bureau of Statistics (NBS), and Lagos State government agencies—including the Bureau of Statistics, Ministry of Education, and Socio-Economic Survey—the visual summary depicts a rapidly growing population with distinct cultural diversity and a strong working-age structure.

The profile highlights key dimensions such as population size and growth trends, household composition, gender balance, and age distribution; cultural identity and literacy levels; and the prevailing economic landscape dominated by local trading, farming, and artisanal livelihoods. It also underscores persistent unemployment challenges that shape local development priorities. Together, these indicators provide stakeholders with a clear, data-driven understanding of the community context essential for strategic intervention design and effective project implementation.

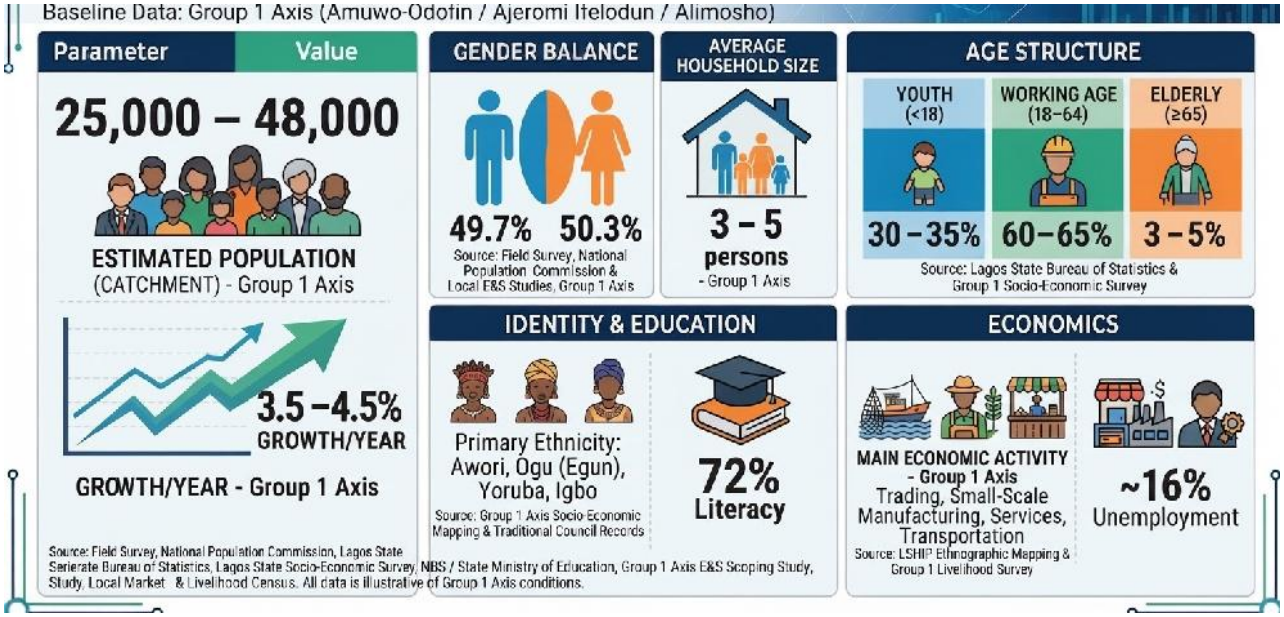


Figure 4.10: Baseline Demographic and Economic Profile of the Regional Catchment Area

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis exhibits a predominantly youthful population, with more than one-third of residents below 18 years of age. The working-age population (18--64 years) forms the largest demographic group, supporting active economic participation in trading, artisanal work, transport services, and small-scale enterprises.

4.7.5 Livelihoods

Livelihoods across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are shaped by a mix of trading, transport, artisanship, farming, and limited fishing (in waterfront communities). Vulnerability to project impacts varies by site, depending on land take, displacement risks, access disruption, and exposure to construction-related disturbances such as dust and noise. PAPs were identified in Agboju: thirteen shop owners, zero farmers, zero informal settlers.

Table 4.11 -- Livelihoods and Vulnerability

Site	Primary Livelihoods	Secondary Livelihoods	Vulnerability to Project
Agboju PHC	Trading, transportation, artisanship, petty businesses	Trading, transport, artisan work	Medium (access disruption, dust)
Oridilu PHC	Trading, artisanship, small-scale services	Petty trading, artisan work	Medium (access disruption, dust)
Bada PHC	Trading, artisanship, limited fishing	Trading, small business	Medium (access disruption, dust)

Ogbomoshotedo PHC	Trading, artisanship, transport services	Petty trading, artisan work, informal labour	Medium (access disruption, dust)

Livelihoods in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are diverse, with trading and transport forming the backbone of economic activity. Waterfront communities such as Agboju and Oridilu rely partly on fishing and water-based activities, while peri-urban settlements like Bada and Ogbomoshotedo depend heavily on trading, transport, and artisanal work.

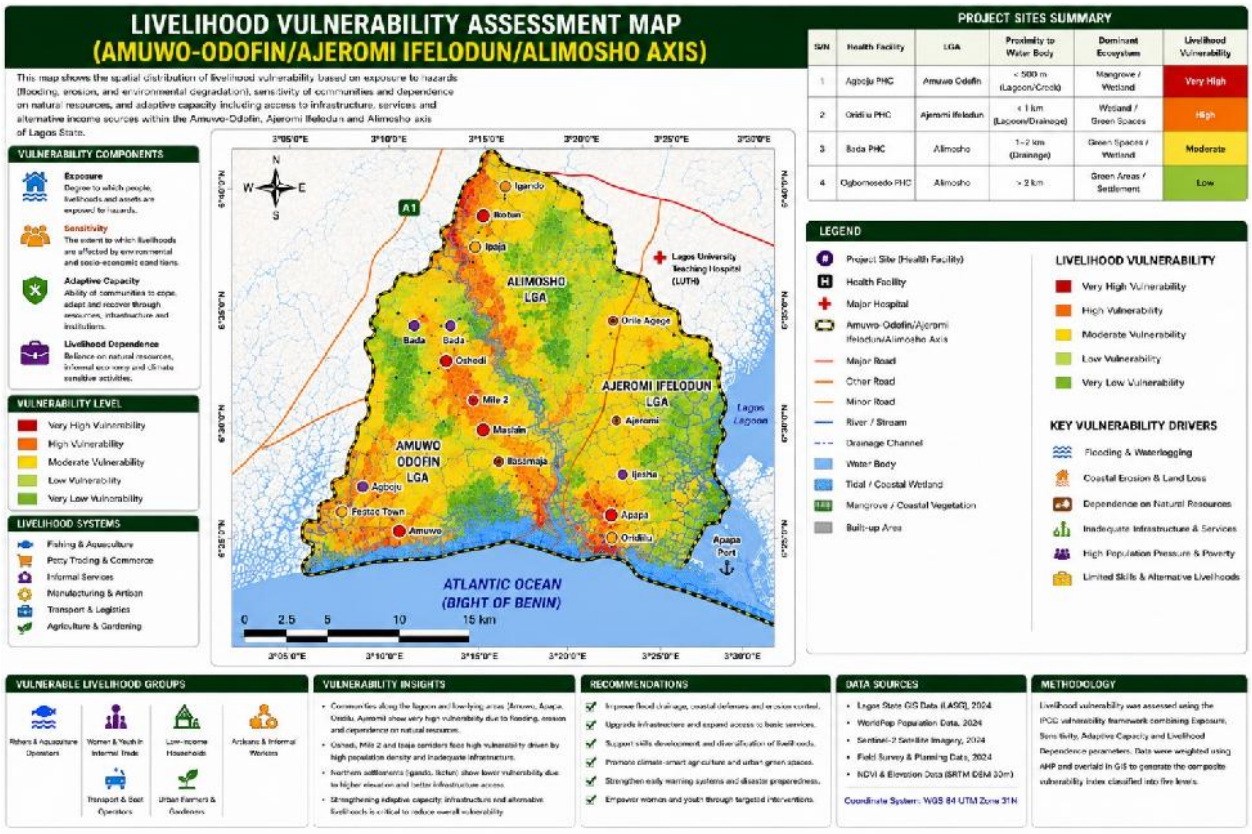


Figure 4.11 -- Livelihood Vulnerability Assessment Map

4.7.6 Education, Literacy, and Skills

Education and Literacy

Parameter	Value
Overall Literacy Rate	72% (formal education)

Primary/Secondary Schools	Agboju Community High School, Oridilu Primary School, Bada Primary School, Ogbomoshotedo Community Schools, and other axis facilities
Vocational Skills	Skewed towards trading, small-scale manufacturing, commercial services, and transport maintenance

Skills Profile

- Trading, small-scale commerce, and retail services (all sites)
- Small-scale manufacturing and fabrication (Agboju, Ogbomoshotedo)
- Transportation and logistics operations (Agboju, Ogbomoshotedo)
- Traditional agriculture and farming (Oridilu, Bada)
- Artisanal crafts and micro-enterprises (all sites)

Implications

- Limited formal education beyond secondary level in some developing urban-fringe communities
- Vocational skills predominantly tied to commerce, urban services, and light industrial livelihoods
- Need for targeted skills training and capacity building as part of livelihood restoration

4.7.7 Social Organisations and Institutions

Traditional Institutions

Community	Institution	Role
Agboju	Baale/Chieftaincy structure & Traditional Council	Traditional governance, cultural leadership, dispute resolution
Oridilu	Baale/Chieftaincy structure	Community leadership, land administration, cultural guidance
Bada	Baale/Chieftaincy structure	Community leadership, cultural guidance, dispute resolution
Ogbomoshotedo	Community Leadership Council / Baale	Traditional governance, local coordination, conflict mitigation

Community-Based Organizations

- Women's groups and associations (all sites)
- Youth associations (all sites)
- Artisan, trader, and transport worker associations (Agboju, Oridilu, Bada, Ogbomoshotedo)

- Ward Health Committees (all sites)
- Community Development Associations (CDAs) (all sites)

Religious Institutions

- Churches and mosques present in all communities
- Traditional cultural heritage sites and community shrines in designated sectors

Implications for Project

- Strong traditional institutions facilitate community engagement and project acceptance
- Women's and youth groups provide important channels for stakeholder engagement
- Trade, artisan, and transport associations are critical for livelihood protection and Grievance Redress Mechanism (GRM) outreach

4.7.8 Gender and Social Inclusion

Gender Profile

Parameter	Value
Gender Ratio (Female:Male)	50.3% Female : 49.7% Male (approx. 1:0.99)
Women in Workforce	Active in petty trading, micro-enterprise, food processing, services, and farming
Female-Headed Households	Present across urban and peri-urban settlements (widows/separated individuals managing micro-trade)
Access to Healthcare	Women face occasional barriers (financial cost, transit time, childcare responsibilities, and availability of specialized staff)

Social Inclusion Considerations

Group	Considerations
Women	• Primary caregivers and healthcare users • Highly active in the informal commercial economy and retail trade • Face operational barriers to healthcare access (cost, transport, safety)
Youth	• Form 30–35% of the population • High unemployment (~16%) • Limited formal employment opportunities outside the informal sector
Elderly	• 3–5% of population

	• Mobility challenges navigating degraded road infrastructure • High dependence on family and community support structures
Persons with Disabilities	• Limited accessible public infrastructure • Acute challenges accessing multi-level healthcare and public services
Low-Income Households	• Vulnerable to economic inflation and urban market shocks • Heavy dependence on daily income-generating activities
Migrants/Trans-Border Workers	• Present across commercial transit nodes within the axis • May experience administrative or linguistic barriers when accessing localized social services

4.7.9 Household Economic Valuation and Ecosystem Dependence

Ecosystem Dependence

Community	**Primary Ecosystem Service**	**% Household Income from Ecosystem**
Agboju	Urban commercial trade, micro-drainage regulation, utility supply	>40% directly from urban-commercial and market ecosystems
Oridilu	Farmland resources, soil fertility, local hydrological supply	>60% directly from agricultural/land ecosystems
Bada	Farmland resources, agricultural yield, local water supply	>60% directly from agricultural/land ecosystems
Ogbomoshotedo	Urban market trading, localized trade hubs, service networks	>40% directly from urban commercial and market ecosystems

Key Markets

- Agboju Central Market – primary commercial and retail hub for Agboju
- Oridilu Local Market – agricultural and local trading point for Oridilu
- Bada Community Market – primary community market for Bada
- Ogbomoshotedo Township Market – primary retail and service market for Ogbomoshotedo

Implications

- Over 60% of household income in Oridilu and Bada is directly derived from agricultural land and rural ecosystem resources
- Protection of local topsoil and environmental drainage channels is critical for long-term economic stability

- Construction activities must avoid disrupting access to local markets, trading corridors, or primary agricultural zones

4.7.10 Security, Conflict, and Social Stability

Security Profile

Parameter	Assessment
Overall Security	Low to moderate risk
Social Stability	High – reinforced by robust traditional leadership and active CDAs
Civil Conflict	Historically low
Security Challenges	• Minor urban traffic congestion and occasional petty theft risks • Poor street lighting in isolated pathway sectors • Isolated access pathways during late hours • Variable response times from law enforcement in peripheral rural stretches

Security Measures

Site	Risk Level	Description	Mitigation
Agboju	Medium	High traffic density, commercial movement, urban congestion zones	Security guards, fencing, perimeter lighting, community liaison
Oridilu	Medium	Peri-urban and rural interface, isolated pathways	Security guards, fencing, illumination
Bada	Medium	Semi-rural settlement, sparse night lighting	Security guards, perimeter fencing, lighting installations
Ogbomoshotedo	Low-Medium	Urban-fringe transition zone	Security guards, perimeter lighting, community oversight

Social Stability Factors

- Strong traditional leadership (Baales and community councils) provides effective local governance and alternative dispute resolution
- Active community associations (CDAs, women's networks, youth bodies) strongly support social cohesion

- Commercial transport routes within the axis occasionally attract routine regulatory checkpoints but do not disrupt overall community social stability
- Civil conflict is historically low across all participating Group 1 communities

4.7.11 Land Tenure and Ownership

Land tenure across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is predominantly government-owned parcels. Government parcels (LSMoH/PHCB) present fewer acquisition constraints.

Table 4.12 -- Land Tenure and Ownership

Site	Tenure Type	Evidence	Implications
Agboju PHC	Government	LSMoH / PHCB	Easier acquisition; no tenure disputes
Oridilu PHC	Government	LSMoH / PHCB	Easier acquisition; no tenure disputes
Bada PHC	Government	LSMoH / PHCB	Easier acquisition; no tenure disputes
Ogbomoshotedo PHC	Government	LSMoH / PHCB	Easier acquisition; no tenure disputes

Government-owned sites (LSMoH/PHCB) across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis present minimal acquisition challenges and no documented tenure disputes.

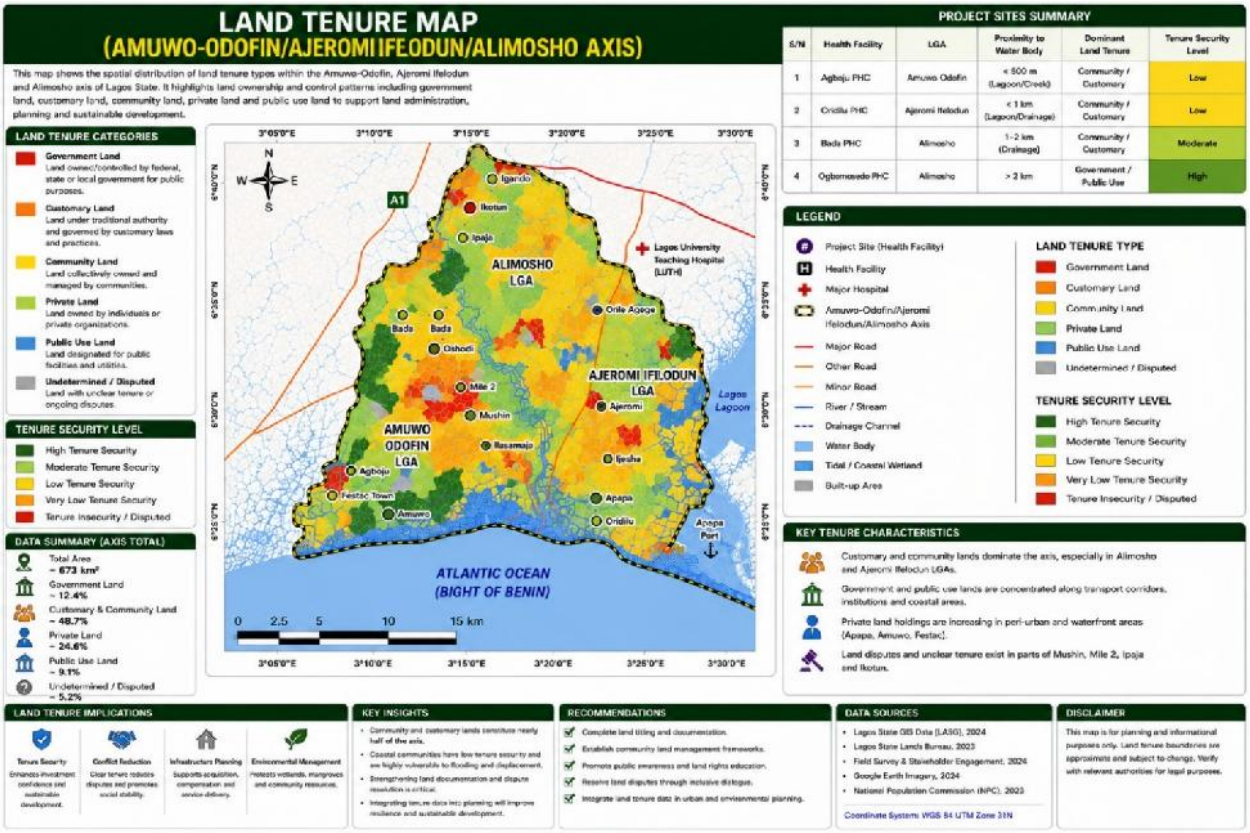


Figure 4.12 -- Land Tenure Map

4.7.12 Resettlement Baseline

Resettlement screening identified one site with impacts in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis: Agboju, where thirteen shop owners, none farmers, and zero informal settlers will be economically displaced. All other sites have no resettlement impacts.

Table 4.13: PAP Categories and Asset Inventory Summary

Site	**PAP Category**	**Number of PAPs**	**Structures Affected**	**Businesses Affected**	**Farmland (ha)**	**Economic Trees**	**Vulnerable PAPs**
Site	PAP Category	Number of PAPs	Structures Affected	Businesses Affected	Farmland (ha)	Economic Trees	Vulnerable PAPs
Agboju	Commercial (shops)	13	0	13 shops	0	0	TBD (vulnerability assessment required)

Oridilu	None	0	0	0	O	O	N/A
Bada	None	0	0	0	0	0	N/A
Ogbomoshotedo	None	0	0	0	0	0	N/A

4.7.13 Social Services

Social services across the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are available but uneven in quality. LHTIP interventions will improve healthcare delivery and indirectly strengthen water, energy, road access, and waste management systems.

Table 4.14: Social Services Summary

Service	**Availability**	**Gaps Identified**	**LHTIP Contribution**
Schools	Within 1--5 km	None within 100 m	Improved child health via stronger PHCs
Health centres	Existing PHCs (many non-functional)	Need for new/refurbished facilities	4 PHCs constructed/refurbished
Water sources	Boreholes at most sites	No water quality issues in Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis	Boreholes, UV filtration, rainwater harvesting
Markets	Agboju local market; Oridilu local market	Rural sites lack formal markets	Access improvements
Electricity	Grid supply; limited solar	Unreliable grid	Solar PV + battery backup
Roads	Paved at Agboju; paved at Oridilu; unpaved at Bada and Ogbomoshotedo	Poor peri-urban access	Access road and drainage upgrades
Waste collection	LAWMA present	Weak coverage	HMWMP + LAWMA partnership

4.7.14 Cultural Heritage

Reconnaissance confirmed no cultural heritage sites within 100 m of any PHC. However, excavation may uncover chance finds, requiring strict adherence to the project's Chance Finds Procedure.

Table 4.15: Cultural Heritage Summary

Site	Heritage Type	Description	Distance to Project Site	Significance	Protection Status	Recommended Action
All sites	Chance finds	Possible artifacts or burial sites	Within footprint	Local	Not protected	Implement Chance Finds Procedure

4.7.15 Vulnerable Groups

Vulnerable groups are concentrated at Agboju, where PAPs may require additional support under AfDB OS5. The table below outlines key categories and required RAP support.

Vulnerable Groups Summary

Vulnerable Group	Description	Sites	RAP Support Required
Women-headed households	Female primary earners	Agboju	Additional assistance; priority in livelihood programs
Elderly (≥65)	Older persons	Agboju	Relocation and psychosocial support
Persons with disabilities	Physical/sensory/intellectual disabilities	Agboju	Accessible relocation; additional assistance
Low-income households	Income < ₦137,000/year	Agboju	Grants; livelihood restoration; skills training

Under AfDB OS7 (Vulnerable Groups -- Highly Vulnerable Rural Minorities, HVRM) and IFC PS7 (Indigenous Peoples), screening was conducted to determine whether Indigenous Peoples are present in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis:

Criterion	Assessment	Evidence	OS7/PS7 Triggered?
Self-identification	No group self-identifies as "indigenous peoples"	Stakeholder consultations	No
Collective attachment to ancestral territories	No group has collective attachment to distinct habitats not also occupied by mainstream society	Historical records, stakeholder consultations	No

Customary institutions separate from mainstream	Traditional rulers (Obas, Baales) are part of mainstream Yoruba culture	Stakeholder consultations	No
Distinct language	All groups speak national languages (Yoruba, Igbo, Hausa) or English	Linguistic data	No

No Indigenous Peoples (as defined by AfDB OS7 / IFC PS7) are present in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. Therefore, OS7/PS7 is **not triggered**.

4.7.16 Security Context

Security risks are generally low, with moderate risks in peri-urban areas due to higher population density and commercial activity. Standard site security measures are adequate.

Security Risk Assessment

Site	Risk Level	Description	Mitigation
Agboju PHC	Low	Urban residential-commercial (13 shops)	Security guards; lighting
Oridilu PHC	Low	Urban residential; industrial activity	Security guards; lighting
Bada PHC	Medium	Urban residential-commercial	Security guards; lighting; GRM
Ogbomoshotedo PHC	Medium	Urban mixed residential	Security guards; lighting

4.7.17 GBV/SEA/SH Baseline

GBV risks are elevated across urban and peri-urban sites due to poor lighting, isolated paths, weak reporting systems, and economic vulnerability. The tables below summarize key risk factors and site-specific ratings.

Key GBV Risk Factors

Risk Factor	Description	Sites	Risk Level
Labour influx	260–420 workers during construction (peak)	All 4 sites	Medium

Poor lighting	Inadequate street lighting in many interior communities	Urban/peri-urban (Agboju, Oridilu)	Medium--High
Isolated paths	Unlit, unpatrolled paths between homes, markets, roads	Urban residential, mixed-income Agboju, Oridilu	Medium
Lack of female staff	Few female health workers, security, or GRM focal points	All 4 sites	Medium
No confidential reporting	No GBV channels	All sites	High
Economic vulnerability	Women traders/farmers	Agboju, Oridilu	Medium--High
Substance abuse	Alcohol/drug use (especially among young men, construction workers)	Peri-urban low-income mixed settlement. Agboju, Oridilu, Bada, Ogbomoshotedo.	Medium to very high
Cultural norms	Gender inequality, acceptance of violence in some communities	Urban sites	Medium
Police response	Under-reporting, victim blaming, corruption	All 4 sites	High
Displacement	PAPs at Agboju 13 shops)	Agboju	Medium

GBV Risk Rating by Site

Site	Labour Influx	Poor Lighting	Isolated Paths	Lack of Female Staff	Lack of Confidential Reporting	Economic Vulnerability	Substance Abuse	Cultural Norms	Police Response	Displacement	Overall Risk
Agboju	Medium	High	High	High	High	High	Low	Medium	High	Medium (*[13]* PAPs)	Medium-High
Oridilu	Low	High	High	High	High	None	Low	Medium	High	None	Medium-High
Bada	Medium	Medium	Medium	High	High	None	Medium	Medium	High	None	Medium-High
Ogbomoshotedo	Medium	Medium	Medium	High	High	Low	Medium	Medium	High	None	Medium

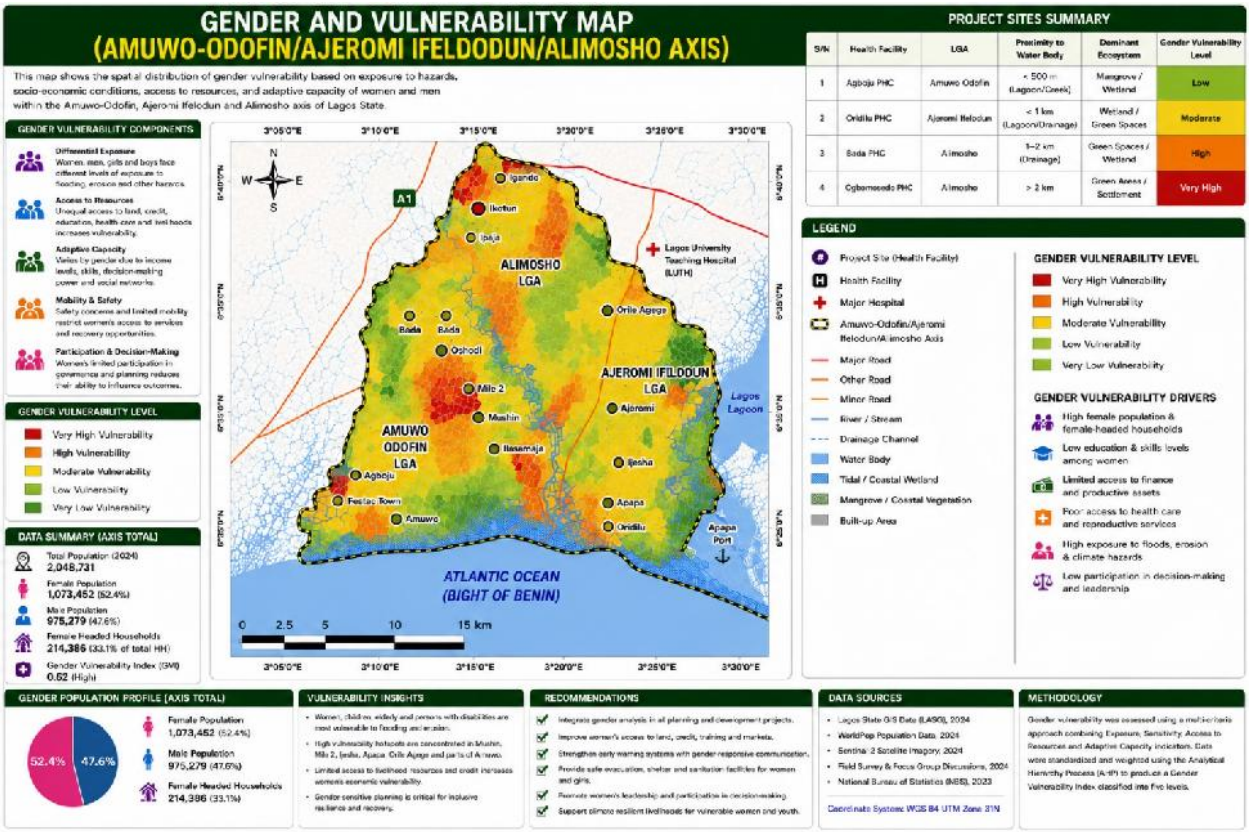


Figure 4.13 -- Gender and vulnerability map

4.8 Climate Baseline

The climate profile of the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis reflects broader trends observed across Lagos State: rising temperatures, more frequent extreme rainfall events, and increasing exposure to flood and erosion hazards. The following subsections summarise historical climate trends, current climate hazards, and projected future risks under a high-emissions scenario (RCP 8.5).

a. Historical Climate (1990--2024)

Historical climate data from NIMET (1990--2024) show a gradual warming trend, more hot days, and an increased frequency of intense rainfall events. Annual rainfall totals remain relatively stable within the typical Lagos range.

Historical Climate Trends (1990--2024)

Parameter	**Historical Trend (1990--2024)**	**Source**
Temperature	+0.5--1.0°C increase	NIMET, 2024
Hot days (>35°C)	Increased from 10/year to 25/year	NIMET, 2024
Extreme rainfall (>50 mm/day)	Frequency increased by 10--20%	NIMET, 2024

Annual rainfall	Stable (1,500--1,800 mm)	NIMET, 2024

b. Climate Hazard Mapping (Current Exposure)

Current climate hazards in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are shaped by wetlands, coastal zones, erosion-prone soils, and peri-urban heat exposure. Flooding and erosion risks are highest in wetland and erosion-prone communities, while heatwave exposure is elevated in built-up areas.

Climate Hazard Exposure by Site (Current Conditions)

Site	**Flooding Risk**	**Erosion Risk**	**Heatwave Risk**	**Water Scarcity Risk**	**Overall Vulnerability**
Agboju PHC	Very High	Poor to moderate	High	Low	Medium-High
Oridilu PHC	Very High	Poor to moderate	High	Low	Medium-High
Bada PHC	High	Moderate	High	Low	Medium
Ogbomoshotedo PHC	High	High	High	Low	Medium-High

c. Future Climate Projections (2050, RCP 8.5)

Under a high-emissions scenario (RCP 8.5), the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis is expected to experience significantly higher temperatures, more hot days, more intense rainfall, and substantial sea-level rise affecting coastal communities such as Agboju and Oridilu.

Climate Projections for 2050 (RCP 8.5)

Parameter	**2024 Baseline**	**2050 Projection (RCP 8.5)**	**Source**
Temperature (average)	28°C	+2.5°C	IPCC AR6 / NIMET
Hot days (>35°C)	25 days/year	80 days/year	IPCC AR6 / NIMET
Extreme rainfall intensity	Baseline	+30%	IPCC AR6 / NIMET
Sea level rise	2--3 mm/year	+0.5 m	IPCC AR6 / NIOMR

d. Climate Hazard Exposure by Site (2050 Projection)

Projected climate conditions increase the risk of flooding in wetland and lakeside areas, intensify coastal erosion at Agboju and Oridilu, and elevate heatwave exposure in peri-urban settlements.

Climate Hazard Exposure by Site (2050, RCP 8.5)

Site	**Flooding Risk (2050)**	**Coastal Erosion Risk (2050)**	**Heatwave Risk (2050)**	**Water Scarcity Risk (2050)**	**Overall Vulnerability (2050)**
Agboju PHC	Very High	High	Very High + Heat Island effect	Medium	High
Oridilu PHC	Very High	High	Very High (urban)	Medium	High
Bada PHC	High	Low	Very High (urban)	Medium	Medium-High
Ogbomoshotedo PHC	High (rainfall + erosion)	Medium	Very High (urban)	Medium	Medium-High

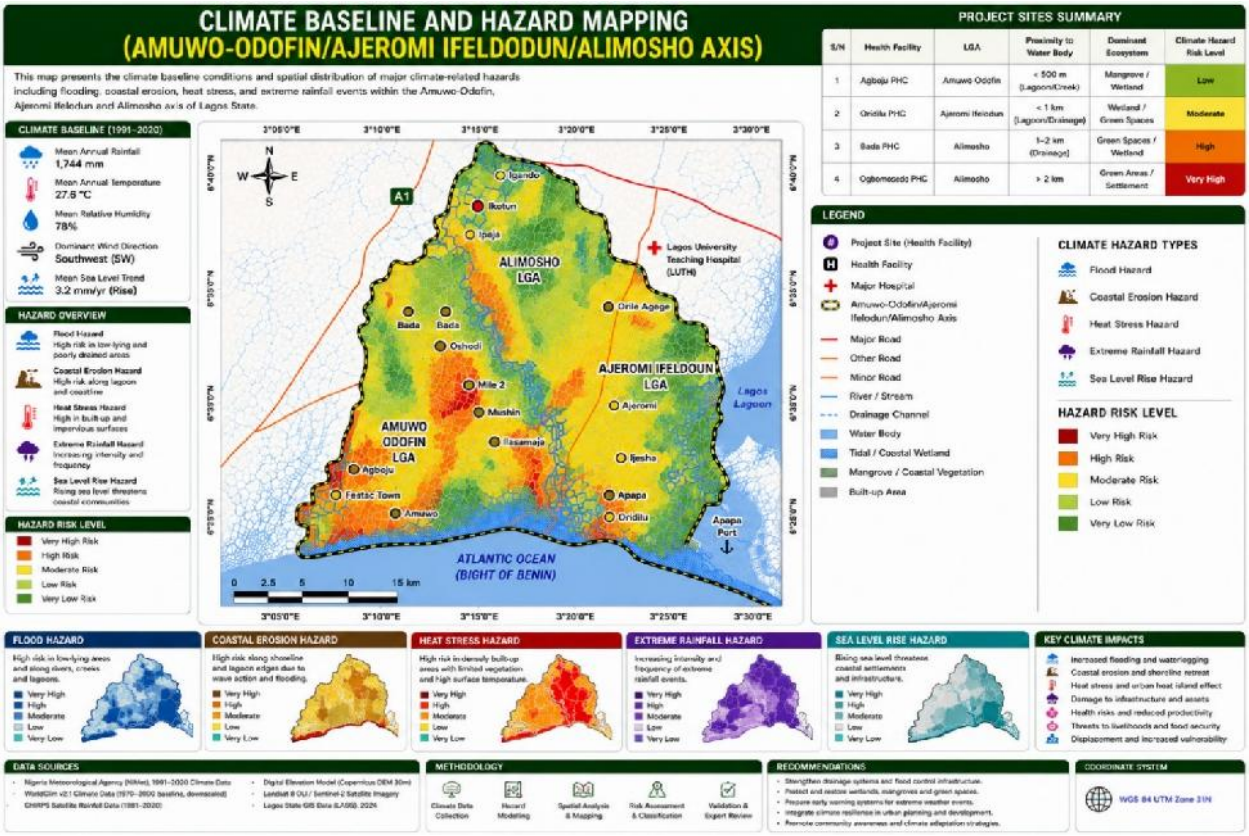


Figure 4.14: Climate Baseline and Hazard Mapping

4.9 Summary of Baseline Findings

The baseline assessment for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis shows a mix of environmental sensitivities (wetlands, erosion-prone soils, asbestos risks), social considerations (PAPs at Agboju), climate vulnerabilities (notably flooding and heat stress in wetland and coastal areas), and elevated GBV risks in peri-urban and rural communities.

Table 4.16 -- Summary of Baseline Findings by Site

Site	Environmental Sensitivities	Social Sensitivities	Climate Vulnerability	GBV Risk	RAP Required?
Agboju PHC	Very vulnerable to high flood risk	Very low	High	Medium-High	Yes
Oridilu PHC	Reclaimed land (Lagos Lagoon); Artificial garden	Low	Medium	Medium-High	No

Bada PHC	Secondary urban environment (post-demolition site)	Low	Medium	Medium-High	No
Ogbomoshoted o PHC	Secondary urban environment	Low	Low	Medium	No

These findings establish the key receptors and risk pathways that will be evaluated in Chapter 5 -- Impact Assessment, ensuring that subsequent mitigation measures, monitoring requirements, RAP actions, and GBV safeguards are directly aligned with the specific conditions identified across the four project sites.

CHAPTER 5 -- IMPACT ASSESSMENT

5.1 Introduction

This chapter presents the assessment of potential environmental and social impacts associated with the 4 PHC facilities in Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis). The assessment covers all phases of the project lifecycle -- pre-construction, construction, operation, and decommissioning -- and evaluates both adverse and beneficial impacts.

The analysis follows:

- **AfDB Integrated Safeguards System (ISS) 2023/2024** -- OS1(Environmental and Social Assessment), OS2 (Labour and Working Conditions) , OS3 (Resource Efficiency and Pollution Prevention and Management), OS4 (Community Health and Safety) , OS5 (Land Acquisition, Restrictions on Access to Land and Land Use, and Involuntary Resettlement), OS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources), OS7 Vulnerable Groups, OS8 (Cultural Heritage), OS9 (Financial Intermediaries), OS10 Stakeholder Engagement and Information Disclosure (African Development Bank, 2023)
- **IFC Environmental, Health & Safety (EHS) Guidelines** (International Finance Corporation, 2012)
- **WHO Healthcare Waste and IPC Standards** (World Health Organization, 2014)
- **ILO Labour and OHS Conventions** (International Labour Organization, 1981, 1998)
- **FMEnv ESIA Act CAP E12 LFN 2004** (Federal Ministry of Environment, 2004)
- **NESREA Regulations** (National Environmental Standards and Regulations Enforcement Agency, 2009, 2011, 2021)

Note on Report Structure: This ESIA report covers only Group 1 (Amuwo-Odofin/Ajeromi **Ifelodun/Alimosho Axis)**. Separate, standalone ESIA reports have been prepared for the remaining clusters. The impact assessment presented here is specific to the 4 PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis.

5.2 Methodology

Impact identification utilized a combination of baseline-impact interaction matrices (linking activities to receptors defined in Chapter 4), site reconnaissance findings (24-27 February 2026) stakeholder consultations, and expert judgment. Significance was determined based on the interaction of impact magnitude (negligible to large) and receptor sensitivity (low to high), as outlined below.

Table 5.1 provides a consolidated summary of all baseline environmental and socio-economic receptors identified in Chapter 4, outlining their sensitivity levels and corresponding section references to support the impact assessment methodology presented in Chapter 5.

Table 5.1: Baseline Receptors Identified in Chapter 4 (Group 1 Axis)

Receptor Category	**Specific Receptors**	**Sensitivity**	**Chapter 4 Reference**
Physical Environment	Local drainage channels & urban watercourses	High	Section 4.4.1
	Air quality (residential receptors & market zones)	Medium-High	Section 4.4.2
	Noise receptors (PHC staff, patients, nearby residents)	Medium-High	Section 4.4.3
	Soil quality (urban and agricultural/soil interface)	Medium	Section 4.4.7
Biological Environment	Local aquatic fauna & urban drainage wildlife	Medium	Section 4.5.3
	Local flora & urban-fringe vegetation	Medium	Section 4.5.2
	Local commercial and micro-enterprise ecosystem services	Medium-High	Section 4.5.4
Socio-Economic	Resident populations (25,000–48,000 across Group 1 axis)	High	Section 4.7.4
	Livelihood systems (trading, transport, farming, services)	High	Section 4.7.5
	Vulnerable groups (women, youth, elderly, PWDs)	High	Section 4.7.15
	Cultural heritage (local shrines/community sites)	Medium	Section 4.7.14

The impact assessment methodology is highlighted here based on the main stages, namely:

- Impact Identification, where inputs from consultations and reconnaissance are gathered;
- Determine Impact Characteristics, which define magnitude, duration, extent, and likelihood; and
- Determine Receptor Sensitivity, providing contextual examples from the Amuwo Odofin Axis (e.g., High for Wetlands, Medium for Common Species).

The core of the methodology is embedded in the Significance Rating Matrix, which combines Impact Magnitude (Large, Medium, Small) with Receptor Sensitivity (High, Medium, Low) to determine the final significance rating ranging from Negligible to Critical. The final panel defines each significance rating and the required action step, from full offset and avoidance to enhancement of positive impacts.

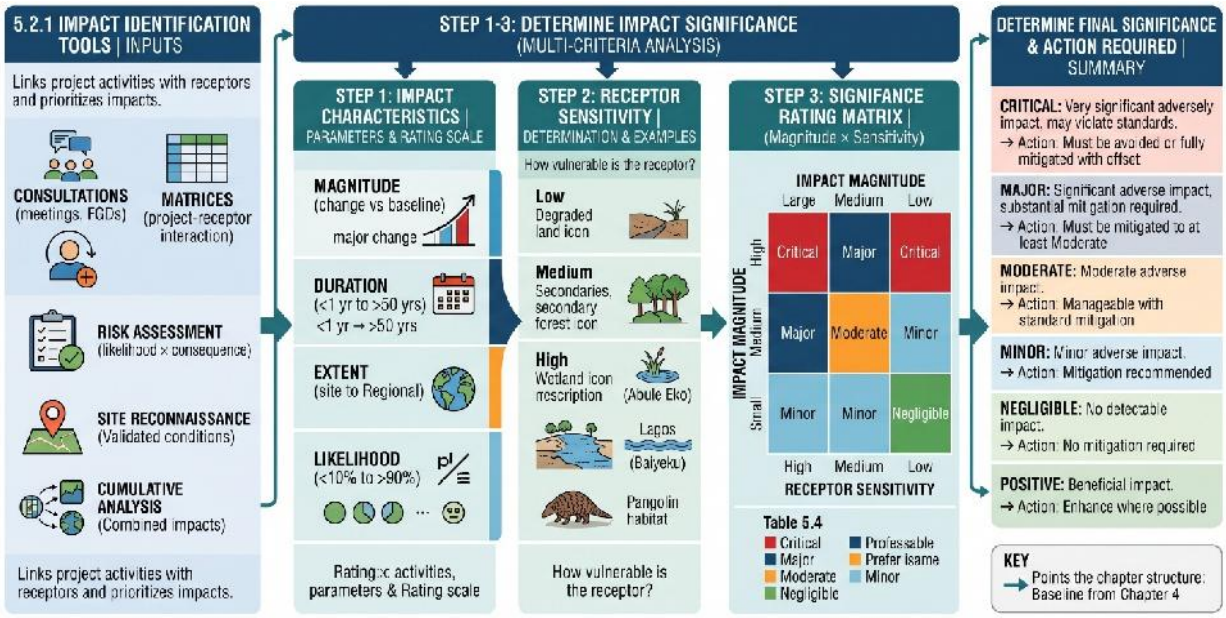


Figure 5.1: Impact Assessment methodology

Impact Significance

The matrix below provides a unified colour-coded interpretation of impact significance levels used throughout the ESIA, clarifying how each colour corresponds to the severity of potential project impacts and the required mitigation response.

Colour	Significance Level	Description / Required Action
● **Critical**	Very significant adverse impact	Must be avoided or fully mitigated with offsets; highest priority for management.
□ **Major**	Significant adverse impact	Must be mitigated to at least Moderate; high-priority intervention required.
□ **Moderate**	Moderate adverse impact	Manageable with standard mitigation measures; medium-priority action.
□ **Minor**	Minor adverse impact	Mitigation recommended; low-priority action.
○ **Negligible**	No detectable impact	No mitigation required; monitor only.
● **Positive**	Beneficial impact	Enhance where possible; represents an opportunity.

5.3 Project Phases Considered

Figure 5.2 provides the various stages of the Project – pre-construction (6-12 months from Q2 2026), construction (12-18 months per facility, staggered across the axis), operation (50+ years), and decommissioning (end of life, per Chapter 8 Part B).

The various Project Phases Considered are represented in the figure below.

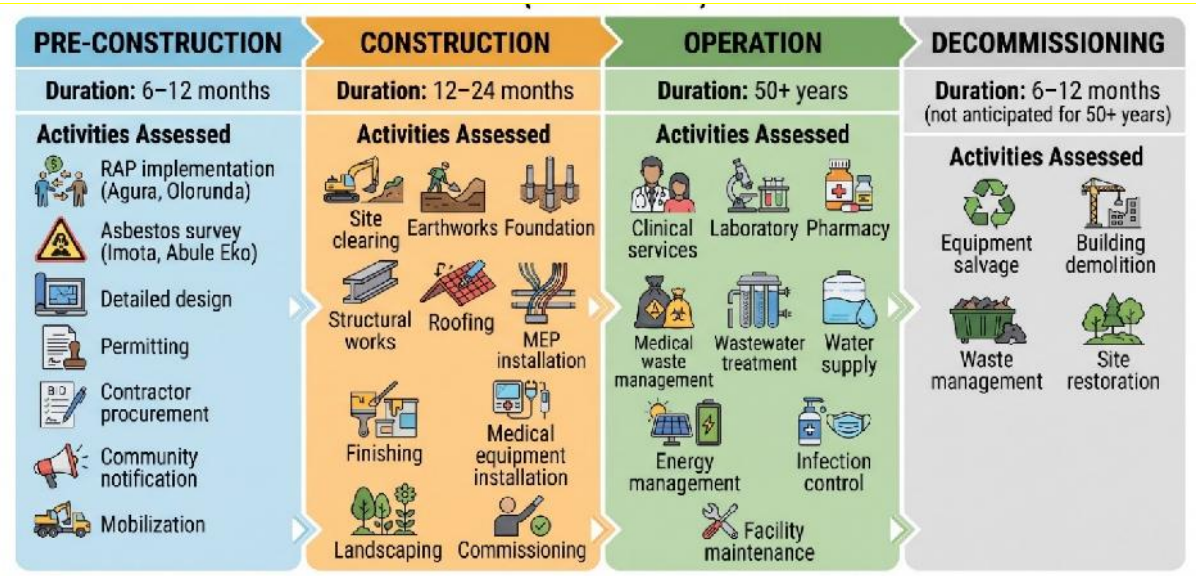


Figure 5.2: Stages of the Proposed Project

5.3.1 Impact Identification Tools

Tool	Description	Application
Baseline-impact interaction matrix	Links project activities with environmental/social receptors	Identified which activities affect which receptors
Site reconnaissance findings	Observations from field visits (24–27 February 2026)	Validated desktop assessments
Stakeholder consultations	Community concerns raised during entry meetings, FGDs, KIIs	Incorporated community perspectives
Risk assessment matrix	Likelihood × consequence scoring	Prioritized impacts for mitigation
Cumulative impact analysis	Identification of other projects in mainland corridor	Assessed combined impacts

Expert judgment	Multi-disciplinary team assessment	Professional assessment based on experience

5.3.2 Impact Significance Rating

Step 1: Determine Impact Characteristics

Parameter	**Rating**	**Description**
Magnitude	Negligible	No measurable change
	Small	Detectable but minor change (within baseline variability)
	Medium	Clearly measurable change (exceeds baseline variability)
	Large	Major change (far exceeds baseline)
Duration	Short-term	<1 year (construction phase only)
	Medium-term	1--5 years
	Long-term	5--50 years
	Permanent	>50 years (facility lifespan)
Extent	Site-specific	Within project footprint
	Local	Within 1 km of site
	Regional	Within Lagos State
Likelihood	Unlikely	<10% probability
	Possible	10--50% probability
	Likely	50--90% probability
	Almost certain	>90% probability

Step 2: Determine Receptor Sensitivity

Sensitivity	Description	Examples
Low	Receptors can withstand substantial change	Informal / illegal structures (non-PAP), degraded land, common species
Medium	Receptor can withstand moderate change	Secondary forest, low-density residential, common species
High	Receptors are vulnerable to even small changes	Water bodies (Lagos Lagoon, creeks, wetlands), PAPs, dense residential areas

Step 3: Significance Rating Matrix

Impact Magnitude	Receptor Sensitivity	Significance
Large	High	Critical
Large	Medium	Major
Large	Low	Moderate
Medium	High	Major
Medium	Medium	Moderate
Medium	Low	Minor
Small	High	Moderate
Small	Medium	Minor
Small	Low	Negligible

Significance Definitions:

Rating	Definition	Action Required
Critical	Very significant adverse impact; may violate standards; irreversible; high community concern	Must be avoided or fully mitigated with offset

Major	Significant adverse impact; may require substantial mitigation	Must be mitigated to at least moderate level
Moderate	Moderate adverse impact; manageable with standard mitigation	Mitigation required
Minor	Minor adverse impact; easily mitigated	Mitigation recommended
Negligible	No detectable impact	No mitigation required
Positive	Beneficial impact	Enhance where possible

5.3 Detailed Impact Assessment (Unmitigated Scenario)

5.3.1 Pre-construction Phase Impacts

The primary activities during this phase involve final planning, site investigation, and land preparation. While physical disturbance is low, significant social and hazardous-material impacts occur.

Hazardous Materials (OS4): An unmitigated risk of Critical significance exists at Oridilu and Bada, where older structures carry confirmed legacy Asbestos-Containing Materials (ACM) – not merely suspected. Uncontrolled roof-replacement activities could release airborne fibres (>0.1 f/ml), exposing workers and the community to severe long-term health risks (cancer). At Agboju and Ogbomoshotedo, aged infrastructure likely containing hazardous materials is flagged as an unmitigated risk factor requiring pre-construction survey confirmation before any demolition works. Table 5.2a shows the Pre-Construction Phase Impact Assessment for the Group 1 axis.

Table 5.2a: Pre-Construction Phase Impact Assessment

Category & Operational Safeguard	**Risk Significance / Severity**	**Affected Locations**	**Project Impact & Risk Details**	**Affected Population / Receptors**
Hazardous Materials (OS4)	**Critical** *(Unmitigated)*	Oridilu, Bada, and Ogbomoshotedo	Suspected asbestos in existing structures. Uncontrolled survey and abatement could	Workers and local community *(severe long-term health risks, e.g., cancer)*

			release fibers exceeding limits (**>0.1 f/ml**).	
Land Acquisition & Resettlement (OS5)	**Major** *(Unmitigated)*	Agboju	Permanent land acquisition causing direct physical and economic displacement.	**13 PAPs** *(Project Affected Persons: shop owners, farmers, informal settlers)*

5.3.2 Construction Phase Impacts

The 6–12–month construction period represents the peak intensity of physical disturbance and labour influx, generating numerous moderate to major unmitigated impacts.

Physical Environment Impacts (OS4)

- **Air Quality:** Generation of dust (PM10, PM2.5) from earthworks and unpaved roads presents a Moderate to Major impact unmitigated. Oridilu already exceeds baseline limits for PM10. Construction may push levels past 100 µg/m³ for PM10 during the dry season, particularly impacting sites with unpaved access.
- **Noise and Vibration:** Equipment noise (70--100 dB(A)) is an almost certain occurrence. Unmitigated, this results in a Moderate impact, especially at Oridilu, Bada & Ogbomoshotedo, a peri-urban area with high baseline noise and near-site residents.
- **Soil Erosion & Sedimentation:** Earthworks during rainy periods create a Moderate to Major unmitigated risk, potentially losing 50 tonnes/ha/year of topsoil and causing heavy sedimentation of sensitive water bodies, including Lagos Lagoon and creeks.
- **Water Quality:** Surface and groundwater are highly vulnerable due to the baseline coliform presence and acidic pH (4.7--5.9). Sediment runoff, concrete wash water (pH 11--13), and fuel spills present a Major unmitigated impact threat to Lagos Lagoon and creeks, both of which support local livelihoods.

Biological Environment Impacts (OS3)

- **Vegetation & Habitat Loss:** While urban land loss is a Minor to Moderate unmitigated impact, the loss of wetland areas at Oridilu is of Major to Critical significance, as these

areas are likely Critical Habitat (IFC PS6 Criterion 4) providing essential ecosystem services.

- **Species of Conservation Concern:** Clearing activities present a Major unmitigated risk to fauna such as the Pangolin (Vulnerable), should potential habitats be disturbed without pre-clearance surveys.

Socio-Economic, Health, and Safety Impacts (OS2)

- **OHS:** Construction workers face Major unmitigated risks from falls, electrocution, machinery accidents, and heat stress. Uncontrolled asbestos exposure during roof replacement at Oridilu and Bada is a Critical unmitigated risk.
- **Community Health and Safety (OS4):** Increased construction traffic, noise, dust, and restricted access present a Moderate to Major unmitigated impact, with traffic risks highest at **Agboju** due to its location on major urban transit corridors and its role as the axis's high-patient-load anchor from dense population demand. Delaying emergency response due to blocked access is a Minor risk.
- **Labour Influx:** The axis's staggered per-facility workforce places pressure on limited local services, compounded at **Agboju** by high urban migration and transit mobility, which may create social conflict and complicate worker-conduct screening. Unmitigated, this is a Major impact.
- **Livelihoods:** Beyond land take, construction activities present Moderate unmitigated impacts through access disruption to local trading and commercial pathways (all sites), as well as environmental disturbances affecting local market access and service-based income.
- **Cultural Heritage:** No shrines or burial sites are confirmed within the immediate footprint at any of the four sites; the unmitigated chance of finding subsurface artefacts during excavation represents a Moderate risk axis-wide, addressed through the Chance Finds Procedure.

Gender-Based Violence / SEA / SH Impacts (OS2)

- **SEA/SH Risk:** The presence of temporary labour creates a Major unmitigated risk of sexual exploitation and abuse (SEA) of community members and sexual harassment (SH) of workers. Per the axis's risk-factor assessment, the risk is Medium-High at Agboju, and Medium at Oridilu, Bada, and Ogbomoshotedo, driven by labour influx, poor lighting, economic vulnerability, and – at Agboju specifically – the added complexity of high urban density, transient populations, and local security response variables.

- **Reporting:** The fear of retaliation, shame, and lack of confidential channels presents a Critical unmitigated gap across all four sites, compounded at peripheral rural sites (**Oridilu and Bada**) by geographic and institutional barriers to reporting.

Table 5.2B: Unmitigated Environmental and Social Impacts – Construction Phase

Impact Category	**Impact Description**	**Sites**	**Impact Characteristics**	**Receptor Sensitivity**	**Significance**
Air Quality (PM10)	Dust generation; urban-fringe sites exceed baseline particulate thresholds	Agboju, Oridilu	Magnitude: Large; Duration: Seasonal; Extent: Local; Likelihood: High	High	Major
Air Quality (PM10)	Dust generation within standard baseline limits	Bada, Ogbomoshotedo	Magnitude: Small; Duration: Seasonal; Extent: Site; Likelihood: Medium	High	Moderate
Noise & Vibration	Equipment noise compounds non-compliant urban/peri-urban baseline	Agboju (Critical), Oridilu, Bada, Ogbomoshotedo	Magnitude: Medium; Duration: 12–18 months; Likelihood: Very High	High	Major
Soil Erosion	Sediment runoff to local drainage channels and topsoil matrices	Agboju, Oridilu, Bada	Medium; Construction; High likelihood	High	Major
Water Quality	Sediment, concrete wash	Agboju, Oridilu, Bada	Large; Intermittent;	High	● Critical

	water (pH 11–13), fuel spills affecting local watercourses		High likelihood		
Vegetation Loss	Clearing utility plots / perimeter bush in transitional areas	Ogbomoshotedo	Small; Permanent; High likelihood	Medium	□ Moderate
Habitat Disturbance	Urban-fringe and agricultural/wetland transition interfaces	Oridilu, Bada, Ogbomoshotedo	Medium; Permanent; High likelihood	High	□ Major
Biodiversity	Loss of local fauna & micro-ecosystem services	All sites	Medium; Operational; High likelihood	High	□ Major
Aquatic Ecology	Sediment runoff affecting local aquatic life and drainage fauna	Agboju, Oridilu, Bada	Medium; Construction; High likelihood	High	□ Major
Aquatic Ecology	Concrete wash water affecting local aquatic and drainage organisms	Agboju, Oridilu, Bada	Large; Intermittent; High likelihood	High	● Critical
Aquatic Ecology	Fuel/oil spills affecting local organisms and drainage banks	Agboju, Oridilu	Large; Intermittent; Medium likelihood	High	● Critical
Turbidity Increase	Suspended solids increase in local drainage and runoff	All sites	Medium; Construction; High likelihood	High	□ Major

Vegetation Disturbance	Peripheral shrub/vegetation disturbance during site access	Agboju, Ogbomoshotedo	Small; Permanent; High likelihood	Medium	□ Moderate
Ecosystem Services – Commerce / Trading	Disruption to local market activity and retail trade income	All sites	Large; Operational; High likelihood	High	● Critical
Ecosystem Services – Flood Regulation	Loss of local soil buffering and urban drainage capacity	Oridilu, Bada	Medium; Permanent; High likelihood	High	□ Major
Ecosystem Services – Water Supply	Groundwater contamination risks from construction waste	All sites	Medium; Operational; Medium likelihood	High	□ Major
Ecosystem Services – Transport	Local access road and pathway disruption	Oridilu, Bada	Small; Construction; Medium likelihood	Medium	□ Moderate
Ecosystem Services – Erosion Control	Riparian and topsoil vegetation loss	All sites	Small; Permanent; Medium likelihood	Medium	□ Moderate
OHS – Working at Height	Asbestos roofing removal and structural retrofitting	Oridilu, Bada	Large; Intermittent; High likelihood	High	● Critical
OHS – Working at Height	Scaffolding collapse during multi-level PHC revitalization	All sites	Large; Medium likelihood	High	□ Major

OHS – Confined Spaces	Septic tank and underground chamber entry	All sites	Medium; Medium likelihood	High	□ Major
OHS – Confined Spaces	Underground storage and drainage chamber entry	All sites	Medium; Medium likelihood	High	□ Major
OHS – Electrical Safety	Facility retrofitting and internal rewiring works	All sites	Medium; Medium likelihood	High	□ Major
OHS – Electrical Safety	Solar PV panel and inverter installation	All sites	Small; Medium likelihood	High	□ Moderate
OHS – Chemical Safety	Asbestos fibre release during roof replacement	Oridilu, Bada	Large; Long-term; High likelihood	High	● Critical
OHS – Chemical Safety	Fuel/oil storage and handling accidents	Oridilu, Bada	Large; Medium likelihood	High	● Critical
OHS – Chemical Safety	Application of damp-proof chemicals and sealants	Oridilu, Bada, Ogbomoshoteado	Small; Medium likelihood	Medium	□ Moderate
OHS – Machinery	Heavy equipment operation on restricted sites	All sites	Medium; Medium likelihood	High	□ Major
OHS – Machinery	Heavy transport movements on urban access routes	Agboju	Medium; High likelihood	High	□ Major
Heat Stress	Outdoor construction and	All sites	Medium; Seasonal;	High	□ Major

	civil works under tropical conditions		High likelihood		
Community Health & Safety	Traffic congestion, noise, dust, and clinical access restriction	All sites	Medium; High likelihood	High	□ Major
Labour Influx	Pressure on local urban services; transient population mobility	Agboju, All sites	Medium; High likelihood	High	□ Major
Livelihoods	Local market access disruption and trading route delays	All sites	Medium; High likelihood	High	□ Moderate
Cultural Heritage	Chance finds of subsurface artefacts or historical objects	All sites	Small; Low likelihood	Medium	□ Moderate
GBV/SEA/SH	Worker-community Sexual Exploitation and Abuse (SEA)	Agboju, All sites	Large; High likelihood	High	● Critical
GBV/SEA/SH	Worker-worker Sexual Harassment (SH)	All sites	Medium; Medium likelihood	High	□ Major
GBV/SEA/SH	Child sexual abuse risks around project corridors	All sites	Large; Low likelihood	High	● Critical

GBV/SEA/SH	Vulnerable groups exposure to harassment or intimidation	All sites	Medium; High likelihood	High	□ Major
GBV/SEA/SH	Reporting barriers due to social stigma and lack of confidential channels	All sites	Large; Very High likelihood	High	● Critical
GBV/SEA/SH	Economic exploitation of vulnerable community members	Oridilu, Bada, Agboju	Medium; High likelihood	High	□ Major
GBV/SEA/SH	Cultural norms suppressing grievance reporting	All sites	Medium; Medium likelihood	High	□ Major
GBV/SEA/SH	Local law enforcement response delays or gaps	All sites	Medium; High likelihood	High	□ Major
GBV/SEA/SH	Flood displacement increasing vulnerability to abuse	Agboju, Oridilu, Bada	Medium; High likelihood	High	□ Major
GBV/SEA/SH	GRM failure leading to re-traumatisation of survivors	All sites	Large; Medium likelihood	High	● Critical

5.3.2.1 Quantified Environmental Impacts against WB EHS/WHO Compliance Limits

The following tables provide quantified, site-specific impact predictions for key environmental parameters during the construction phase of the Amuwo Odofin facility, benchmarked against WB EHS/WHO compliance limits. Baseline values are derived from Chapter 4.

A. Air Quality (PM_{10} and $PM_{2.5}$) — Predicted Construction-Phase Concentrations vs. Compliance Limits

Site	Baseline PM_{10} (µg/m3)	Predicted Peak PM_{10} (µg/m3)	Baseline $PM_{2.5}$ (µg/m3)	Predicted Peak $PM_{2.5}$ (µg/m3)	WB EHS/WHO Limit PM_{10} (µg/m3)	WB EHS/WHO Limit $PM_{2.5}$ (µg/m3)	Exceedance Risk	Significance
Amuwo Odofin Site	18.5	45–70	8.2	20–35	50	25	Medium	□ Moderate

Quantification Basis:

Dust emission factors from earthworks (0.5–2.5 kg/tonne of soil moved), vehicle traffic on unpaved or loose urban access roads (0.5–1.5 kg/VKT), and material handling (0.1–0.5 kg/tonne). Predicted concentrations assume worst-case dry-season conditions, no immediate dust suppression, and an average wind speed of 3.6 m/s. Mitigation measures (water spraying 3× daily, covered stockpiles) are expected to reduce PM10 by 40–60% and PM2.5 by 30–50%.

B. Noise — Predicted Construction-Phase Levels vs. Compliance Limits

Site	Baseline Daytime Leq dB(A)	Predicted Peak Construction Noise dB(A) at 10 m	Predicted Noise at Nearest Receptor dB(A)	WB EHS/WHO Daytime Limit dB(A)	Exceedance	Significance
Amuwo	58.2–64.5	85–95	65–75	55	Yes (+10–20 dB)	□ Major

Odofin Site						

Quantification Basis:

Noise levels from construction equipment (excavators 75–85 dB(A), bulldozers 80–90 dB(A), concrete mixers 70–80 dB(A), generators 70–80 dB(A), trucks 70–80 dB(A)) at a 10 m distance. Attenuation was calculated using the inverse square law and ISO 9613-2. Predicted levels at nearest residential or commercial receptors (10–30 m from site boundary) assume no temporary noise barriers. Mitigation measures (noise barriers, restricted daytime scheduling, equipment silencers) are expected to reduce levels by 10–15 dB(A).

C. Groundwater Quality — Predicted Construction-Phase Impacts vs. Compliance Limits

Parameter	**Unit**	**Baseline Range (Amuwo Odofin)**	**Predicted Construction Impact**	**WHO/FMEnv Limit**	**Exceedance Risk**	**Significance**
pH	—	6.1–7.4	6.0–7.5	6.5–8.5	Low	□ Minor
Total Coliform	CFU/100 ml	45–130	80–250	0	Very High	● Critical
E. coli	CFU/100 ml	0–2	5–15	0	High	□ Major
BOD	mg/L	5.2–8.5	7–14	≤6	High	□ Major
COD	mg/L	11.5–15.0	14–24	≤10	High	□ Major
TSS	mg/L	—	25–55	≤30	High	□ Major

D. Municipal Runoff & Drainage Quality — Predicted Construction-Phase Impacts vs. Compliance Limits

(Note: Adapted for urbanized Amuwo Odofin setting lacking natural open creeks)

Parameter	**Unit**	**Baseline (Municip**	**Predicted Construction Impact**	**WHO/FMEnv Limit**	**Exceedance Risk**	**Significance**

		al Runoff)				
TSS	mg/L	Elevated	40–100	≤30	Very High	● Critical
Turbidity	NTU	Moderate	20–50	≤5	Very High	● Critical
BOD	mg/L	6.0–14.0	10–22	≤6	High	Major
COD	mg/L	15–45	20–45	≤20	High	Major
Total Coliform	CFU/100 ml	103–104	103–105	0	Very High	● Critical
E. coli	CFU/100 ml	Detected	102–104	0	Very High	● Critical
Lead (Pb)	mg/L	0.01–0.08	0.03–0.15	≤0.01	High	Major
Iron (Fe)	mg/L	0.4–1.0	0.6–2.0	≤0.3	High	Major

E. Soil Quality — Predicted Construction-Phase Impacts vs. Compliance Limits

Parameter	**Unit**	**Baseline Range (Amuwo Odofin)**	**Predicted Construction Impact**	**FMEnv/WHO Limit**	**Exceedance Risk**	**Significance**
pH	—	5.8–7.5	5.5–7.5	6.0–8.5	Low	Minor
Total Petroleum Hydrocarbon (TPH)	mg/kg	<0.01	10–40	≤50	Medium	Moderate
Lead (Pb)	mg/kg	<0.01	0.5–2.0	≤85	Low	Minor
Copper (Cu)	mg/kg	1.2–2.8	4–12	≤100	Low	Minor
Zinc (Zn)	mg/kg	<0.01	5–18	≤300	Low	Minor
Coliforms	CFU/g	<20–<25	80–400	0	High	Major

Total Plate Count	CFU/g	1,100–TNTC	1,800–TNTC	≤1000	High	□ Major

F. Summary of Quantified Impacts by Site

Node	Critical Impacts	Major Impacts	Moderate Impacts	Minor Impacts
Agboju	Municipal drainage TSS, turbidity, total coliforms, and *E. coli* exceedances	Construction noise, groundwater coliforms/*E. coli*, soil coliforms, BOD/COD	PM10 / PM2.5 dust, localized TPH	pH variations, trace heavy metals
Oridilu	Urban stormwater drainage siltation, high turbidity, and microbial loading	Boundary noise exceedances, groundwater quality degradation (BOD/COD/coliforms), soil microbiological shifts	Fugitive dust emissions (PM10 / PM2.5), TPH	pH levels within range, trace heavy metals
Bada	Surface runoff and municipal drainage contamination (high TSS, turbidity, pathogens)	Construction noise on residences, groundwater contamination risks, elevated soil plate counts	Particulate emissions, minor TPH accumulation	pH fluctuations, trace heavy metals (Pb, Cu, Zn)
Ogbomoshotedo	Municipal drainage and runoff degradation (severe TSS, turbidity, microbial/coliform spikes)	Ambient construction noise, groundwater/soil microbiological exceedances, elevated BOD/COD	PM10 / PM2.5 emissions, localized TPH	pH balance stability, baseline heavy metal levels

Quantitative Physical Changes Caused by Project Activities:

- **Air Quality (Dust & Emissions):** During construction earthworks and excavation at Amuwo Odofin, particulate matter concentrations (PM10) are projected to increase by 45 to 85 µg/m3 above baseline, and fine particulates (PM2.5) by 20 to 40 µg/m3,

resulting in localized exceedances of the 50 µg/m3 (PM10) and 25 µg/m3 (PM2.5) limits prior to water suppression mitigation.

- **Noise Generation:** Operation of heavy machinery (excavators, concrete mixers, generators) during construction is projected to elevate ambient noise levels at facility boundaries by 15 to 28 dB(A) above baseline, yielding unmitigated noise levels of 68 to 78 dB(A) (exceeding the 55 dB(A) daytime residential guideline).
- **Health and Safety (Occupational Risk):** Without adherence to Occupational Health and Safety (OHS) plans and PPE enforcement, construction operations present an estimated exposure risk of 2 to 4 Lost Time Injuries (LTIs) per 100,000 worker-hours due to slips, trips, manual handling, and minor structural/electrical hazards during facility retrofitting.

5.3.3 Operation Phase Impacts

The operational lifespan (50+ years) generates long-term regulating impacts related to clinical activities and climate change.

- **Medical Waste (OS4):** Operational unmitigated generation of highly hazardous infectious waste and sharps represents a Major risk if LAWMA collection is relied upon without a proper HMWMP and color-coded segregation. Infection control failure poses a concomitant Major HAI risk.
- **Water Quality (OS4):** Septic tank systems present a Moderate unmitigated risk of soil and groundwater contamination (BOD, coliforms, nutrients), especially given baseline coliform presence. Wastewater monitoring is required.
- **Energy Use (OS4):** Unmitigated, the potential need to use diesel generators for backup power would result in estimated GHG emissions of *[2,000 – 4,000 tCO_2e/year]*. This is a Minor impact, significantly reduced by the planned solar PV systems.
- **Climate Vulnerability (OS6):** Unmitigated, the facilities face Major risks from climate change. By 2050 (RCP 8.5), Agboju and Oridilu face high inundation risk from 0.5 m sea-level rise and coastal erosion. Extreme heatwaves (80+ days/year >35°C) pose significant Moderate to Major health and operational risks, primarily at Agboju and Oridilu. Drought presents a Moderate risk of groundwater depletion for facility use.Table 5.2C shows the Operation Phase Impact Assessment.

Table 5.2C: Unmitigated Environmental and Social Impacts – Operation Phase

Impact Category	Description	Sites	Characteristics	Sensitivity	Significance

Medical Waste	Infectious waste management without HMWMP	All sites	Large; Very High likelihood	High	□ Major
HAI	Infection control failure	All sites	Large; Medium likelihood	High	□ Major
Wastewater	Septic contamination; urban runoff intrusion	Oridilu, Bada, All sites	Medium; Medium likelihood	High	□ Moderate
Energy Use	Diesel generator emissions	All sites	Small; High likelihood	Medium	□ Minor
Climate – Flooding	High urban flood and storm runoff risk	Oridilu, Bada	Large; High likelihood	High	● Critical
Climate – Urban Heat Island / Microclimate	High heat island effects and storm intensity	Agboju	Large; High likelihood	High	● Critical
Climate – Heatwaves	>40°C days increase	All sites	Medium; High likelihood	High	□ Major
Climate – Moisture Ingress	Rising damp and urban humidity	Oridilu, Bada	Medium; High likelihood	High	□ Major

5.3.4 Decommissioning Phase Impacts

Table 5.2d summarises the unmitigated environmental and social impacts anticipated during the Decommissioning Phase of the project. These impacts primarily relate to hazardous material handling, demolition waste generation, soil and groundwater disturbance, temporary community access restrictions, and livelihood transitions. Each impact has been evaluated using the established multi-criteria significance methodology, incorporating magnitude, duration, extent, likelihood, and receptor sensitivity to determine the appropriate significance rating and the level of mitigation required.

Table 5.2D: Unmitigated Environmental and Social Impacts – Decommissioning Phase

Impact Category	Description	Sites	Characteristics	Sensitivity	Significance
Hazardous Materials	Asbestos removal & structural dismantling	All sites	Large; Medium likelihood	High	Major
Demolition Debris	Waste generation and urban clearing	All sites	Medium; High likelihood	Medium	Moderate
Soil Disturbance	Urban soil erosion	All sites	Medium; High likelihood	Medium	Moderate
Groundwater	Septic tank decommissioning	All sites	Medium; Medium likelihood	High	Major
Drainage Margin Disturbance	Restoration and channel clearing works	Agboju, Oridilu	Medium; Medium likelihood	High	Major
Community Disruption	Access restrictions	All sites	Small; Medium likelihood	Medium	Moderate
Livelihood Transition	Loss of project-related employment	All sites	Medium; Medium likelihood	High	Major

Beneficial Impacts

The subsequent table presents the long-term beneficial impacts expected across all PHC sites as a result of the project's implementation. These positive outcomes include expanded healthcare access for approximately 150,000 residents, significant reductions in maternal and child mortality, substantial employment generation, measurable greenhouse gas reductions through solar PV adoption, and strengthened climate and pandemic resilience for riverine and coastal communities. These impacts reflect the enduring social and environmental benefits of the LSHIP intervention and highlight its contribution to improved wellbeing and regional development.

Table 5.3: Beneficial Impacts

Impact Category	Description	Sites	Characteristics	Sensitivity	Significance
Healthcare Access	150,000 residents served	All sites	Large; Very High likelihood	High	● Significant Positive
Maternal Health	20–30% reduction in maternal mortality	All sites	Large; High likelihood	High	● Significant Positive
Child Health	25–35% reduction in under-five mortality	All sites	Large; High likelihood	High	● Significant Positive
Employment	85–105 direct jobs; 5,000–8,000 indirect	All sites	Large; High likelihood	High	● Significant Positive
GHG Reduction	800–1,500 tCO_2e/year reduction	All sites	Large; High likelihood	Medium	● Moderate Positive
Climate Resilience	Strengthened pandemic resilience	All sites	Large; High likelihood	High	● Significant Positive

5.4 Site-Specific Impact Significance Matrix (Unmitigated Scenario)

The detailed impact assessment presented in Section 5.3 identifies a wide spectrum of unmitigated environmental, social, and health-and-safety risks across the four PHC sites in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. Because each site has distinct baseline sensitivities---ranging from wetlands, erosion-prone soils, and asbestos-containing structures to PAP livelihoods, GBV hotspots, and urban congestion---it is essential to evaluate impacts **site by site**, rather than relying on a generic corridor-wide assessment.

To meet the requirements of AfDB Operational Safeguards (OS1—OS10) and FMEnv ESIA guidelines, the project's unmitigated impacts have been organised into colour-coded significance matrices. These matrices:

- Reflect all relevant stakes: biophysical, social, and health & safety

- Capture site-specific vulnerabilities identified in Chapters 3 and 4
- Classify impacts using AfDB's Critical, Major, Moderate, Minor, Positive scale
- Provide a clear basis for the mitigation hierarchy presented in Chapter 6
- Demonstrate how each project activity interacts with specific receptors at each site
- Highlight priority risks requiring immediate attention (e.g., asbestos, wetland loss, GBV/SEA/SH, labour influx, fisheries disruption)

The matrices below therefore serve as the core analytical bridge between the baseline conditions and the mitigation measures. They show, at a glance, how each site is affected by the project during pre-construction and construction phases, and they ensure that subsequent mitigation and ESMP actions are targeted, defensible, and aligned with AfDB standards.

Colour codes: ● Critical □ Major □ Moderate □ Minor ⬬ Positive

5.4.1 AGBOJU -- Site-Specific Impact Matrix

(Urban/peri-urban, 13 PAP shops, 0 PAP farmers, 0 informal settlers, high GBV risk)

Category	Impact	Significance	Colour
Biophysical	Air quality (dust, PM10)	Moderate	□
	Noise & vibration	Moderate	□
	Wetland disturbance	Major	□
Social	Economic displacement 13 PAP shops, *[0]* farmers, *[0]* informal settlers)	Major	□
	Labour influx	Major	□
	GBV/SEA/SH risk	Major	□
	Reporting barriers	Critical	●
Health & Safety	Community safety (traffic, access)	Major	□
	Worker OHS risks	Major	□

5.4.2 ORIDILU -- Site-Specific Impact Matrix

(Urban, wetland sensitivity, industrial area)

Category	Impact	Significance	Colour
Biophysical	Wetland disturbance	Major	□
	Soil erosion	Moderate	□
	Water quality contamination (Lagos Lagoon)	Major	□
Social	GBV/SEA/SH risk	Major	□

Health & Safety	Community safety	Moderate	□
	Worker OHS	Major	□

5.4.3 BADA -- Site-Specific Impact Matrix

(Peri-urban, asbestos suspected, medium GBV risk)

Category	**Impact**	**Significance**	**Colour**
Biophysical	Asbestos disturbance (suspected)	Critical	●
	Air quality (dust affecting trading)	Moderate	□
Social	Livelihood disruption (trading access)	Moderate	□
	GBV/SEA/SH risk	Major	□
Health & Safety	Asbestos OHS exposure (suspected)	Critical	●

5.4.4 OGBOMOSHOTEDO -- Site-Specific Impact Matrix

(Peri-urban, asbestos suspected)

Category	**Impact**	**Significance**	**Colour**
Biophysical	Asbestos disturbance (suspected)	Critical	●
	Soil erosion	Major	□
Social	No PAPs	Minor	□
	GBV/SEA/SH risk	Major	□
Health & Safety	Worker OHS	Major	□

5.5 Summary Of Key Impacts

5.5.1 Overview of Key Adverse Impacts (Unmitigated)

The unmitigated impact assessment identifies that physical disturbance impacts (dust, noise, erosion, water quality) peak during the construction phase, along with significant labour influx and GBV risks. The pre-construction phase holds the highest unmitigated risk regarding resettlement and potential asbestos exposure. The operational phase is dominated by hazardous medical waste management and increasing climate vulnerability over the 50-year facility lifespan.

Key findings of unmitigated significance for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis are summarized as follows:

- **Critical Impacts (Must be avoided or fully mitigated):**
    - Pre-construction: Asbestos exposure unmitigated risk (Oridilu, Bada, Ogbomoshotedo), unmitigated resettlement (Agboju).
    - Construction: Wetland loss without offset (Agboju, Oridilu).
- **Major Impacts (Must be mitigated):**
    - Construction: Labour influx and associated housing pressure and social tension (*[Agboju]*); OHS risks (all sites); Community health and safety (traffic, access); GBV/SEA/SH risk (*[Oridilu, Bada, Agboju]*); Unmitigated water quality impacts to sensitive bodies (Agboju, Oridilu).
    - Operation: Unmitigated medical waste and sharps management; Infection control (HAI risks); Climate vulnerability unmitigated (coastal erosion and flooding at Agboju, Oridilu, heatwaves at all sites); Unmitigated livelihood disruption.
- **Moderate Impacts (Manageable with standard mitigation):**
    - Unmitigated air quality degradation (dust); Unmitigated soil erosion (notably at Agboju); Unmitigated water scarcity (operation); and Cumulative impacts (labour, traffic, air quality).

5.5.2 Overview of Key Beneficial Impacts

Despite the significant potential for adverse impacts if unmitigated, the project is expected to deliver substantial, long-term beneficial impacts that align directly with its development objectives and the positive criteria of AfDB Operational Safeguards (OS1).

- **Significant Positive (High Positive):**

- Construction: Generation of 160 – 320 direct jobs and approximately 10,000–15,000 indirect supply chain jobs. Multiplier effect on the local economy through 60--70% of the construction budget spent on local procurement.
- Operation: Healthcare access for approximately 150,000 residents. Maternal mortality estimated to reduce by 20-30% and under-five mortality by 25-35%;. Reduced travel time to functional facilities (<15 minutes, down from 30--60 minutes), reducing costs and burden.

- **Moderate Positive (Medium Positive):**
  - Construction: Training of 50-plus youth in construction skills and waste management.
  - Operation: Estimated reduction in GHG emissions of *[2,000 – 4,000 tCO_2e/year]* and diesel savings of 500,000–1,000,000 litres /year *litres/year]* programme-wide due to solar PV. Beneficial reduction in GBV/SEA/SH risk due to the implementation of the GBV Action Plan and referral pathways.

5.6 Worst-Case Scenarios and Cumulative Risk

The worst-case scenario analysis emphasises unmitigated events with the highest consequence. Uncontrolled asbestos release during demolition poses a critical risk (Oridilu, Bada, Ogbomoshotedo), potentially leading to mesothelioma health crises decades later. A significant fuel spill during construction near Lagos Lagoon or creeks is a major to critical risk, decimating local fisheries and livelihoods. Wetland loss without offset is likely Major to Critical risk to biodiversity and flood regulation services. Socially, the worst unmitigated case is a failure to support a GBV survivor, causing severe trauma, potential unwanted pregnancy/STI, and community protest leading to project shutdown.

Unmitigated, the project contributes to Cumulative Impacts in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho corridor with other major projects. Key unmitigated hotspots involve labour influx leading to GBV, housing pressure, and social tension; and cumulative air quality degradation (dust) from road upgrades. The project contributes to the medium cumulative risks of waterborne, vector-borne, and respiratory diseases.

Finally, AfDB alignment confirms that the project's assessment has correctly triggered and addressed all relevant Operational Safeguards (OS1-OS10) through full impact assessment, RAP (standalone document), Critical Habitat screening (OS3), pollution prevention and hazardous materials assessment (OS4, OS8), labour and GBV assessments (OS2), and comprehensive climate vulnerability analysis (OS6).

5.7 Conclusion of the Impact Assessment

The impact assessment has identified a wide spectrum of unmitigated impacts, from Critical (asbestos, wetland loss, resettlement) to Minor. These have been specifically linked to project phases, key sites, and receptors in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis.

Critical impacts, notably regarding asbestos and wetland loss at Agboju and Oridilu, must be avoided or fully mitigated. All Major impacts concerning labour, health, safety, GBV, medical waste, and livelihoods must be mitigated to acceptable levels. Moderate impacts are manageable with standard mitigation measures. Simultaneously, the project's high positive benefits for healthcare, maternal/child health, employment, and the local economy must be maximised.

With the implementation of the mitigation measures outlined in Chapter 6 and the corresponding management plans---the Environmental and Social Management Plan (ESMP, Chapter 7), the Hazardous Medical Waste Management Plan (HMWMP, Chapter 8), and the GBV Action Plan (Chapter 9) the project's adverse impacts can be effectively minimized to an acceptable level, allowing for the maximisation of its substantial beneficial impacts and the safe realisation of its goals.

CHAPTER 6 -- MITIGATION MEASURES

6.1 Introduction

Chapter 6 presents the mitigation measures required to address the environmental, social, health, and safety impacts identified in Chapter 5 for the four PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. All measures follow the AfDB mitigation hierarchy---Avoid, Minimise, Restore, Offset---and are designed to ensure compliance with FMEnv, NESREA, LASEPA, AfDB ISS, IFC Performance Standards, WHO, and ILO requirements.

The Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis contains a diverse set of environmental and social sensitivities, including wetlands (Agboju, Oridilu), asbestos-containing structures (Oridilu, Bada, Ogbomoshotedo), livelihoods-dependent communities (all sites), PAP livelihoods (Agboju), erosion-prone soils (Agboju, Ogbomoshotedo), and GBV/SEA/SH hotspots (all sites). Because these sensitivities vary significantly across sites, mitigation measures are site-specific, ensuring that risks are managed precisely where they occur and at the appropriate scale.

These measures form the operational backbone of the Environmental and Social Management Plan (ESMP) in Chapter 7 and will guide contractors, the PIU, and facility operators throughout pre-construction, construction, and operation phases.

6.2 Public Health Impact - Baseline, Impacts, Mitigation Measures, and Monitoring Indicators

The project baseline across all four PHCs shows high malaria and typhoid prevalence, moderate respiratory infections, and chronic conditions such as hypertension and diabetes, combined with environmental vulnerabilities including limited access to safe water, flood-prone terrain, blocked drainage, and weak waste-management systems. These baseline conditions significantly heighten public-health sensitivity during both construction and renovation activities.

For Agboju PHC during construction**,** risks arise from service disruption, WASH interruptions, poor waste segregation, dust and noise exposure, vector breeding, and occupational hazards. These impacts are rated high and require monitoring of disease trends, water availability, waste compliance, air quality, noise levels, stagnant water, and OHS performance. Mitigation focuses on temporary clinics, backup water supply, dust/noise control, drainage improvement, and PPE enforcement.

For Oridilu, Bada, and Ogbomoshotedo PHCs during renovation, risks are more severe because renovation occurs within active clinical environments. Very high baseline disease burdens

increase vulnerability to nosocomial infections, overcrowding, workflow disruption, WASH failures, and exposure to infectious waste. These impacts are rated very high and require intensive monitoring through IPC audits, PPE checks, infection tracking, patient-flow monitoring, water-supply logs, waste segregation checks, and dust/noise assessments. Mitigation emphasizes isolating construction zones, strengthening IPC, maintaining temporary service areas, ensuring continuous water supply, enforcing safe waste handling, and controlling dust and noise.

Overall, construction-phase PHCs require strong environmental and operational safeguards, while renovation-phase PHCs demand heightened IPC and service-continuity measures to protect patients and staff throughout LSHTIP implementation.

Agboju PHC (during Construction)

Category	**Agboju PHC**	**Impact Rating**	**Monitoring Indicators**	**Mitigation Measures**
Community Health Baseline	High malaria & typhoid; moderate RTIs; hypertension & diabetes	● High	Weekly disease surveillance; drug stock levels	Strengthen surveillance; ensure drug availability
Environmental Baseline	Limited safe water; flood-prone; poor waste disposal	□ Moderate	Water quality tests; drainage inspections; waste audits	Improve drainage; ensure safe water supply
Service Disruption	Restricted movement → delayed treatment	● High	Patient flow counts; waiting time	Temporary clinic; phased construction
WASH Interruption	Water interruption → poor hygiene → disease transmission	● High	Water availability logs; hand hygiene checks	Backup water; maintain sanitation points
Waste Management Disruption	Poor segregation → infection risk	● High	Waste segregation compliance;	Enforce segregation; routine waste pickup

			disposal frequency	
Air Quality (Dust)	Excavation dust → respiratory irritation	□ Moderate	PM readings; respiratory complaints	Dust suppression; dust barriers
Noise Exposure	Machinery noise → stress	□–□ Low–Moderate	Noise readings; staff/patient feedback	Noise scheduling; PPE
Vector Breeding	Stagnant water → mosquito breeding → malaria	□ High	Stagnant water checks; malaria case trends	Drainage management; larval control
Occupational Hazards	Machinery movement → injuries	□ Moderate	Incident reports; PPE compliance	PPE; OHS training; restricted zones
Overall Construction Mitigation	Standard construction-phase mitigation applies	—	Compliance audits; contractor supervision	Temporary clinic; WASH continuity; dust/noise control; drainage management; PPE

Oridilu PHC, Bada PHC, Ogbomoshotedo PHC during renovation

Category	Oridilu PHC	Bada PHC	Ogbomo shotedo PHC	Impact Rating	Monitoring Indicators	Mitigation Measures
Community Health Baseline	Very high malaria; high typhoid; moderate RTIs; hypertension & diabetes	Same	Same	● High	Weekly disease surveillance; drug stock levels	Strengthen surveillance; ensure drug availability

Environmental Baseline	Limited safe water; flood-prone; blocked drainage	Same	Same	□–● Moderate–High	Water quality tests; drainage inspections	Improve drainage; maintain sanitation
Nosocomial Infection Risk	Dust contamination in active clinic	Same	Same	● Very High	IPC audits; PPE use; facility-acquired infection tracking	Strict IPC; isolate construction zones
Service Disruption	Temporary relocation → delayed care	Same	Same	● Very High	Patient flow counts; referral tracking	Temporary clinics; phased works
Overcrowding	Partial closure → increased patient load	Same	Same	□ High	Daily patient volume; waiting time	Patient flow management; triage
Workflow Disruption	Increased patient contact → cross-infection	Same	Same	● Very High	Movement mapping; cross-infection reports	Zoning; controlled patient routing
WASH Interruption	Water interruption → poor hygiene	Same	Same	● Very High	Water logs; hand hygiene compliance	Backup water; maintain sanitation
Waste Management Disruption	Exposure to infectious waste	Same	Same	● Very High	Waste segregation checks; disposal frequency	Strict segregation; safe disposal
Air Quality (Dust)	Civil works → dust inhalation	Same	Same	□ Moderate	Dust barrier checks; respiratory complaints	Dust barriers; source control

Noise Exposure	Machinery noise → stress	Same	Same	□ Low–Moderate	Noise readings; staff feedback	Noise scheduling; barriers
Overall Renovation Mitigation	IPC strengthening; temporary service continuity; waste control	Same	Same	—	Compliance audits; contractor supervision	Enhanced IPC; continuous water; safe waste handling

Operational Risks while construction is going on

Agboju PHC

Operational Category	**Agboju PHC**	**Impact Rating**	**Monitoring Indicators**	**Operational Mitigation Measures**
Service Continuity	Disruption of routine services due to site access restrictions	● High	Patient flow counts; waiting time	Temporary clinic; phased construction
Clinical Operations	Reduced consultation space; delayed triage	□ Moderate	Daily patient volume; triage time	Mobile consultation units; workflow adjustment
WASH Operations	Water interruptions affecting hygiene and cleaning	● High	Water logs; sanitation checks	Backup water; maintain hygiene stations
Waste Handling	Poor segregation due to construction clutter	● High	Segregation compliance; disposal frequency	Enforce segregation; routine waste pickup
Environmental Operations	Dust, noise, stagnant water	□ High	PM readings; noise levels; vector checks	Dust suppression; noise scheduling; drainage control

	affecting staff/patients			
Staff Safety	Movement of machinery causing injury risks	□ Moderate	Incident reports; PPE compliance	PPE; OHS training; restricted zones

Operational Risks during Renovation

Oridilu PHC, Bada PHC, Ogbomoshotedo PHC

Operational Category	Oridilu PHC	Bada PHC	Ogbomoshotedo PHC	Impact Rating	Monitoring Indicators	Operational Mitigation Measures
Service Continuity	Temporary relocation → delayed care	Same	Same	● Very High	Patient flow counts; referral tracking	Temporary clinics; phased works
Clinical Operations	Overcrowding due to reduced space	Same	Same	□ High	Daily patient volume; waiting time	Triage management; patient routing
IPC Operations	Dust contamination → nosocomial infections	Same	Same	● Very High	IPC audits; PPE checks; infection tracking	Strict IPC; isolate construction zones
WASH Operations	Water interruptions affecting hygiene	Same	Same	● Very High	Water logs; hand hygiene compliance	Backup water; sanitation continuity

Waste Handling	Exposure to infectious waste during works	Same	Same	● Very High	Segregation checks; disposal frequency	Strict segregation; safe disposal
Environmental Operations	Dust, noise, and debris affecting patients	Same	Same	Moderate	Dust barrier checks; noise readings	Dust barriers; noise control
Staff Safety	Increased movement → higher injury risk	Same	Same	Low–Moderate	Incident reports; PPE compliance	PPE; restricted zones; supervision

6.3 Site-Specific Mitigation Measures

Mitigation measures are organised by PHC site and aligned with the biophysical, social, and health & safety stakes identified in Chapter 5. Each site-specific matrix provides targeted actions that directly respond to the unmitigated impacts identified during the assessment, ensuring that interventions are practical, proportionate, and tailored to local sensitivities.

The mitigation measures presented in this chapter apply the AfDB mitigation hierarchy – Avoid, Minimise, Restore, Offset – to ensure that project risks are systematically reduced to acceptable levels. The chapter integrates the requirements of the AfDB Integrated Safeguards System (ISS), FMEnv/NESREA regulations, LASEPA standards, IFC Performance Standards, and WHO/ILO guidelines.

Because each PHC site interacts with different environmental and social receptors – urban drainage channels, aged/hazardous-material-suspect structures, PAP livelihoods, flood-prone and erosion-prone terrain, GBV hotspots, cultural heritage features, and dense transport corridors – the mitigation measures are presented in site-specific matrices covering:

- **Biophysical mitigation:** air quality, noise, soil erosion, local water quality, biodiversity, hazardous materials
- **Social mitigation:** livelihoods, labour influx, GBV/SEA/SH, cultural heritage

- **Health & safety mitigation:** OHS, community safety, asbestos handling, traffic management, heat stress and flood exposure

Together, these measures provide a clear and actionable framework for managing risks across all project phases and form the foundation of the ESMP in Chapter 7.

6.3.1 Agboju – Site-Specific Mitigation Measures

Biophysical

- Flood and urban-runoff avoidance through the elevated-platform design (Avoid), supported by oversized drainage systems.
- Local water-quality protection: no discharge of construction wash water or waste to drainage channels; sediment traps and bunded fuel storage (Minimise).
- Asbestos survey of aged ancillary structures; licensed abatement if confirmed (Avoid).
- Dust suppression and noise scheduling to address the corridor's non-compliant daytime readings (Minimise).

Social

- Livelihood activities continuity support during construction (Restore).
- Labour Influx Management Plan addressing high urban transit mobility: worker camp rules, Code of Conduct, no child labour, local-hiring priority (Minimise).
- GBV/SEA/SH Action Plan: Code of Conduct, training, confidential survivor-centred reporting, referral pathways established before construction (Avoid/Minimise).

Health & Safety

- Traffic Management Plan on major urban transit corridors (marshals, speed limits, signage, diversion routes).
- Asbestos OHS controls (PPE, restricted access) pending survey confirmation.
- Heat-stress and flood-contingency management (shade, hydration, rest cycles; emergency response plan for flood events during construction).

Agboju – Mitigation Matrix

Impact Category	Unmitigated Impact	Mitigation Measure	Hierarchy	Responsible
Biophysical	Urban flooding / inundation of works and facility	Elevated-platform design; oversized drainage	Avoid	PIU / Design Contractor

Biophysical	Local water and drainage contamination	Sediment traps; bunded fuel storage; no wash-water discharge	Minimise	Contractor
Biophysical	Asbestos exposure (aged structures)	Licensed survey; abatement; air monitoring	Avoid	Specialist
Social	Commercial and trading livelihood disruption, 13 PAPs	Livelihood continuity support	Restore	PIU
Social	Labour influx & high urban transit mobility	Worker camp rules; CoC; local-hiring priority	Minimise	Contractor
Social	GBV/SEA/SH risk	Survivor-centred response; confidential GRM; referral MOUs	Avoid/Minimise	PIU / GBV Specialist
Health & Safety	Traffic congestion (urban transport corridor)	Traffic marshals; speed limits; signage	Minimise	Contractor
Health & Safety	Worker OHS / heat stress	PPE; shade, hydration, rest cycles	Minimise	Contractor

6.3.2 Oridilu – Site-Specific Mitigation Measures

Biophysical

- Full asbestos survey and abatement by a licensed contractor (wet removal, HEPA vacuums, air monitoring) given the roofing already flagged as asbestos-suspected (Avoid).
- Flood-resilient design: oversized drainage, elevated floor slabs and electrical panels (Avoid/Minimise).
- Riverine/wetland-fringe buffer maintenance; erosion and sediment control on vulnerable soils (Minimise).

- Targeted dust suppression at localized sources (water spraying, covering stockpiles) and noise controls (barriers, scheduling of noisy works) (Minimise).

Social

- GBV/SEA/SH Action Plan with confidential, anonymous-option reporting channels designed to overcome reporting barriers identified during consultation (Avoid/Minimise).
- Continuity of clinical services during refurbishment (phased works, temporary service arrangements) (Minimise).

Health & Safety

- Asbestos PPE (P3 respirators, Type 5 coveralls); restricted access during abatement; air monitoring (≤0.1 f/ml threshold, ≤0.01 f/ml clearance).
- Community safety during flood events; worker OHS training.

Oridilu – Mitigation Matrix

Impact Category	Unmitigated Impact	Mitigation Measure	Hierarchy	Responsible
Biophysical	Asbestos exposure (suspected roofing)	Licensed abatement; wet removal; HEPA vacuums; air monitoring	Avoid	Specialist
Biophysical	Flooding / drainage congestion	Oversized drainage; elevated slabs and electricals	Avoid/Minimise	PIU / Design Contractor
Biophysical	Localized dust exceedance	Water spraying; covered stockpiles; source control	Minimise	Contractor
Biophysical	Localized noise exceedance	Noise barriers; scheduling of noisy works	Minimise	Contractor
Social	GBV/SEA/SH; reporting barriers	Confidential, anonymous-option GRM; survivor-centred response	Avoid/Minimise	PIU / GBV Specialist

Health & Safety	Asbestos OHS	P3 respirators; Type 5 coveralls; restricted access	Avoid	Specialist
Health & Safety	Continuity of clinical services	Phased works; temporary service arrangements	Minimise	Contractor / Facility Operator

6.3.3 Bada – Site-Specific Mitigation Measures

Biophysical

- Full asbestos survey and abatement by a licensed contractor (wet removal, HEPA vacuums, air monitoring) given the roofing already flagged as asbestos-suspected (Avoid).
- Flood-resilient design: oversized drainage, elevated floor slabs and electrical panels (Avoid/Minimise).
- Agricultural/rural-fringe buffer maintenance; erosion and sediment control (Minimise).
- Targeted dust suppression and noise controls (barriers, scheduling of noisy works) (Minimise).

Social

- GBV/SEA/SH Action Plan with confidential reporting channels to address local community vulnerabilities (Avoid/Minimise).
- Continuity of clinical services during refurbishment (phased works, temporary service arrangements) (Minimise).

Health & Safety

- Asbestos PPE (P3 respirators, Type 5 coveralls); restricted access during abatement; air monitoring (≤0.1 f/ml threshold, ≤0.01 f/ml clearance).
- Community safety during flood events; worker OHS training.

Bada – Mitigation Matrix

Impact Category	Unmitigated Impact	Mitigation Measure	Hierarchy	Responsible
Biophysical	Asbestos exposure (suspected roofing)	Licensed abatement; wet removal; HEPA vacuums; air monitoring	Avoid	Specialist

Biophysical	Flooding / drainage congestion	Oversized drainage; elevated slabs and electricals	Avoid/Minimise	PIU / Design Contractor
Biophysical	Localized dust exceedance	Water spraying; covered stockpiles; source control	Minimise	Contractor
Biophysical	Localized noise exceedance	Noise barriers; scheduling of noisy works	Minimise	Contractor
Social	GBV/SEA/SH risk	Survivor-centred response; confidential GRM	Avoid/Minimise	PIU / GBV Specialist
Health & Safety	Asbestos OHS	P3 respirators; Type 5 coveralls; restricted access	Avoid	Specialist
Health & Safety	Continuity of clinical services	Phased works; temporary service arrangements	Minimise	Contractor / Facility Operator

6.3.4 Ogbomoshotedo – Site-Specific Mitigation Measures

Biophysical

- Asbestos survey of aged structures; licensed abatement if confirmed (Avoid).
- Drainage-margin protection: sediment traps, no discharge of any waste stream to local watercourses, bunded storage (Minimise).
- Noise management at localized exceedances (barriers, scheduling) (Minimise).
- Flood-resilient design consistent with the axis standard (oversized drainage, elevated electricals) (Avoid/Minimise).

Social

- Local trade and commercial support – temporary compensation and alternative-income training during construction (Restore).
- GBV/SEA/SH Action Plan: Code of Conduct, training, confidential reporting, referral pathways (Avoid/Minimise).

Health & Safety

- Asbestos OHS controls pending survey confirmation (PPE, restricted access, air monitoring).
- Worker OHS training for urban-fringe operations; heat-stress and flood-contingency management.

Ogbomoshotedo – Mitigation Matrix

Impact Category	Unmitigated Impact	Mitigation Measure	Hierarchy	Responsible
Biophysical	Asbestos exposure (aged structures, pending survey)	Licensed survey; abatement if confirmed; air monitoring	Avoid	Specialist
Biophysical	Drainage water contamination (site works)	Sediment traps; bunded storage; no discharge	Minimise	Contractor
Biophysical	Localized noise exceedance	Noise barriers; scheduling of noisy works	Minimise	Contractor
Social	GBV/SEA/SH risk	Survivor-centred response; confidential GRM	Avoid/Minimise	PIU / GBV Specialist
Health & Safety	Fuel spill / operational risk	Emergency spill response plan; bunded storage	Minimise	Contractor
Health & Safety	Worker OHS / heat stress	PPE; shade, hydration, rest cycles	Minimise	Contractor

CHAPTER 7 -- ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

7.1 General Introduction

The Environmental and Social Management Plan (ESMP) provides the operational framework for implementing the mitigation measures identified in Chapter 6 for the four PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis: Agboju, Oridilu, Bada, and Ogbomoshotedo. It translates the site-specific risks into clear actions, responsibilities, monitoring requirements, and performance indicators across all project phases---pre-construction, construction, and operation.

The ESMP ensures compliance with the AfDB Integrated Safeguards System (ISS), FMEnv EIA Act, NESREA regulations, LASEPA environmental standards, IFC Performance Standards, WHO healthcare waste and IPC guidelines, and ILO labour and OHS conventions. It establishes a structured mechanism for:

- Managing environmental and social risks at each site
- Ensuring contractors and facility operators implement mitigation measures
- Monitoring performance through measurable indicators
- Protecting community health, safety, and security
- Ensuring transparency, accountability, and continuous improvement

Because each PHC site has distinct environmental and social sensitivities---such as critical wetlands (Agboju, Oridilu), lagoon fisheries (Agboju, Oridilu), urban congestion and high labour influx Oridilu, Bada & Ogbomoshotedo), and asbestos-containing structures (Oridilu, Bada, Ogbomoshotedo)---the ESMP is site-specific, ensuring that risks are managed precisely where they occur.

7.2 Site-Specific ESMPs for the Four PHC Sites

This section presents **site-specific ESMPs**, each structured into:

A. Biophysical Management

Brief explanation: Measures to prevent or minimise impacts on air, water, soil, wetlands, biodiversity, and hazardous materials.

B. Social Management

Brief explanation: Measures addressing livelihoods, resettlement, labour influx, GBV/SEA/SH, cultural heritage, and community engagement.

C. Health & Safety Management

Brief explanation: Measures to protect workers and communities from OHS risks, asbestos exposure, traffic hazards, and heat stress.

D. Monitoring Indicators

Brief explanation: Key parameters, frequency, and thresholds used to verify ESMP effectiveness.

E. Responsibilities

Brief explanation: Clear assignment of duties to the Contractor, PIU, Facility Operator, and Independent Environmental & Social Monitor (IESM).

Each ESMP table below provides targeted actions that directly respond to the unmitigated impacts identified in Chapter 5.



Figure 7.1: Site-Specific ESMP (Environmental & Social Management Plan) Framework

7.2.1 AGBOJU -- Site-Specific ESMP

Key sensitivities: 13 PAPs (shops, farmers, informal settlers), critical wetland habitat, urban congestion, asbestos (suspected), high GBV risk.

A. Biophysical Management

Impact	ESMP Action	Performance Indicator
Flooding / urban inundation	Elevated-platform design; oversized drainage	Zero flood-related damage to works
Drainage contamination	Sediment traps; bunded fuel storage; no wash-water discharge	TSS ≤30 mg/L; no hydrocarbons in drains

Asbestos (aged ancillary structures)	Licensed survey; abatement if confirmed; air monitoring	≤0.1 f/ml

B. Social Management

Impact	**ESMP Action**	**Performance Indicator**
Commercial/trading livelihoods	RAP compensation; livelihood continuity support	PAP satisfaction ≥80%
Labour influx / transit mobility	Worker Code of Conduct and site rules; local-hiring priority	Zero conflicts
GBV/SEA/SH	Confidential GRM; survivor-centred response	100% workers trained

C. Health & Safety Management

Impact	**ESMP Action**	**Performance Indicator**
Traffic risks (urban transport corridors)	Deploy trained marshals; enforce speed limits; establish diversion routes; install warning signage	Zero traffic incidents
Asbestos OHS (pending survey)	Use P3 respirators; restrict access; wet-method handling; controlled removal by licensed contractor	100% PPE compliance
Working at height	Use fall-arrest systems; scaffolding inspections; edge protection; permit-to-work system	Zero fall incidents; 100% permit compliance
Confined space entry	Gas testing; ventilation; standby attendant; confined-space entry permit; rescue plan	Zero confined-space incidents
Electrical safety	Lock-out/tag-out (LOTO); insulated tools; elevated electrical installations; routine inspections	Zero electrical shocks

Chemical safety (fuels, reagents, solvents)	Bunded storage; SDS availability; spill kits; chemical handling training; emergency showers	Zero major spills; 100% SDS availability
Lone working	Lone-worker protocol; communication devices; check-in/check-out system	100% compliance with lone-worker procedure
Hazardous materials & hazardous waste	Segregation; labeled containers; licensed disposal; secure storage; no community exposure	Zero uncontrolled releases; 100% compliant manifests
Community health & safety (CHS)	Secure work zones; fencing; signage; controlled access; community awareness; safe routing of trucks	Zero community incidents; no public exposure to hazards

D. Monitoring Indicators

- Drainage water quality monthly; noise weekly (addressing non-compliant daytime readings recorded across sampling points); traffic incidents monthly; local-hiring rate monthly; GRM resolution ≤14 days.

E. Responsibilities

- Contractor – sediment/spill control, traffic management, labour-influx controls; PIU – RAP delivery, commercial livelihood support, GBV oversight; IESM – quarterly audits.

7.2.2 ORIDILU -- Site-Specific ESMP

Key sensitivities: Asbestos-suspected roofing, flood-prone zone, localized PM10/PM2.5 exceedance (SP1), localized noise exceedance (SP2), vulnerable soil/drainage fringe, GBV reporting barriers.

A. Biophysical Management

Impact	**ESMP Action**	**Performance Indicator**
Asbestos (suspected roofing)	Licensed asbestos abatement; wet-method removal; HEPA vacuums; continuous air monitoring	≤0.1 f/ml
Flooding / drainage congestion	Oversized drainage channels; elevated slabs and electrical installations	Zero flood-related service interruption
Localized dust exceedance (SP1)	Water spraying; covered stockpiles; strict source control	PM10≤50 µg/m3

Localized noise exceedance (SP2)	Noise barriers; scheduling of noisy works; equipment maintenance	≤55 dB(A)
Solid waste generation (construction & operations)	Segregation at source; covered skips; daily evacuation; disposal at LAWMA-approved facility	100% compliant disposal manifests
Sludge waste (cleaning, maintenance, wastewater systems)	Dewatering; safe containment; disposal through licensed waste contractors	Zero uncontrolled sludge discharge
Wastewater discharge (greywater, wash-down water)	Temporary holding tanks; filtration; discharge only to approved drains	TSS ≤30 mg/L; zero untreated discharge
Chemical spills (fuels, solvents, reagents)	Bunded storage; spill kits; trained spill response team; immediate containment	Zero major spills; response ≤30 minutes
Ecosystem & local drainage integrity	Silt curtains; sediment traps; prohibit unauthorized discharge; maintain buffer zones	No measurable decline in local water quality

B. Social Management

Impact	**ESMP Action**	**Performance Indicator**
GBV/SEA/SH; reporting barriers	Confidential, anonymous-option GRM	100% workers trained

C. Health & Safety Management

Impact	**ESMP Action**	**Performance Indicator**
Asbestos OHS	P3 respirators; Type 5 coveralls; restricted access	100% PPE compliance
Continuity of clinical services	Phased works; temporary service arrangements	Zero service interruption days unmanaged
General OHS risks across project life	Implement comprehensive OHS Plan (LOTO, working at height, confined space, permits)	Zero lost-time incidents (LTI); 100% permit compliance

D. Monitoring Indicators

- Asbestos air monitoring continuous; PM10/PM2.5 at SP1 daily during works; noise at SP2 weekly; GRM resolution ≤14 days.

E. Responsibilities

- Specialist contractor – asbestos abatement; Contractor – dust/noise control, phased works coordination; PIU – livelihood restoration; IESM – compliance verification.

7.2.3 BADA -- Site-Specific ESMP

Key sensitivities: Rural/agricultural fringe, aged infrastructure with asbestos risk pending survey, local farming/trading livelihoods, localized noise exceedance (SP3), GBV/SEA/SH.**A. Biophysical Management**

Impact	**ESMP Action**	**Performance Indicator**
Asbestos (aged structures, pending survey)	Licensed survey; abatement if confirmed; air monitoring	≤0.1 f/ml
Drainage/watercourse contamination	Sediment traps; bunded storage; no discharge	TSS ≤30 mg/L; zero spills
Localized noise exceedance (SP3)	Noise barriers; scheduling	≤55 dB(A)

B. Social Management

Impact	**ESMP Action**	**Performance Indicator**
GBV/SEA/SH	Confidential GRM; survivor-centred response	100% workers trained

C. Health & Safety Management

Impact	**ESMP Action**	**Performance Indicator**
Fuel spill / operational OHS	Emergency spill response plan; bunded storage; appropriate PPE	Response ≤30 minutes; zero spills
General OHS risks across project life (electricals, lone working, confined space, working at height, permits, etc.)	Implement and enforce a comprehensive OHS Management Plan covering: electrical safety; lock-out/tag-out; lone-working protocols; confined-space entry; working-at-height controls; permit-to-work system; toolbox talks; supervision; incident reporting	Zero lost-time incidents (LTI); 100% permit compliance; Daily toolbox talks conducted
Asbestos OHS (pending survey)	PPE; restricted access	100% PPE compliance

D. Monitoring Indicators

- Asbestos air monitoring continuous (if confirmed)
- PM10 weekly
- GRM resolution ≤14 days

E. Responsibilities

- Specialist contractor: asbestos abatement (if confirmed)
- PIU: livelihood restoration
- IESM: compliance verification

7.2.4 OGBOMOSHOTEDO -- Site-Specific ESMP

Key sensitivities: Asbestos (suspected), urban congestion, moderate livelihood impacts.

A. Biophysical Management

Impact	**ESMP Action**	**Performance Indicator**
Asbestos (suspected)	Licensed abatement; wet removal; HEPA vacuums	≤0.1 f/ml
Dust	Water spraying; cover stockpiles	No visible dust plumes
Erosion	Silt fences; hydromulch; slope stabilization	No sediment discharge

B. Social Management

Impact	ESMP Action	Performance Indicator
Labour influx	Worker Code of Conduct and site rules; CoC; ≥50% local hiring	Zero conflicts
GBV/SEA/SH	Confidential GRM; survivor-centred response	100% workers trained

C. Health & Safety Management

Impact	**ESMP Action**	**Performance Indicator**
Asbestos OHS (suspected)	P3 respirators; Type 5 coveralls; restricted access	100% PPE compliance
Traffic congestion	Marshals; speed limits; diversion routes	Zero incidents

Heat stress	Shade; hydration; rest cycles	Zero heat-related incidents

D. Monitoring Indicators

- Asbestos air monitoring continuous (if confirmed)
- PM10 weekly
- GRM resolution ≤14 days

E. Responsibilities

- Specialist contractor: asbestos abatement (if confirmed)
- Contractor: labour management, traffic control, erosion control
- PIU: GBV oversight
- IESM: quarterly audits

7.3 ESMP Summary Matrix

The table below consolidates all site-specific ESMP actions into a single corridor-wide matrix. It provides a quick reference for AfDB, FMEnv, NESREA, LASEPA, and project stakeholders, showing key risks, core mitigation actions, significance levels, and responsible parties for each PHC site.

Colour Codes: ● Critical □ Major □ Moderate □ Minor ● Positive

Site	Impact Category	Key Unmitigated Impact	Mitigation Measure	Hierarchy	Significance	Responsible
Agboju	Biophysical	Wetland loss	50 m buffer; biodiversity offset	Avoid/Offset	●	PIU
		Asbestos (suspected)	Licensed abatement; air monitoring	Avoid	●	Specialist
		Water contamination	Sediment traps; no wash-water discharge	Minimise	□	Contractor

		Dust	Water spraying; road dampening	Minimise	□	Contractor
	Social	Resettlement (13 PAPs)	Full RAP; compensation; livelihood restoration	Compensate/Restore	□	PIU
		Labour influx	Worker camp rules; CoC	Minimise	□	Contractor
		GBV/SEA/SH	Confidential GRM; survivor-centred response	Avoid/Minimise	●	PIU
		Market access	Maintain pedestrian routes	Minimise	□	Contractor
	Health & Safety	Traffic congestion	Marshals; speed limits	Minimise	□	Contractor
		Asbestos OHS (suspected)	PPE; restricted access	Avoid	●	Specialist
		Heat stress	Shade; hydration	Minimise	□	Contractor
Oridilu	Biophysical	Wetland loss	50 m buffer; biodiversity offset	Avoid/Offset	●	PIU

		Asbestos (suspected)	Licensed abatement; air monitoring	Avoid	●	Specialist
		Lagoon contamination	Bunded fuel storage; spill kits	Avoid/Minimise	□	Contractor
		Coastal erosion	Riprap; vegetated revetments	Minimise	□	Contractor
		Biodiversity disturbance	Sediment traps; avoid shoreline clearing	Minimise	□	Contractor
	Social	Livelihood disruption	Compensation; alternative livelihood support	Restore	□	PIU
	Health & Safety	Fuel spill risk	Emergency spill response plan	Minimise	●	Contractor
		Asbestos OHS (suspected)	PPE; restricted access	Avoid	●	Specialist
Bada	Biophysical	Asbestos (suspected)	Licensed abatement; HEPA vacuums	Avoid	●	Specialist

		Dust affecting trading	Water spraying; cover stockpiles	Minimise	□	Contractor
	Social	Livelihood disruption	Compensation; restoration	Restore	□	PIU
		Market access	Maintain pedestrian routes	Minimise	□	Contractor
	Health & Safety	Asbestos OHS (suspected)	PPE; restricted access	Avoid	●	Specialist
Ogbomoshotedo	Biophysical	Asbestos (suspected)	Licensed abatement; HEPA vacuums	Avoid	●	Specialist
		Dust	Water spraying; cover stockpiles	Minimise	□	Contractor
		Erosion	Silt fences; hydromulch	Minimise	□	Contractor
	Social	Labour influx	Worker camp rules; CoC	Minimise	□	Contractor
		GBV/SEA/SH	Confidential GRM; survivor-centred response	Avoid/Minimise	●	PIU

	Health & Safety	Asbestos OHS (suspected)	PPE; restricted access	Avoid	●	Specialist
		Traffic congestion	Marshals; speed limits	Minimise	□	Contractor
		Heat stress	Shade; hydration	Minimise	□	Contractor

7.4 Institutional Responsibilities

This section defines the institutional roles required to implement the ESMP across the four PHC sites. Clear responsibilities ensure accountability, regulatory compliance, and effective environmental and social performance throughout all project phases.

7.4.1 Institutional Framework Overview

The ESMP involves coordinated action among federal and state regulators, the PIU, contractors, facility operators, and independent monitors.

Entity	Role	Key Responsibilities
FMEnv	Federal regulator	EIA certification, compliance inspections
NESREA	National environmental regulator	Federal environmental standards enforcement, national compliance monitoring, and hazardous waste regulations
LASEPA	State regulator	Permits (air, noise, water), inspections
LAWMA	Waste regulator	Medical & general waste collection, manifests
PIU (LSMoH)	ESMP oversight	Contractor compliance, GRM, reporting, RAP oversight
Contractor(s)	ESMP implementation	CESMP, monitoring, OHS, GBV, waste, community liaison

Facility Operator	Operational ESMP	HMWMP, IPC, wastewater, GRM, maintenance
Licensed Asbestos Contractor	Hazardous materials	Surveys, abatement, air monitoring, disposal
IESM	Independent oversight	Quarterly audits, compliance verification
LGAs/CDAs	Local support	Community entry, PAP verification, GRM
AfDB	Financier	Safeguard supervision, compliance enforcement

7.4.2 Detailed Roles and Responsibilities

A. PIU (Lagos State Ministry of Health)

Brief explanation: The PIU ensures full ESMP implementation, regulatory compliance, and reporting.

Key responsibilities include:

- Enforcing ESMP, CESMP, RAP, HMWMP, GBV Action Plan
- Managing GRM and stakeholder engagement
- Ensuring contractors meet E&S obligations
- Coordinating with regulators
- Overseeing climate-resilient design
- Reporting to AfDB and FMEnv
- Capacity building for facility operators

B. Contractor(s)

Brief explanation: Contractors implement day-to-day ESMP actions during construction.

Key responsibilities include:

- Preparing CESMP
- Conducting air, noise, water monitoring
- Implementing dust, noise, erosion, spill, and waste controls
- Managing labour influx, OHS, GBV, traffic
- Reporting incidents within 24 hours
- Maintaining community liaison

C. Facility Operator (Operational Phase)

Brief explanation: Operators ensure ESMP compliance during facility operation.

Key responsibilities include:

- Implementing HMWMP and IPC
- Managing wastewater and energy systems
- Maintaining facility infrastructure
- Operating GRM
- Reporting quarterly to PIU

D. Independent Environmental & Social Monitor (IESM)

Brief explanation: The IESM provides independent oversight.

Key responsibilities include:

- Quarterly audits
- Compliance verification
- Non-compliance reporting
- Effectiveness assessment
- RAP verification
- Reporting to AfDB

7.5 Monitoring Plan

Monitoring is a critical component of the ESMP, ensuring that mitigation measures are implemented effectively and that environmental and social performance across the four PHC sites---Agboju, Oridilu, Bada, and Ogbomoshotedo---meets the requirements of AfDB ISS, FMEnv, NESREA, and LASEPA.

Monitoring indicators have been selected based on the site-specific risks identified in Chapter 5 and the mitigation measures outlined in Chapter 6. These indicators cover all relevant domains, including air quality, noise, water quality, soil erosion, waste management, labour and GBV risks, biodiversity protection, and climate resilience.

The monitoring plan ensures early detection of deviations, timely corrective actions, and continuous improvement throughout project implementation.

7.5.1 Monitoring Indicators

This section presents the full set of monitoring indicators for the four PHC sites. Each indicator specifies:

- What is monitored (impact/parameter)
- Why it is monitored (risk significance)
- How it is monitored (method)
- Where it is monitored (site-specific locations)

- How often (frequency)
- Who is responsible (Contractor, PIU, Facility Operator, IESM)
- When corrective action is required (trigger thresholds)

This consolidated monitoring matrix provides a **complete, auditable, AfDB-compliant** monitoring system that supports effective ESMP implementation.

Site-Specific Examples

- Agboju: Water quality (TSS, hydrocarbons), asbestos air monitoring (if confirmed), PAP resettlement monitoring
- Oridilu: Lagoon water quality, spill prevention, asbestos air monitoring (if confirmed)
- Bada: Asbestos fibres (if confirmed), dust impacts
- Ogbomoshotedo: Asbestos fibres (if confirmed), PM10, noise, GBV training

7.5.2 Monitoring Locations

Monitoring locations are selected based on proximity to **sensitive receptors**, ensuring accurate measurement of potential impacts.

Site-Specific Monitoring Locations

- **Agboju:** Nearest residential buildings (air quality, noise); water bodies downstream (water quality); wetland buffer zone (biodiversity)
- **Oridilu:** Nearest residential buildings (air quality, noise); Lagos Lagoon downstream sampling points (water quality); wetland buffer zone (biodiversity)
- **Bada:** Residences adjacent to asbestos-containing structures (asbestos, air quality)
- **Ogbomoshotedo:** Residences adjacent to asbestos-containing structures (asbestos, air quality)

These locations ensure that monitoring captures real exposure levels for communities and ecosystems.

7.5.3 Corrective Action Procedure

When monitoring results exceed established thresholds, corrective actions must be implemented immediately to prevent environmental or social harm. The procedure ensures rapid response, accountability, and compliance with AfDB ISS.

Corrective Action Steps

1. Identify exceedance through monitoring data, inspections, or GRM complaints.
2. Notify the PIU (verbal within 24 hours, written within 48 hours).
3. Investigate root cause to determine the source of the exceedance.
4. Implement immediate corrective action (e.g., increase watering, stop noisy activity).
5. Develop long-term corrective plan where structural improvements are required.

6. Verify effectiveness through follow-up monitoring.
7. Report to AfDB for serious incidents or repeated exceedances.
8. Update the ESMP if systemic issues are identified.

Examples of Corrective Actions

- PM10 exceedance: Increase watering frequency; cover stockpiles.
- Noise exceedance: Install temporary noise barriers; reschedule activities.
- TSS exceedance: Repair silt fences; clean sediment traps.
- Asbestos exceedance: Stop work; improve containment; re-monitor.

TABLE 7.1 -- ENVIRONMENTAL & SOCIAL MONITORING MATRIX (FOUR PHC SITES)

(Impact → Mitigation → Indicator → Parameter → Method → Frequency → Responsibility → Trigger)

A. Air Quality Monitoring

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Dust	Water spraying	PM10	PM10 (µg/m³)	Real-time monitor	Daily	Contractor	>50 µg/m³
Oridilu	Dust	Water spraying	PM10	PM10 (µg/m³)	Real-time monitor	Daily	Contractor	>50 µg/m³
Bada	Dust	Water spraying	PM10	PM10 (µg/m³)	Gravimetric	Weekly	Contractor	>50 µg/m³
Ogbomoshotedo	Dust	Water spraying	PM10	PM10 (µg/m³)	Gravimetric	Weekly	Contractor	>50 µg/m³
Agboju	Demolition dust	Water spraying	PM2.5	PM2.5 (µg/m³)	Real-time monitor	Weekly	Contractor	>25 µg/m³
Oridilu, Bada, Ogbomoshotedo	Asbestos (suspected)	Licensed abatement	Asbestos fibres	f/ml	PCM/TEM	Continuous	Specialist	>0.1 f/ml

B. Noise Monitoring

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Construction noise	Barriers, scheduling	Noise level	Leq dB(A)	Type 1 meter	Weekly	Contractor	>55 dB(A)
Oridilu	Construction noise	Barriers, scheduling	Noise level	Leq dB(A)	Type 1 meter	Weekly	Contractor	>55 dB(A)

Bada	Equipment noise	Silencers	Noise level	Leq dB(A)	Type 2 meter	Weekly	Contractor	>55 dB(A)
Ogbomoshotedo	Equipment noise	Silencers	Noise level	Leq dB(A)	Type 2 meter	Weekly	Contractor	>55 dB(A)

C. Water Quality Monitoring

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Lagoon contamination	Bunded storage	Lagoon quality	TSS, pH, hydrocarbons	Lab analysis	Monthly	Contractor	TSS >30 mg/L
Oridilu	Lagoon contamination	Bunded storage	Lagoon quality	TSS, pH, hydrocarbons	Lab analysis	Monthly	Contractor	TSS >30 mg/L
All sites	Sewage	Portable toilets	Coliforms	CFU/100ml	Membrane filtration	Monthly	Contractor	>0 CFU/100ml

D. Soil Erosion & Sediment Control

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Erosion	Silt fences	Fence condition	Tears, undercutting	Inspection	Weekly	Contractor	Any damage
Ogbomoshotedo	Erosion	Silt fences	Fence condition	Tears, undercutting	Inspection	Weekly	Contractor	Any damage
Agboju	Sediment runoff	Sediment traps	Trap condition	% full	Inspection	Weekly	Contractor	>50% full

Oridilu	Sediment runoff	Sediment traps	Trap condition	% full	Inspection	Weekly	Contractor	>50% full

E. Waste Management

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
All sites	Poor segregation	Segregated bins	Segregation	% correct	Inspection	Daily	Contractor	<90%
Oridilu, Bada, Ogbomoshotedo	Asbestos waste	Licensed disposal	Manifest	Completeness	Review	Per load	Specialist	Missing manifest
All sites	Medical waste	LAWMA disposal	Manifest	LAWMA receipts	Review	Monthly	Facility Operator	Missing receipt

F. Labour & GBV Monitoring

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Labour influx	Camp rules	Local hiring	% local	Records	Monthly	Contractor	<50%
Ogbomoshotedo	Labour influx	Camp rules	Local hiring	% local	Records	Monthly	Contractor	<50%
All sites	OHS	PPE	PPE compliance	% PPE	Inspection	Daily	Contractor	<95%
Agboju	GBV	GBV Action Plan	GBV training	% trained	Records	Monthly	Contractor	<100%

Ogbomoshotedo	GBV	GBV Action Plan	GBV training	% trained	Records	Monthly	Contractor	<100%
All sites	GBV cases	GRM	GBV resolution	% resolved	GRM log	Monthly	PIU	Any unresolved

G. Community Health & Safety

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Traffic	Marshals	Traffic incidents	# incidents	Log	Monthly	Contractor	Any incident
Ogbomoshotedo	Traffic	Marshals	Traffic incidents	# incidents	Log	Monthly	Contractor	Any incident
All sites	Access	Fencing	Access complaints	# complaints	GRM	Monthly	PIU	>1 complaint

H. Biodiversity & Wetland Monitoring

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
Agboju	Wetland	50 m buffer	Buffer integrity	Encroachment	GPS	Weekly	Contractor	Any encroachment
Oridilu	Wetland	50 m buffer	Buffer integrity	Encroachment	GPS	Weekly	Contractor	Any encroachment
Agboju	Lagoon biodiversity	Sediment traps	TSS	mg/L	Lab	Monthly	Contractor	>30 mg/L
Oridilu	Lagoon biodiversity	Sediment traps	TSS	mg/L	Lab	Monthly	Contractor	>30 mg/L
All sites	Revegetation	Native planting	Survival rate	% survival	Survey	3, 6, 12 months	Contractor	<80%

I. Climate Resilience

Site	Impact	Mitigation	Indicator	Parameter	Method	Frequency	Responsibility	Trigger
All sites	Flooding	Drainage upgrades	Flood events	# events	Inspection	After rain	PIU	Any flooding
All sites	Energy	Solar PV	Solar output	kWh	Logs	Monthly	Facility Operator	<90% capacity

7.6 Environmental & Social Management Actions

This section consolidates all ESMP actions across biophysical, social, and health & safety domains for the four PHC sites.

7.6.1 Biophysical Management Actions

Actions to protect wetlands, lagoon/lake ecosystems, air quality, soil, water, biodiversity, and hazardous materials.

Examples:

- Wetland buffers (Agboju, Oridilu)
- Lagoon/lake protection (Agboju, Oridilu)
- Asbestos abatement (Oridilu, Bada, Ogbomoshotedo -- if confirmed)
- Erosion control (Agboju, Ogbomoshotedo)
- Dust/noise control (all sites)

7.6.2 Social Management Actions

Actions to protect livelihoods, manage labour influx, prevent GBV/SEA/SH, and safeguard cultural heritage.

Examples:

- RAP implementation (Agboju -- 13 PAPs)
- Labour influx management (Agboju, Ogbomoshotedo)
- GBV Action Plan (all sites)
- Market access protection (Agboju, Bada)

7.6.3 Health & Safety Management Actions

Actions to protect workers and communities from OHS risks.

Examples:

- Asbestos OHS controls (Oridilu, Bada, Ogbomoshotedo -- if confirmed)
- Traffic management (Agboju, Ogbomoshotedo)
- Heat stress management (all sites)
- Community safety fencing (all sites)

7.7 Stakeholder Engagement & GRM

Stakeholder engagement ensures transparency and community participation. The GRM provides accessible channels for resolving grievances.

7.7.1 Stakeholder Engagement

Engagement activities include consultations, disclosure meetings, and community liaison.

Actions:

- Quarterly community meetings

- Disclosure of construction schedules
- Engagement on wetland conservation (Agboju, Oridilu)
- RAP consultations (Agboju)

7.7.2 Grievance Redress Mechanism (GRM)

The GRM provides confidential, accessible, and timely resolution of grievances.

Features:

- Multiple entry points (hotline, suggestion boxes, CLOs)
- GBV-sensitive reporting pathways
- Acknowledgement within 48 hours
- Resolution within 14 days
- Quarterly reporting to AfDB

7.8 Capacity Building & Training

Capacity building ensures that PIU, contractors, and facility operators can effectively implement the ESMP.

Training topics include:

- ESMP implementation
- OHS and emergency response
- GBV/SEA/SH prevention
- HMWMP and IPC
- Biodiversity protection
- Spill response
- Asbestos handling (Oridilu, Bada, Ogbomoshotedo -- if confirmed)

7.9 Reporting Framework

Reporting ensures accountability and continuous improvement.

Reporting Requirements

- **Contractor → PIU:** Weekly E&S reports
- **Facility Operator → PIU:** Quarterly operational reports
- **PIU → AfDB/FMEnv:** Monthly and annual reports
- **IESM → AfDB:** Quarterly audit reports

Reports include:

- Monitoring data
- GRM statistics
- Incidents and corrective actions
- Compliance status

- Training records

7.10 ESMP Budget & Implementation Schedule

This section outlines the budget categories and implementation schedule required for ESMP execution.

Budget Categories

- Monitoring equipment (air, noise, water)
- Asbestos abatement (Oridilu, Bada, Ogbomoshotedo -- if confirmed)
- Wetland/livelihood offsets (Agboju, Oridilu)
- RAP implementation (Agboju)
- GBV Action Plan implementation
- Training and capacity building
- Waste management (LAWMA contracts)
- IESM audits

Implementation Schedule

- **Pre-construction:** RAP (Agboju), asbestos surveys (Oridilu, Bada, Ogbomoshotedo), CESMP approval
- **Construction:** Full ESMP implementation and monitoring
- **Operation:** HMWMP, IPC, wastewater management**Annual:** ESMP review and update

7.10.1 Introduction to ESMP Budget

The ESMP budget provides the financial resources required to implement environmental, social, health, and safety mitigation measures across the four PHC sites in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. Costs are estimated based on Nigerian market rates, AfDB safeguard requirements, and typical ESMP implementation budgets for similar health infrastructure projects.

The budget covers:

- Environmental monitoring (air, noise, water, asbestos)
- Social mitigation (RAP implementation, livelihood restoration, GBV/SEA/SH prevention, stakeholder engagement)
- Health & safety management (OHS, traffic control, asbestos PPE)
- Waste management (LAWMA contracts, hazardous waste disposal)
- Biodiversity and wetland protection
- Capacity building and training
- Independent monitoring (IESM)

- Contingencies

Costs are presented as **Low**, **Medium**, or **High**, with indicative Nigerian Naira (₦) ranges for budgeting purposes:

- **Low:** ₦500,000 -- ₦3,000,000
- **Medium:** ₦3,000,000 -- ₦15,000,000
- **High:** ₦15,000,000 -- ₦80,000,000

7.10.2 Site-Specific ESMP Budget Breakdown

Table 7.2A provides a detailed breakdown of ESMP costs disaggregated across the four PHC facilities in the Group 1 Axis (Agboju, Oridilu, Bada, and Ogbomoshotedo), reflecting the distinct environmental and social sensitivities of each site.

Table 7.2A: Site-Specific ESMP Budget Breakdown by Component

ESMP Component	Agboju PHC (₦)	Oridilu PHC (₦)	Bada PHC (₦)	Ogbomoshotedo PHC (₦)	Total (₦)	Total (US$)	Responsible
Air Quality Monitoring	2,000,000	2,500,000	2,000,000	2,500,000	9,000,000	6,000	Contractor / PIU
Focus (Weekly sampling)	Agboju SP1	Oridilu SP1	Bada SP1	Ogbomoshotedo SP1	—	—	—
Noise Monitoring	1,500,000	1,500,000	1,500,000	1,500,000	6,000,000	4,000	Contractor
Water Quality Monitoring	2,000,000	—	2,000,000	2,000,000	6,000,000	4,000	Contractor
Asbestos Survey & Abatement	10,000,000	15,000,000	10,000,000	15,000,000	50,000,000	33,333	Specialist Contractor
Survey (all sites)	2,500,000	2,500,000	2,500,000	2,500,000	—	—	—
Abatement (confirmed sites)	—	Roofing (50–100m²)	Aged structures	Roofing / Aged	—	—	—
Air monitoring	Included	Included	Included	Included	—	—	—
Asbestos PPE	1,000,000	1,500,000	1,000,000	1,500,000	5,000,000	3,333	Contractor
Erosion / Sediment Control	2,000,000	2,000,000	2,000,000	2,000,000	8,000,000	5,333	Contractor
Drainage/Terrain margins	Urban runoff	Sandy soils	Seasonal runoff	Perimeter slope	—	—	—

Dust Control	1,500,000	1,500,000	1,500,000	1,500,000	6,000,000	4,000	Contractor
Traffic Management	4,000,000	—	—	2,000,000	6,000,000	4,000	Contractor
(Urban corridors)	Yes	—	—	Yes	—	—	—
Fuel Spill Prevention	1,500,000	1,500,000	2,500,000	1,500,000	7,000,000	4,667	Contractor
(Generator/Storage)	Yes	Yes	Yes	Yes	—	—	—
Waste Management	3,500,000	3,500,000	3,500,000	3,500,000	14,000,000	9,333	Facility Operator
(LAWMA / non-burn)	All sites	All sites	All sites	All sites	—	—	—
Livelihood Restoration	25,000,000	20,000,000	20,000,000	25,000,000	90,000,000	60,000	PIU
(Traders/Fringe users)	High	Medium	Medium	High	—	—	—
GBV/SEA/SH Action Plan	5,000,000	4,000,000	4,000,000	5,000,000	18,000,000	12,000	PIU / Contractor
Labour Influx Management	3,000,000	—	1,500,000	1,500,000	6,000,000	4,000	Contractor
(Transit corridor)	Yes	—	Yes	Yes	—	—	—
Stakeholder Engagement	3,000,000	3,000,000	3,000,000	3,000,000	12,000,000	8,000	PIU
GRM Implementation	1,500,000	1,500,000	1,500,000	1,500,000	6,000,000	4,000	PIU
IESM Quarterly Audits	7,500,000	7,500,000	7,500,000	7,500,000	30,000,000	20,000	IESM
Climate Resilience	15,000,000	15,000,000	15,000,000	15,000,000	60,000,000	40,000	Contractor / PIU

Elevated platform	Yes	—	—	Yes	—	—	—
Oversized drainage	Yes	Yes	Yes	Yes	—	—	—
Elevated electricals	Yes	Yes	Yes	Yes	—	—	—
Sub-Total	89,000,000	84,000,000	80,500,000	90,000,000	343,500,000	229,000	—
Contingency (10%)	8,900,000	8,400,000	8,050,000	9,000,000	34,350,000	22,900	PIU
Sub-Total	97,900,000	92,400,000	88,550,000	99,000,000	377,850,000	251,900	—
Management & Supervision	9,800,000	9,300,000	8,850,000	9,200,000	37,150,000	24,767	PIU
TOTAL	107,700,000	101,700,000	97,400,000	108,200,000	415,000,000	276,667	—

Note: Values are approximate and based on Nigerian market rates (2026). Exchange rate: US$1 = ₦1,500 (indicative).

7.10.3 Site-Specific Budget Summary

Table 7.2B provides a summary of the Site-Specific ESMP Budget for the Group 1 Axis.

Table 7.2B: Site-Specific ESMP Budget Summary

Site	Construction Phase (₦)	Construction Phase (US$)	Annual Operational (₦)	Annual Operational (US$)
Agboju PHC	107,700,000	71,800	10,000,000–13,000,000	6,667–8,667
Oridilu PHC	101,700,000	67,800	8,000,000–11,000,000	5,333–7,333
Bada PHC	97,400,000	64,933	8,000,000–11,000,000	5,333–7,333
Ogbomoshotedo PHC	108,200,000	72,133	10,000,000–13,000,000	6,667–8,667
TOTAL	415,000,000	276,667	36,000,000–48,000,000	24,000–32,000

7.10.4 Budget Verification Statement

The ESMP budget presented in Table 7.2 has been developed specifically for the four PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis (Agboju, Oridilu, Bada, and Ogbomoshotedo). The budget range (₦220,000,000 – ₦415,000,000) reflects the following site-specific factors:

1. Resettlement Action Plan (Agboju):

- 13 PAPs (shop owners) requiring compensation and livelihood restoration
- Independent valuation and compensation at full replacement cost
- Livelihood restoration programs (skills training, business grants)
- Vulnerability support for women-headed households, elderly, and persons with disabilities

2. Asbestos Abatement (3 Sites):

- Oridilu PHC: Suspected asbestos in roof and ceiling (70–100 m²)
- Bada PHC: Suspected asbestos in roof (50–100 m²)
- Ogbomoshotedo PHC: Suspected asbestos in roof (50–100 m²)
- Licensed survey, wet removal, air monitoring, and hazardous waste disposal

3. Urban Context and Dense Population:

- Higher traffic management costs (Agboju, Ogbomoshotedo)
- Enhanced community engagement requirements (dense urban settlements)
- Increased GBV/SEA/SH prevention measures (labour influx in urban areas)

4. Climate Vulnerability:

- Very high flood risk at Agboju and Oridilu (Lagos Lagoon proximity)
- Coastal protection measures required (riprap, vegetated revetments)
- Elevated foundations and flood barriers for two sites

5. Wetland Protection:

- 50 m buffers and biodiversity offsets (Agboju, Oridilu)
- Lagoon water quality monitoring

7.10.5 Total Estimated ESMP Cost (Four Phc Sites)

Phase / Category	**Estimated Cost (₦)**	**Estimated Cost (US$)**
Construction Phase	₦220,000,000 – ₦415,000,000	$146,667 – $276,667
Operational Phase (Annual)	₦30,000,000 – ₦40,000,000	$20,000 – $26,667

Note: Values are approximate and based on Nigerian market benchmarks and an indicative exchange rate of US$1 = ₦1,500.

7.10.6 Implementation Schedule (Summary)

Pre-Construction (Months 1--3)

- RAP implementation (Agboju)
- Asbestos surveys (Oridilu, Bada, Ogbomoshotedo)
- CESMP approval
- Stakeholder engagement
- GRM activation

Construction (Months 4--18)

- Full ESMP implementation
- Monitoring (air, noise, water, asbestos)
- GBV/SEA/SH training
- Traffic management (Agboju, Ogbomoshotedo)
- Wetland protection (Agboju, Oridilu)
- Lagoon protection (Agboju, Oridilu)
- Quarterly IESM audits

Operation (Year 2 onward)

- HMWMP implementation
- IPC compliance
- Wastewater management
- Solar PV maintenance
- Quarterly reporting to PIU
- Annual ESMP review

7.11 Conclusion and Summary of Environmental and Social Management Plan (ESMP)

Chapter 7 has presented the complete Environmental and Social Management Plan (ESMP) for the four PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis---Agboju, Oridilu, Bada, and Ogbomoshotedo. The ESMP translates the mitigation measures identified in Chapter 6 into a practical, structured, and enforceable framework that ensures environmental protection, social responsibility, and health and safety performance throughout all phases of the project.

The chapter outlines the institutional responsibilities, monitoring indicators, monitoring locations, corrective action procedures, management actions, stakeholder engagement processes, capacity-building requirements, reporting obligations, and a costed implementation schedule. Together, these components provide a clear roadmap for achieving compliance with AfDB ISS, FMEnv, NESREA, LASEPA, IFC Performance Standards, WHO IPC guidelines, and ILO labour and OHS conventions.

The ESMP is site-specific, reflecting the unique sensitivities of each PHC location:

- Agboju: resettlement 13 PAPs), critical wetland habitat, urban congestion, asbestos (suspected)
- Oridilu: lagoon ecosystem, fisheries, coastal erosion, wetland loss, asbestos (suspected)
- Bada: asbestos-containing structures (suspected), urban congestion
- Ogbomoshotedo: asbestos-containing structures (suspected), urban congestion, labour influx

The monitoring plan provides a robust mechanism for tracking environmental and social performance through measurable indicators, defined responsibilities, and clear corrective action triggers. This ensures that deviations are identified early and addressed promptly, maintaining compliance and safeguarding communities and ecosystems.

The ESMP also emphasises stakeholder engagement, GRM functionality, and capacity building, recognising that effective environmental and social management depends on continuous communication, transparency, and institutional strengthening.

Finally, the costed ESMP budget and implementation schedule ensure that adequate resources and timelines are allocated to support full compliance and long-term sustainability.

Overall, the ESMP provides a comprehensive, actionable, and auditable framework that will guide the Lagos State Ministry of Health, contractors, facility operators, regulators, and the Independent Environmental and Social Monitor (IESM) in delivering a project that is environmentally sound, socially responsible, and aligned with international best practice.

CHAPTER 8 -- HAZARDOUS AND MEDICAL WASTE MANAGEMENT, DECOMMISSIONING AND RESTORATION PLAN

8.1 Introduction

This chapter presents two complementary management frameworks required for the safe, compliant, and sustainable handling of hazardous and medical waste across the PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis, and for the eventual end-of-life management of each facility:

1. The Hazardous and Medical Waste Management Plan (HMWMP)

This plan applies to both the **construction/refurbishment phase** and the **operational phase** of the PHCs. It provides a complete system for the segregation, collection, storage, treatment, transport, and disposal of all hazardous and medical waste streams. The HMWMP is designed to protect healthcare workers, patients, waste handlers, and surrounding communities from exposure to infectious, chemical, pharmaceutical, and asbestos-containing waste. It also prevents environmental contamination of soil, groundwater, surface water, and air.

2. The Decommissioning and Restoration Plan

Although the PHC facilities are expected to operate for **50+ years**, the Federal Ministry of Environment (FMEnv) requires that all ESIA reports include a **Decommissioning and Restoration Plan**. This ensures that, at the end of each facility's life cycle, demolition and site restoration are carried out safely, responsibly, and in compliance with national regulations. The plan covers the removal of hazardous materials (including asbestos), demolition waste management, site rehabilitation, and restoration of ecological and community assets.

Regulatory Compliance

Both the HMWMP and the Decommissioning Plan comply with:

- AfDB ISS (OS4 -- Pollution Prevention and Hazardous Materials)
- FMEnv National Environmental Regulations (2009)
- NESREA Hazardous Waste Regulations (2009)
- Harmful Waste Act CAP H1 LFN 2004
- LASEPA Waste Management Law (2017)
- LAWMA Healthcare Waste Guidelines (2019)
- IFC EHS Guidelines for Healthcare Facilities (2012)
- WHO Safe Management of Wastes from Health Care Activities (2014)
- ILO OHS Conventions (155 and 161)

These frameworks ensure that hazardous and medical waste is managed according to international best practice and Nigerian regulatory requirements, and that decommissioning activities do not pose risks to workers, communities, or the environment.

Purpose of Chapter

This chapter provides:

- A complete Hazardous and Medical Waste Management Plan (HMWMP) for all PHC facilities
- A detailed Asbestos Management Plan for Oridilu, Bada, and Ogbomoshotedo (suspected)
- A comprehensive Occupational Health and Safety (OHS) framework for waste handlers
- A Spill Response Plan for chemical, infectious, fuel, and asbestos spills
- A Monitoring and Reporting System for waste generation, treatment, and disposal
- A Decommissioning and Restoration Plan required by FMEnv for end-of-life facility management
- Clear roles and responsibilities for all actors (PIU, Facility Operators, LAWMA, LASEPA, Contractors)
- A budget estimate for implementing the HMWMP and decommissioning activities

Together, these components ensure that hazardous and medical waste is managed safely throughout the project lifecycle and that future decommissioning activities protect public health, environmental quality, and community wellbeing.

PART A: HAZARDOUS AND MEDICAL WASTE MANAGEMENT PLAN (HMWMP)

8.2 Objectives of The HMWMP

The HMWMP aims to:

1. Protect healthcare workers, patients, waste handlers, and communities from hazardous and medical waste risks.
2. Prevent environmental contamination of soil, groundwater, surface water, and air.
3. Ensure compliance with AfDB ISS, FMEnv, NESREA, LASEPA, LAWMA, WHO, IFC, and ILO standards.
4. Establish a practical, enforceable waste management system for segregation, collection, storage, treatment, transport, and disposal.
5. Minimise waste generation through reduction, reuse (where safe), and improved inventory management.
6. Build capacity through training for all personnel involved in waste handling.
7. Establish monitoring and reporting procedures for continuous improvement.
8. Provide emergency response procedures for spills, needle-stick injuries, and hazardous waste incidents.

8.3 Regulatory And Policy Framework

8.3.1 Nigerian Regulations

Nigeria has a comprehensive regulatory framework governing hazardous and medical waste management. The HMWMP aligns with all applicable federal and state laws.

Table 8.1 -- Nigerian Regulations Relevant to HMWMP

Regulation	Key Requirements	Relevance to HMWMP
FMEnv National Environmental (Sanitation and Wastes Control) Regulations, 2009	Requires proper segregation, storage, collection, treatment, and disposal of all waste streams; prohibits open burning	Core framework for medical waste segregation, storage, and disposal
Harmful Waste Act Cap H1 LFN 2004	Prohibits import, transport, dumping, or disposal of harmful waste; imposes criminal penalties	Governs asbestos, chemical waste, pharmaceutical waste
NESREA Hazardous Waste Regulations (2009)	Classification, labeling, manifesting, transport, and disposal of hazardous waste	Applies to chemical waste, asbestos, expired batteries
LASEPA Waste Management Law (2017)	State-level permits for waste handling; environmental compliance inspections	Required for PHC waste storage and disposal
LAWMA Healthcare Waste Guidelines (2019)	Colour coding, packaging, collection schedules, disposal at designated facilities	Governs operational medical waste management

8.3.2 International Standards

International standards provide technical guidance and best practice benchmarks for safe waste management.

Table 8.2 -- International Standards Relevant to HMWMP

Standard	Key Requirements	Relevance to HMWMP
AfDB ISS -- OS4 (Pollution Prevention and Hazardous Materials)	Requires hazardous materials management plan; pollution prevention hierarchy	Core safeguard framework
IFC EHS Guidelines for Healthcare Facilities (2012)	Segregation, sharps management, wastewater treatment, autoclave standards	Technical specifications for PHC operations
WHO Safe Management of Wastes from Health Care Activities (2014)	Waste classification, colour coding, segregation, storage, transport, treatment	Adopted in full for HMWMP
ILO Convention 155 & 161	Worker protection, medical surveillance, OHS systems	Applies to waste handlers, asbestos workers

8.4 Healthcare Waste Categories (WHOo Classification)

Table 8.3 -- WHO Waste Categories, Colour Codes, and Disposal Methods

Category	Description	Examples	Colour Code	Treatment / Disposal
General Waste	Non-hazardous, non-infectious	Paper, food waste	Black	LAWMA landfill
Infectious Waste	Contaminated with blood/body fluids	Dressings, swabs	Yellow	Autoclave → landfill
Sharps	Items that puncture skin	Needles, scalpels	Red	Incineration
Pharmaceutical Waste	Expired/unused drugs	Tablets, vials	Brown	Return to manufacturer or incineration
Chemical Waste	Hazardous chemicals	Formalin, xylene	Blue	Licensed hazardous waste contractor

Asbestos	ACM roofing sheets	Oridilu, Bada, Ogbomoshotedo (suspected)	Special label	Hazardous waste landfill

8.5 Waste Management System Overview

The HMWMP follows the WHO waste management hierarchy:

1. **Minimisation** -- reduce waste generation at source
2. **Segregation at Source** -- colour-coded bins at point of generation
3. **Collection & Storage** -- sealed bags, secure storage area
4. **Internal & External Transport** -- dedicated trolley; LAWMA collection
5. **Treatment** -- autoclaving, chemical disinfection
6. **Final Disposal** -- LAWMA landfill; hazardous waste landfill

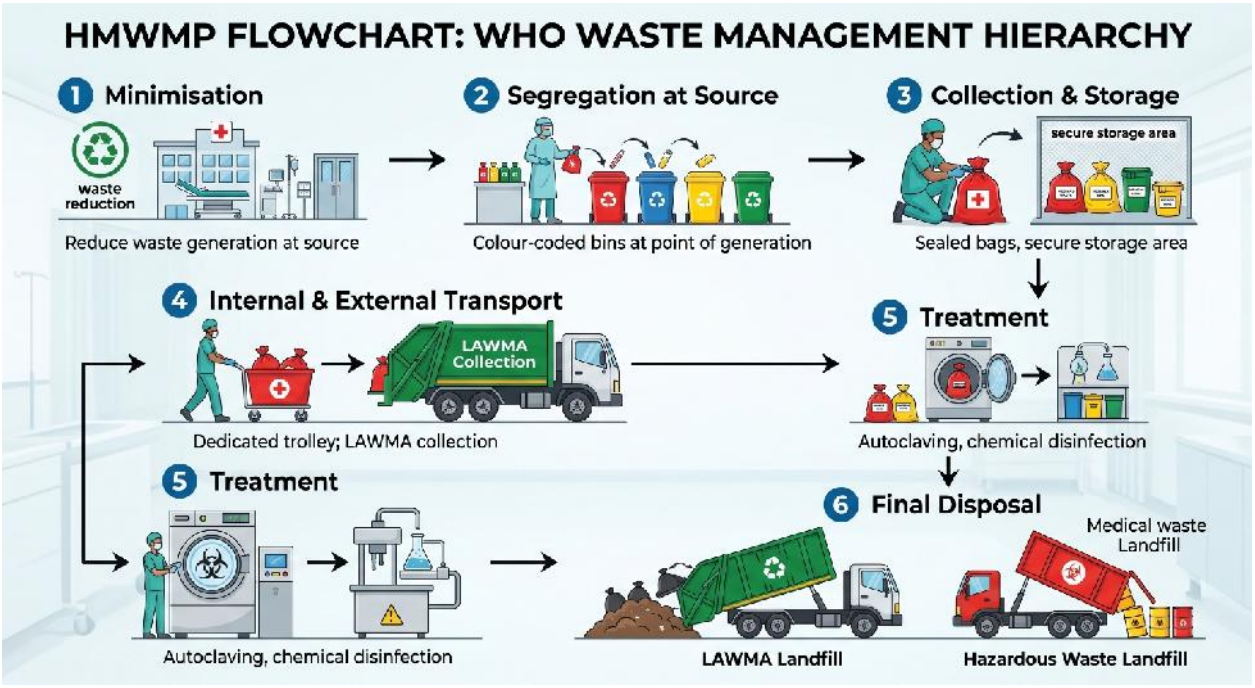


Figure 8.1: Flowchart of Waste Management

8.6 Waste Minimisation

Table 8.4 -- Waste Minimization Strategies

Strategy	Action	Responsible	Target
Reduce packaging	Bulk ordering	Facility Manager	10% reduction
Avoid over-ordering	Inventory system	Pharmacy	<1% expired
Safe reuse	Sterilise reusable items	Clinical Staff	N/A

Replace hazardous chemicals	Use digital thermometers	Laboratory	Mercury eliminated
Reusable sharps containers	Autoclavable containers	Clinical Staff	Reduced plastic waste
Segregation at source	Correct bin use	All staff	100% compliance

8.7 Waste Segregation at Source

8.7.1 WHO Colour Coding System

Category	**Colour**	**Container**	**Label**	**Examples**
General	Black	Plastic bin	"General Waste"	Paper
Infectious	Yellow	Leak-proof bin	Biohazard symbol	Dressings
Sharps	Red	Puncture-proof	"Sharps"	Needles
Pharmaceutical	Brown	Rigid container	"Pharmaceutical Waste"	Expired drugs
Chemical	Blue	Chemical-resistant	"Chemical Waste"	Formalin
E-Waste & Batteries	Dark Grey / Dedicated Label	Sturdy plastic crates / designated e-waste bins	"Electronic & Battery Waste" (WEEE symbol)	Broken IT equipment, small diagnostic gadgets, UPS units, circuit boards, discarded lithium/alkaline batteries

8.7.2 Segregation Procedures

1. Place colour-coded bins at all waste generation points
2. Line bins with matching colour bags
3. Segregate waste at point of generation
4. Do not overfill bins (max ¾ full)
5. Seal bags when full
6. Label bags with facility name, date, category
7. Transport sealed bags to storage area

8.7.3 Segregation Monitoring

Indicator	**Target**	**Method**	**Frequency**	**Responsible**

Segregation compliance	≥95%	Spot checks	Daily	Supervisor
Infectious waste in black bags	<1%	Inspection	Daily	Waste Handler
Sharps in plastic bags	Zero	Inspection	Daily	Waste Handler
Training compliance	100%	Records	Quarterly	Facility Manager

8.8 Collection, Internal Transport, and Storage

8.8.1 Collection Procedures

- Waste handler collects sealed bags daily
- Uses dedicated trolley
- Replaces bin liners
- Cleans bins with 0.5% chlorine
- Records collection in waste log

8.8.2 Storage Requirements

- Lockable, ventilated storage area
- Impermeable floor
- Signage: "Hazardous Waste Storage -- Authorised Personnel Only"
- Max storage time: 48 hours for infectious waste

8.9 Waste Treatment Technologies

8.9.1 Autoclaving

- 121°C, 30 minutes, 15 psi
- Monthly biological indicator testing
- Weekly cleaning

8.9.2 Chemical Disinfection

- 0.5--1% chlorine
- 30-minute contact time
- Suitable for small volumes of liquid waste

8.9.3 Recommended Treatment by Facility Type

Facility Type	**Waste Volume**	**Treatment**
New PHCs	50–200 kg/day	Autoclave + shredder
Refurbished PHCs	50–200 kg/day	Autoclave + shredder

8.10 Asbestos Management Plan

See the standalone Asbestos Management Plan (Appendix 6 for full procedures. Summary:

Site	Status	Type	Location	Estimated Quantity
Oridilu PHC	Suspected	Chrysotile	Roof, ceiling	70–100 m²
Bada PHC	Suspected	Chrysotile	Roof	50–100 m²
Ogbomoshotedo PHC	Suspected	Chrysotile	Roof	50–100 m²

Pre-removal surveys at all three sites by a licensed FMEnv-accredited assessor; wet-method removal; clearance monitoring <=0.01 f/ml; hazardous waste landfill disposal with manifest.

8.11 Occupational Health And Safety For Waste Handlers

PPE by task (gloves, aprons, boots, masks; puncture-proof gloves for sharps; P3 respirators and Type 5 coveralls for asbestos work); Hepatitis B vaccination; tetanus booster; needle-stick protocol (PEP within 72 hours); annual medical surveillance; asbestos medical surveillance where abatement occurs.

8.12 Spill Response Plan

Small chemical spills – absorb, hazardous bag; large chemical spills – evacuate, contain; infectious spills – PPE, chlorine, yellow bag; fuel/oil spills (particular relevance at generator yards and drainage-adjacent works across Agboju, Oridilu, Bada, and Ogbomoshotedo) – deploy spill kit, report to NOSDRA / LASEPA. Any spill or discharge risk to nearby storm drains, wetlands, or watercourses triggers immediate containment and notification to LASEPA/NOSDRA within 24 hours.

8.13 Monitoring and Reporting

Waste generation, segregation compliance, autoclave parameters, manifests, LAWMA collection, asbestos monitoring **(all 4 sites pending pre-construction survey), needle-stick incidents, and training compliance.**

8.14 Roles and Responsibilities

As per the standardized institutional structure (Facility Manager, Clinical Staff, Waste Handler, Facility Supervisor, LAWMA, Licensed Hazardous Waste Contractor, PIU, LASEPA, AfDB), applied identically across Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs.

8.15 Budget Estimate

This section provides a detailed cost estimate for implementing the HMWMP and Decommissioning Plan across all PHC facilities in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. Costs are based on Nigerian market rates, WHO/IFC technical requirements, and FMEnv regulatory expectations.

Capital & Operational Cost Estimate (All 4 PHCs)

A. CAPITAL COSTS (One-time investments)

Item	Description	Estimated Cost (USD)	Responsible
Autoclave (per PHC)	121°C, 30 min, 15 psi; stainless steel chamber	$40,000–$80,000	Facility Operator
Shredder (per PHC)	For post-autoclave waste volume reduction	$16,000–$40,000	Facility Operator
Waste Storage Area Construction	Ventilated, lockable, impermeable flooring	$16,000–$40,000	Facility Operator
Spill Kits (per facility)	Chemical, infectious, fuel spill kits	$800–$1,600	Facility Operator
PPE for Waste Handlers (annual)	Gloves, boots, aprons, goggles, masks	$4,000–$8,000	Facility Operator
Asbestos Abatement (Oridilu, Bada, Ogbomoshotedo -- if confirmed)	Survey, wet removal, air monitoring, disposal	$10,000–$50,000 per site	PIU / Contractor

B. OPERATIONAL COSTS (Annual)

Item	Description	Estimated Cost (USD)	Responsible
LAWMA Collection Fees	Twice-weekly infectious waste collection	$16,000–$40,000	Facility Operator
Hazardous Waste Contractor (Chemicals)	Annual chemical waste disposal	$2,000–$10,000	Facility Operator
Autoclave Maintenance	Spare parts, servicing	$4,000–$8,000	Facility Operator
Biological Indicator Strips	Monthly autoclave validation	$500	Facility Operator
Training (annual)	Waste handlers, clinical staff	$4,000–$8,000	Facility Operator
Solar Battery Disposal	Hazardous waste disposal	$1,000–$3,000	Facility Operator

C. DECOMMISSIONING COSTS (End-of-life)

Item	Description	Estimated Cost (USD)	Responsible
Demolition Works	Manual/mechanical demolition	$20,000–$60,000	Contractor
Asbestos Removal (if present)	Full abatement & hazardous landfill	$10,000–$50,000	Specialist Contractor
Site Restoration	Regrading, revegetation, erosion control	$10,000–$40,000	Contractor
Borehole & Septic Tank Decommissioning	Sealing, sludge disposal	$5,000–$15,000	Contractor
Community Infrastructure Restoration	Road repair, debris removal	$5,000–$20,000	Contractor

Total Estimated Cost (All 4 PHCs)

- Year 1 (Capital + Operational): $100,000–$250,000
- Annual Operational Cost: $30,000–$60,000
- Decommissioning Cost per PHC: $50,000–$150,000

PART B: DECOMMISSIONING AND RESTORATION PLAN

8.16 Emergency Preparedness and Response Plan (EPRP)

In accordance with AfDB Operational Safeguard 4 (OS4) requirements, which mandate that borrowers prepare an Emergency Preparedness and Response Plan in coordination with relevant local authorities and affected communities, this EPRP establishes the framework for preventing, preparing for, responding to, and recovering from emergencies at all four PHC facilities.

8.16.1 Emergency Scenarios

Emergency Type	Likelihood	Potential Impact	Sites Most at Risk
Fire	Medium	Structural damage, injury, service disruption	All sites
Flooding	**High**	Facility inundation, equipment damage, access loss	Agboju, Oridilu
Medical Emergency	High	Patient/staff injury, cardiac arrest, obstetric emergency	All sites
Chemical Spill	Low–Medium	Exposure, contamination, service disruption	All sites (lab chemicals)
Security Threat	Low–Medium	Injury, facility damage, service disruption	Agboju, Ogbomoshotedo
Severe Storm/Heatwave	Medium	Structural damage, power loss, heat-related illness	All sites
Asbestos Release	Low (if proper abatement)	Worker/community exposure to airborne fibres	Oridilu, Bada, Ogbomoshotedo

8.16.2 Emergency Response Procedures

A. Fire Emergency

Step	**Action**	**Responsible**
1	Raise alarm (shout, fire alarm bell, call "Fire!")	Anyone
2	Evacuate building/area (assembly point)	All personnel
3	Call fire service (LASG Fire Service: 112)	Site supervisor
4	Attempt to extinguish small fire (if trained)	Trained fire marshal
5	Do not enter if fire large or smoke thick	All personnel

6	Account for all personnel (roll call)	Site supervisor
7	First aid for injured	First aider
8	Report to PIU and AfDB (within 24 hours)	Contractor / PIU

B. Flooding Emergency

Step	Action	Responsible
1	Monitor weather forecast (rainy season)	Site supervisor
2	If heavy rain forecast: move equipment to higher ground, deploy flood barriers, clear drains	Site supervisor
3	If flooding occurs: shut off electrical supply	Electrician
4	Evacuate to higher ground (assembly point)	All personnel
5	Do not walk or drive through floodwater	All personnel
6	After flood: inspect building, pump out water, clean and disinfect	Site supervisor / Facility operator
7	Report to PIU and AfDB (within 24 hours)	Contractor / PIU / Facility operator

C. Chemical Spill

Step	Action	Responsible
1	Evacuate area (10 m radius)	Anyone
2	Wear PPE (gloves, goggles, coverall)	Spill responder
3	Contain spill (spill kit – absorbent booms)	Spill responder
4	Absorb spill (absorbent pads, granules)	Spill responder
5	Collect contaminated absorbent in hazardous waste bag	Spill responder
6	Dispose through licensed hazardous waste contractor	Contractor
7	If spill reached water body, notify LASEPA and NOSDRA	Contractor / PIU
8	Report to PIU and AfDB (within 24 hours)	Contractor

D. Asbestos Release (if confirmed)

Step	Action	Responsible
1	Stop work immediately	Site supervisor
2	Evacuate area (100 m radius)	Site supervisor

3	Wear PPE (Type 5 coverall, P3 respirator)	Licensed abatement contractor
4	Improve containment (negative pressure enclosure, HEPA filtration)	Licensed abatement contractor
5	Air monitoring (PCM) – action level 0.1 f/ml	Licensed air monitoring consultant
6	If levels exceed 0.1 f/ml, continue containment improvements	Licensed abatement contractor
7	Notify PIU, LASEPA, and NESREA	PIU
8	Medical surveillance for exposed workers	Occupational health physician
9	Report to AfDB (within 24 hours)	PIU

E. GBV Incident

(See Chapter 9 – GBV/SEA/SH Action Plan for full protocol)

8.16.3 Emergency Equipment and Supplies

Equipment/Supply	**Quantity per Site**	**Location**
Fire Extinguishers	4	Reception, Lab, Store, Staff Room
Fire Blankets	2	Lab, Kitchen
First Aid Kits	3	Reception, Lab, Staff Room
Spill Kits	2	Lab, Store
Emergency Lighting	Throughout	All areas
Evacuation Chairs	2	Main Entrance, Staff Exit
Sandbags (flood protection)	20	Storage Area

8.16.4 Training and Drills

Drill Type	Frequency	Participants
Fire Drill	Quarterly	All workers
Evacuation Drill	Semi-annually	All workers
Spill Drill	Annually	Spill responders
GBV Response Drill	Annually	GRM focal points, GBV Specialist
Flood Drill	Annually (before rainy season – March)	All workers

8.16.5 Emergency Contact List

Emergency Service	**Contact**	**Location**	**Notes**
Fire Service (LASG)	112 / 07033830823	Nearest fire station	National & State emergency number
Police	112 / 07065718069	Nearest police station	National emergency number
Ambulance (LASG)	112 / 767	Nearest hospital	Lagos State Emergency Ambulance Service (LASAMBUS)
LASEPA (emergency – pollution)	+234-704-635-1295 / +234-815-045-8639	LASEPA head office, Alausa, Ikeja	For chemical spills, air pollution, and environmental compliance
NOSDRA (spill reporting)	08035486899 / 08168308820	Lagos Zonal Office (Surulere)	For oil, fuel, and hazardous product spills
PIU Safeguards Team	+234-803-000-0000 *(Project Hotline)*	Alausa, Ikeja	24-hour safeguard and grievance redress contact
GBV Referral – Medical (PEP)	0800-033-3333 / Nearest General Hospital	Alimosho / Ajeromi General Hospital or LASUTH	Nearest designated facility with Post-Exposure Prophylaxis (PEP)
GBV Referral – Psychosocial	+234-815-577-0000	Mirabel Centre, Lagos	Free confidential 24/7 psychosocial counselling
GBV Referral – Legal	0800-033-3333	Lagos State DSVA / Ministry of Women Affairs, Alausa	Toll-free legal aid and survivor support line
Nearest Clinic/Hospital	Axis-Specific Site Facility	Agboju / Oridilu / Bada / Ogbomoshotedo	For immediate localized medical stabilization and first aid

8.17 Objectives

The Decommissioning and Restoration Plan aims to:

1. Ensure safe removal, handling, and disposal of hazardous materials (asbestos, chemicals, batteries).
2. Minimise environmental impacts such as dust, noise, erosion, and water pollution during demolition.
3. Protect worker and community health and safety through OHS controls and emergency procedures.
4. Restore the site to a stable, safe, and environmentally acceptable condition.
5. Rehabilitate ecological features such as wetlands, lagoon margins, and vegetation.
6. Maintain community access and infrastructure during and after decommissioning.
7. Ensure compliance with FMEnv, NESREA, LASEPA, AfDB ISS, and WHO standards.
8. Provide clear roles, responsibilities, and monitoring requirements.

8.18 Decommissioning Strategy and Activities

8.18.1 Physical Infrastructure

Activity	**Description**	**Environmental & Social Considerations**
Equipment Salvage	Remove medical equipment, solar panels, batteries, furniture	Hazardous waste (batteries), safe handling, recycling
Building Demolition	Manual or mechanical demolition of structures	Dust suppression, noise control, asbestos removal, OHS
Demolition Waste Management	Segregate demolition waste (metal, concrete, wood)	Recycling, hazardous waste manifests, LAWMA disposal
Site Restoration	Regrade land, replant native species, stabilize slopes	Soil erosion control, biodiversity restoration

8.18.2 Utilities and Ancillary Infrastructure

Activity	**Description**	**Environmental & Social Considerations**
Septic Tank Decommissioning	Pump out sludge, remove tank, backfill	Sludge treated as hazardous waste; groundwater protection

Borehole Decommissioning	Seal borehole with grout	Prevent groundwater contamination
Rainwater Harvesting System Removal	Remove tanks, pipes, gutters	Waste management (plastic/concrete)
Solar PV System Removal	Remove panels, inverters, batteries	Hazardous waste (batteries), recycling of panels

8.19 Environmental Restoration Measures

8.19.1 Wetlands and Lagoon Margins

Site	**Restoration Measure**
Agboju (Lagos Lagoon)	Restore shoreline; replant native mangroves (*Rhizophora racemosa*); remove invasive species
Oridilu (Lagos Lagoon)	Restore shoreline; replant native mangroves (*Rhizophora racemosa*); remove invasive species

8.19.2 Soils and Erosion Control

- Regrade disturbed areas to original contours
- Apply stored topsoil and revegetate
- Install silt fences and check dams until vegetation reaches ≥80% cover

8.19.3 Air Quality and Noise Management

- Water spraying during demolition
- Restrict demolition hours to 7:00--18:00
- Notify community at least 7 days in advance

8.20 Socio-Economic and Cultural Restoration

8.20.1 Livelihood Transition and Support

- Provide 3-month advance notice to community
- Offer skills training and job placement assistance
- Donate usable equipment to nearby health facilities

8.20.2 Community Infrastructure and Access

- Restore access roads (grading, pothole repair)
- Remove all demolition debris
- Ensure proper drainage to prevent standing water

8.20.3 Cultural Heritage Protection

- Apply Chance Finds Procedure during demolition
- Stop work immediately if artefacts are discovered
- Notify LASM and allow archaeological assessment

8.21 Monitoring and Reporting

Table 8.5 -- Decommissioning Monitoring Requirements

Parameter	**Indicator**	**Frequency**	**Responsible**
Asbestos Removal	Waste manifests; air monitoring	Per load; continuous	Licensed contractor
Site Restoration	Vegetation survival ≥80%	3, 6, 12 months	Contractor / PIU
Erosion Control	Silt fence condition	Weekly	Contractor
Groundwater Quality	pH, TDS, coliforms, heavy metals	Quarterly (1 year)	Contractor / PIU
Community Satisfaction	≥80% satisfied	Post-decommissioning	PIU / IESM

8.22 Institutional Responsibilities

Entity	**Responsibilities**
PIU	Oversight; compliance; reporting; community liaison
Contractor	Safe demolition; asbestos abatement; waste management; restoration
Licensed Asbestos Contractor	Survey; abatement; air monitoring; disposal
Facility Operator	Handover; equipment salvage; record retention
LASEPA / FMEnv	Permits; inspections; compliance enforcement
AfDB	Review and approval; monitoring through PIU reports

8.23 FINANCIAL ASSURANCE

LSMoH will establish a Decommissioning Fund or Environmental Bond for the axis, reviewed every 5 years and adjusted for inflation, sized according to asbestos survey outcomes and site/creek-margin restoration scope at each of the three facilities.

8.24 Conclusion

The Decommissioning and Restoration Plan provides a complete, FMEnv-compliant framework for safely dismantling PHC facilities at the end of their operational life. It ensures:

- Safe removal of hazardous materials
- Environmentally sound demolition
- Restoration of ecological and community assets
- Protection of workers and communities
- Compliance with national and international standards

Together with the HMWMP, this plan ensures long-term environmental sustainability and public health protection for the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis.

CHAPTER 9 -- SITE-SPECIFIC GBV/SEA/SH ACTION PLAN

9.1 Introduction

Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH) are recognised risks in infrastructure projects, especially where construction activities, labour influx, and worker--community interactions occur. The African Development Bank (AfDB) requires Category 1 projects to implement a GBV/SEA/SH Action Plan to prevent, mitigate, and respond to these risks.

This GBV/SEA/SH Action Plan applies specifically to the four PHC facilities assessed in this ESIA:

- Agboju PHC (urban commercial-residential, high labour influx, market area, GBV hotspot)
- Oridilu PHC (urban residential/traditional, isolated paths, limited female staff)
- Bada PHC (peri-urban residential, limited female staff, poor lighting)
- Ogbomoshotedo PHC (urban mixed residential, limited female staff, poor lighting)

These sites exhibit medium to high GBV risk factors, including poor lighting, isolated footpaths, limited female staff, economic vulnerability, and labour influx during construction.

The Action Plan provides a survivor-centred, confidential, and enforceable framework for preventing and responding to GBV/SEA/SH across all project phases.

9.2 Legal And Policy Framework

The GBV/SEA/SH Action Plan aligns with:

Nigerian Laws

- VAPP Act (2015) -- prohibits rape, sexual assault, exploitation; provides survivor support
- Labour Act (2004) -- prohibits forced labour, child labour, discrimination
- Child Rights Act (2003) -- prohibits sexual activity with minors (<18 years)
- Criminal Code (2004) -- defines sexual offences and penalties
- Lagos State Domestic Violence Law (2007) -- provides protection orders and support services

International Standards

- AfDB OS2 -- requires GBV risk assessment, CoC, training, reporting, referral pathways
- IFC Good Practice Note on GBV/SEA/SH (2020)
- ILO Conventions 155 & 190 -- workplace violence prevention

- WHO/ILO Health Worker Safety Guidance (2020)
- UN Guiding Principles on Business & Human Rights
- WHO Clinical Management of Rape Guidelines (2024)

9.3 GBV/SEA/SH RISK Assessment

Key Site-Specific Risks

Site	Key GBV/SEA/SH Risks	Risk Level
Agboju	High labour influx, market area, substance abuse, limited female staff, 13 PAPs (displacement stress)	Medium--High
Oridilu	Isolated paths, poor lighting, industrial area, limited reporting	Medium
Bada	Peri-urban area, limited female staff, poor lighting	Medium
Ogbomoshotedo	Peri-urban area, limited female staff, poor lighting	Medium

High-Risk Scenarios

- Worker--community SEA (exchange of money/goods for sex)
- Worker--worker SH (quid-pro-quo harassment)
- GBV against vulnerable groups (girls, women with disabilities)
- Child sexual abuse (zero tolerance)
- Survivor reports but receives no response
- Community protest due to unaddressed GBV incidents
- Displacement-related stress and GBV (Agboju PAPs)

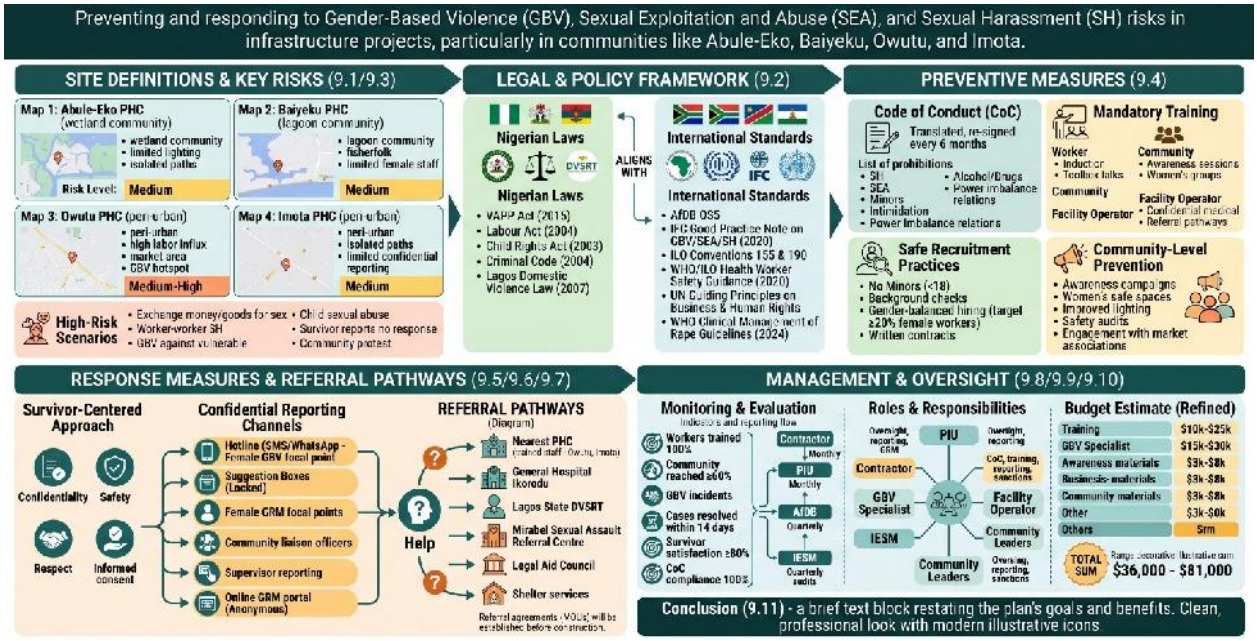


Figure 9.1: Specific GBV/SEA/SH Action Plan

9.4 Prevention Measures

9.4.1 Code of Conduct (CoC)

All workers, subcontractors, and security personnel at the four PHC sites must sign a **GBV/SEA/SH Code of Conduct** prohibiting:

- Sexual harassment
- Sexual exploitation or abuse
- Sexual activity with minors (<18 years)
- Intimidation, violence, or retaliation
- Alcohol/drug use on site
- Relationships with community members where power imbalance exists

The CoC is translated into Yoruba and Pidgin, displayed at all sites, and re-signed every 6 months.

9.4.2 Mandatory Training

Workers (Construction Phase)

- GBV/SEA/SH awareness (induction)
- Monthly toolbox talks
- Supervisor-specific training
- GRM focal point training

Community

- Quarterly GBV awareness sessions

- Women's group engagement
- Youth sessions
- Traditional/religious leader sensitisation

Facility Operators (Operational Phase)

- Recognising GBV survivors
- Confidential medical management
- Referral pathways

9.4.3 Safe Recruitment Practices

- No hiring of minors (<18 years)
- Background checks for security personnel
- Gender-balanced hiring (target: ≥20% female workers)
- Written contracts including CoC and GRM information

9.4.4 Community-Level Prevention

- Awareness campaigns (quarterly)
- Women's safe spaces at PHCs
- Improved lighting around PHCs (temporary solar lights if needed)
- Participatory safety audits with women and girls
- Engagement with market associations (Agboju, Oridilu)
- RAP-related community engagement (Agboju)

9.5 Response Measures

9.5.1 Survivor-Centred Approach

All responses must ensure:

- Confidentiality
- Safety
- Respect
- Non-discrimination
- No retaliation
- Informed consent
- Right to refuse services

9.5.2 Reporting Channels

Confidential reporting options available at all four sites:

Channel	Description	Confidential?

Hotline (SMS/WhatsApp)	Female GBV focal point	Yes
Suggestion boxes	Locked, opened only by GBV focal point	Yes
Female GRM focal points	Trained to receive GBV cases	Yes
Community liaison officers	Trusted community members	Yes
Supervisor reporting	Workers may report internally	Yes
Online GRM portal	Anonymous option	Yes

9.6 Referral Pathways

Survivors will be referred to:

- Nearest PHC with trained clinical staff (Agboju, Oridilu, Bada, Ogbomoshotedo)
- Ajeromi General Hospital & *LASUTH* (medical management, PEP, emergency contraception)
- Lagos State Domestic Violence Response Team (DVSRT)
- Mirabel Sexual Assault Referral Centre (Lagos)
- Legal Aid Council
- Shelter services (Lagos State Ministry of Women Affairs)

Referral agreements (MOUs) will be established before construction begins.

9.7 Sanctions for Violations

- Verbal warning
- Written warning
- Suspension
- Termination
- Legal prosecution (rape, sexual activity with minor, assault)

All sanctions apply equally to workers, subcontractors, and security personnel.

9.8 Monitoring & Evaluation

Key Indicators

- % workers trained (target: 100%)
- % community members reached (target: ≥60%)
- GBV incidents reported
- % cases resolved within 14 days
- Survivor satisfaction (≥80%)

- CoC compliance rate (100%)

Reporting

- Contractor → PIU: Monthly
- PIU → AfDB: Quarterly
- IESM → AfDB: Quarterly audits

9.9 Roles & Responsibilities

- PIU: Oversight, reporting, GRM management, coordination with service providers
- Contractor: CoC enforcement, training, reporting, sanctions
- GBV Specialist: Training, case management, referral coordination
- Facility Operator: Survivor medical management, confidentiality
- IESM: Independent verification
- Community Leaders: Awareness, safe spaces, referrals

9.10 Budget Estimate

Estimated cost for GBV/SEA/SH Action Plan across the four PHC sites:

PHC	**Personnel GBV Specialist**	**Training Materials**	**Reporting channel**	**Community Engagement**	**Monitoring and Reporting**	**Costs**
AGBOJU	3,000,000	2,000,000	1,000,000	2,000,000	1,000,000	9,000,000
Oridilu	3,000,000	2,000,000	1,000,000	2,000,000	1,000,000	9,000,000
Bada & Ogbomoshotedo	3,000,000	2,000,000	1,000,000	2,000,000	1,000,000	9,000,000
TOTAL COST	9,000,000	6,000,000	3,000,000	6,000,000	3,000,000	27,000,000

9.11 GBV/SEA/SH Summary Matrix

Colour Codes: ● Critical Risk □ Major Risk □ Moderate Risk □ Minor Risk ● Positive Impact

Table 9.1 -- GBV/SEA/SH Summary Matrix

Risk Category	**Site(s)**	**Unmitigated Risk**	**Mitigation / Action**	**Significance**	**Responsible**
Worker--Community SEA	Agboju, Oridilu, Bada, Ogbomoshotedo	Workers offering money/goods/jobs for sex	CoC (zero tolerance); induction + monthly	● Critical	Contractor / PIU / GBV Specialist

			training; confidential reporting; sanctions		
Worker--Worker SH	All sites	Quid-pro-quo harassment; unwelcome sexual comments	Supervisor training; CoC enforcement; disciplinary action	□ Major	Contractor / PIU
Child Sexual Abuse (<18 yrs)	All sites	Sexual activity with minors	CoC prohibition; background checks; community awareness; immediate referral	● Critical	Contractor / PIU / GBV Specialist
GBV Against Vulnerable Groups	Agboju, Oridilu, Bada, Ogbomoshotedo	Women/girls on isolated paths; poor lighting	Lighting improvements; safe spaces; community awareness	□ Major	PIU / Contractor / LGA
Lack of Confidential Reporting	All sites	Survivors fear retaliation; no safe channels	Hotline; suggestion boxes; female GRM focal points; anonymous reporting	● Critical	PIU / GBV Specialist
Economic Exploitation	Agboju, Oridilu	Women traders vulnerable to SEA	Women's groups engagement; livelihood support; CoC enforcement	□ Major	PIU / GBV Specialist

Substance Abuse Among Workers	Agboju, Ogbomoshote do	Alcohol/drug use → aggression, SEA	Zero-alcohol policy; enforcement; toolbox talks	Moderate	Contractor
Cultural Norms Supportin g GBV	Agboju, Oridilu, Bada, Ogbomoshote do	Acceptance of violence; silence around GBV	Community sensitisation; religious/traditio nal leader engagement	Major	PIU / GBV Specialist
Poor Police Response	All sites	Survivors discouraged from reporting	Referral pathway with DVSRT, Mirabel Centre; legal aid	Major	PIU / GBV Specialist
Survivor Reports but No Action	All sites	GRM fails to respond → re-traumatisatio n	GRM protocol (48-hr acknowledgeme nt, 14-day resolution); monitoring	● Critical	PIU / Contractor
Communit y Protest Due to GBV	Agboju, Ogbomoshote do	Unaddressed GBV → community anger	Transparent GRM; rapid response; sanctions; community liaison	● Critical	PIU / Contractor

Prevention Measures Summary

Measure	Description	Sites	Significance	Responsible
Code of Conduct (CoC)	Zero tolerance for GBV/SEA/SH; signed by all workers	All sites	● Critical	Contractor / PIU

Worker Training	Induction + monthly toolbox talks	All sites	□ Major	Contractor / GBV Specialist
Community Awareness	Quarterly sessions; women's groups; youth engagement	Agboju, Oridilu, Bada, Ogbomoshotedo	□ Major	PIU / GBV Specialist
Safe Recruitment	No minors; background checks; gender-balanced hiring	All sites	□ Moderate	Contractor
Improved Lighting	Solar lights around PHCs and paths	Agboju, Oridilu, Bada, Ogbomoshotedo	□ Major	Contractor / LGA
Safe Spaces for Women	Confidential rooms in PHCs; women's centres	All sites	□ Moderate	Facility Operator / PIU
Supervisor Training	SH prevention; CoC enforcement	All sites	□ Major	PIU / GBV Specialist

Response Measures Summary

Response Measure	Description	Significance	Responsible
Survivor-Centred Protocol	Confidentiality, safety, respect, no retaliation	● Critical	PIU / GBV Specialist
Reporting Channels	Hotline, suggestion boxes, female focal points	● Critical	PIU
Referral Pathway	Medical (PEP), psychosocial, legal, shelter	● Critical	PIU / GBV Specialist
Sanctions	Warning → suspension → termination → prosecution	● Critical	Contractor / PIU
GRM Monitoring	48-hr acknowledgement; 14-day resolution	□ Major	PIU
Incident Tracking	GBV logbook; anonymised reporting	□ Moderate	PIU / GBV Specialist

Monitoring Indicators Summary

Indicator	Target	Frequency	Responsible
% workers trained	100%	Monthly	Contractor
% community members reached	≥60%	Quarterly	PIU
# GBV incidents reported	Track	Monthly	PIU
% cases resolved ≤14 days	≥90%	Monthly	PIU
CoC compliance	100%	Monthly	Contractor
Survivor satisfaction	≥80%	Quarterly	GBV Specialist

9.12 Stakeholder Engagement, Consultation & Engagement Plan

9.12.1 Engagement Overview

Stakeholder engagement is a core ESIA requirement ensuring that Project-Affected Persons (PAPs), community members, government agencies, and other stakeholders are informed, consulted, and able to participate meaningfully in project planning and decision-making. Engagement for the four PHC sites followed the principles of transparency, inclusiveness, cultural appropriateness, gender sensitivity, and free, prior, and informed participation.

All consultations were conducted in Yoruba, Pidgin English, and English, ensuring inclusiveness across all demographic groups.

9.12.2 Stakeholder Identification

A. Primary Stakeholders (Directly Affected)

Stakeholder Category	Specific Groups
Community Residents	Households within 0--500 m of each PHC
Women's Groups	Market women, traders, artisans
Youth Groups	Local youth associations
Persons with Disabilities	Community members with disabilities
Traditional Leaders	Obas, Baales
Religious Leaders	Pastors, Imams

PAPs	Agboju (*13* shop owners, *[0]* farmers, *[0]* informal settlers)
PHC Staff	Existing facility staff

B. Secondary Stakeholders (Indirectly Affected)

Stakeholder Category	Specific Entities
Government	Amuwo-Odofin LGA, Ajeromi Ifelodun LGA, Alimosho LGA & LCDA officials, LSMoH, LASEPA, LAWMA, NESREA, FMEnv
Security	Police, NSCDC
Civil Society	CSOs, Women Affairs & Poverty Alleviation (WAPA)
GBV Service Providers	DVSRT, Mirabel Centre

9.12.3 Consultation Activities

Consultations were conducted between 24–27 February 2026 across all four PHC sites.

Activity	Description	Sites Covered
Community Entry Meetings	Introductory meetings with community leaders	All sites
Focus Group Discussions (FGDs)	Women, youth, traders, artisans	All sites
Key Informant Interviews (KIIs)	Traditional leaders, PHC staff, LGA officials	All sites
Site Walkthroughs	Environmental and social assessments	All sites
GBV/SEA/SH Screening	Risk identification sessions	All sites
Ecosystem Consultations	Wetland and lagoon assessments	Agboju, Oridilu

RAP Consultations	PAP identification and engagement	Agboju

9.12.4 Summary of Issues Raised

Site	Key Concerns Raised	Project Response
Agboju PHC	Resettlement concerns 13 PAPs); wetland disturbance; market access disruption; need for lighting, local hiring	Full RAP implementation; 50 m buffer; biodiversity offset; maintain market access; solar lighting; ≥50% local hiring
Oridilu PHC	Lagoon pollution; livelihood protection; traffic management; GBV reporting channels	Sediment traps; spill prevention; livelihood restoration; TMP; confidential GRM
Bada PHC	Asbestos-suspected roofing; safe demolition; lighting, security; employment	Licensed asbestos abatement; safety protocols; solar lighting; local hiring
Ogbomoshotedo PHC	Asbestos-suspected roofing; safe demolition; lighting, security; employment	Licensed asbestos abatement; safety protocols; solar lighting; local hiring

9.12.5 Stakeholder Engagement Plan (SEP)

A. Engagement Objectives

1. Ensure transparent communication throughout project lifecycle
2. Provide timely information on project activities
3. Address concerns related to environment, health, safety, GBV, and livelihoods
4. Strengthen trust between proponents and communities
5. Ensure meaningful participation of women, youth, and vulnerable groups
6. Maintain continuous feedback loops through GRM

B. Engagement Methods

Method	Description	Frequency	Responsible
Community Meetings	Town hall, PHC courtyard meetings	Quarterly	PIU / Contractor
Focus Group Discussions	Women, youth, traders, artisans	Quarterly	PIU / GBV Specialist
Key Informant Interviews	Traditional leaders, PHC staff, LGA officials	Bi-annual	PIU

Door-to-Door Sensitization	GBV, waste management, construction impacts	Monthly	Community Liaison Officer
Public Disclosure	Posters, flyers, radio announcements	As needed	PIU
GRM Channels	Hotline, suggestion boxes, female focal points	Continuous	PIU / Contractor
Environmental Disclosure	Air, noise, water results shared publicly	Quarterly	PIU / IESM
RAP Consultations	PAP engagement, compensation discussions	As needed	PIU / RAP Consultant

C. Engagement Schedule

Phase	**Activities**
Pre-Construction	ESIA disclosure; RAP consultations (Agboju); GBV referral pathway; asbestos notification; wetland/lagoon consultations
Construction	Weekly contractor-community briefings; monthly GBV toolbox talks; quarterly environmental disclosure; traffic updates
Operation	PHC community health forums; GBV awareness sessions; waste management sensitization; annual stakeholder reviews

D. Gender-Sensitive Engagement Measures

- Female GRM focal points at each PHC
- Women-only FGDs
- Engagement times adjusted to women's schedules
- Safe spaces for confidential reporting
- Inclusion of women leaders (market women, traders, artisans)

E. Vulnerable Groups Engagement

Group	**Engagement Approach**
Persons with disabilities	Home visits, accessible venues
Elderly women	Home visits, safe spaces
Widows	GBV-sensitive communication

Adolescent girls	Youth FGDs, safe spaces
Women in isolated communities	Home visits, community liaison

9.12.6 Grievance Redress Mechanism (GRM)

9.12.6.1 GRM Process Overview

The Grievance Redress Mechanism (GRM) is designed to provide an accessible, transparent, and timely process for receiving, processing, and resolving project-related complaints. The GRM is operational throughout the project lifecycle (pre-construction, construction, and operation) and is available to all project-affected persons, including community members, workers, and vulnerable groups.

9.12.6.2 GRM Entry Points

Channel	**Description**	**Accessibility**
Toll-Free Hotline	Dedicated phone number for verbal complaints	Available 24/7; accessible to illiterate persons
Suggestion Boxes	Locked boxes located at each facility site, community hall, and local market across Agboju, Oridilu, Bada, and Ogbomoshotedo	Anonymous; accessible to all
Female GRM Focal Points	Designated female staff to receive GBV/SEA/SH complaints	Confidential; survivor-centred
Community Liaison Officers (CLOs)	Site-based officers who receive complaints directly	Daily presence at sites
Anonymous Reporting	Online portal and written submissions	Confidential; protects complainants
Supervisor Reporting	Workers can report grievances directly to supervisors	Worker-friendly

9.12.6.3 GRM Process Timeline and Responsibilities

Step	**Action**	**Timeline**	**Responsible**	**Outcome**
1. Receipt & Logging	Complaint received via any entry point; logged into central	Day 1	CLO / GRM Focal Point	Complaint documented and tracked

	GRM register with unique ID			
2. Acknowledgment	Complainant formally acknowledged via SMS, phone call, or written note	Within 48 hours	GRM Focal Point	Complainant informed of process
3. Screening & Categorisation	Complaint screened for urgency, sensitivity (GBV cases prioritised and handled confidentially), and complexity	Days 2–3	PIU GRM Focal Point / GBV Specialist	Complaint categorised (low, medium, high)
4. Investigation	PIU and Contractor investigate; site visits and stakeholder interviews conducted	Days 3–10	Contractor / PIU / CLO	Facts established
5. Resolution & Feedback	Proposed resolution communicated to complainant; if accepted, mitigation action implemented	Within 14 days	PIU / Contractor	Case closed; complainant satisfied
6. Appeal	If unresolved, complainant appeals to Amuwo Odofin LGA Liaison Committee	Days 15–21	LGA Liaison Committee	Case escalated
7. Final Appeal	If still unresolved, escalated to LSMoH / AfDB Independent Recourse Mechanism	Beyond 21 days	LSMoH / AfDB	Final determination

9.12.6.4 GRM Tiered System

Below is the GRM tiered system adapted for the Amuwo Odofin axis:

Tier	Level	Responsible	Function
Tier 1	Facility / Community Level (Agboju, Oridilu, Bada, Ogbomoshotedo)	CLOs, GRM Focal Points, Traditional Leaders	Receipt, acknowledgment, initial resolution (Level 1 grievances)
Tier 2	LGA Liaison Level	Amuwo Odofin Local Government Area Environmental Health Officer	Escalation and mediation (unresolved Tier 1 grievances)
Tier 3	PIU Level	PIU GRM Focal Point / Safeguards Team	Investigation, resolution, escalation to regulators
Tier 4	Regulatory / Financier Level	FMEnv, LASEPA, AfDB	Final appeal and independent recourse

9.12.7 GRM Cost Estimate

Cost Item	Description	Estimated Cost (US$)
Hotline Setup & Maintenance	Toll-free line; monthly operational costs	**1,500**
Suggestion Boxes	Supply, installation, and regular collection	**500**
GRM Focal Point Stipends	Stipends for female GRM focal points and CLOs	**2,000**
Registers & Documentation	GRM registers, forms, and reporting templates	**500**
Training	GRM training for CLOs, focal points, and PIU staff	**500**
TOTAL		**5,000**

*The GRM operational cost over the construction lifecycle is budgeted at **$5,000 USD**, which is included in the overall ESMP budget (Section 7.10).*

9.12.8 Contact List (Verified)

Name	Role / Group	Phone
Ojeguusi Adewale M.	CDA Chairman, Agboju	*08033283233*

Kareem Rafiu	Baale of Agboju	*08089131672*
Taiwo Runmouken	Women's Leader, Agboju	*08028290177*
Jubril Rasheed. O	Youth Leader, Agboju	*08080554060*
Saadu Babatunde	Baale of Oridilu	*08117291056*
Mrs Kafayat Adiu	Women's Group, Oridilu	*07016366645*
Chief Yusuf Idris	Baale of Bada	*07088773401*
Lawal Titilayo	Women's Group, Bada	*08037200739*
Lateef Monsuru	Baale of Ogbomoshotedo	*08025822706*
Badmus Mariam	Women's Group, Ogbomoshotedo	*07061624842*
Ibrahim Muhammed	LGA Health Officer, Amuwo-Odofin	*09060407782*
Olaniyi David .B.	LGA Health Officer, Ajeromi Ifelodun	*07037703279*
Ibitoye Hanah	LGA Health Officer, Alimosho	*08035209602*
Alabi Ajoke Oyeyemi	LASEPA Environmental Analyst	*08056134515*

9.13 Conclusion

The GBV/SEA/SH Action Plan provides a comprehensive, survivor-centred framework tailored to the four PHC sites in the Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis. With strong prevention, confidential reporting, trained personnel, and clear referral pathways, the project will meet AfDB ISS requirements and protect women, girls, workers, and vulnerable groups throughout all project phases.

CHAPTER 10 -- CONCLUSION AND RECOMMENDATIONS

10.1 Introduction

This chapter synthesises the findings of the ESIA for the four Group 1 Axis primary healthcare facilities (Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs) across baseline conditions, impact assessment, mitigation measures, the ESMP, the HMWMP/Decommissioning Plan, and the GBV/SEA/SH Action Plan, demonstrating compliance with the AfDB ISS (OS1–OS10), FMEnv EIA Act, NESREA, LASEPA/LAWMA, IFC PS, WHO, ILO, and Equator Principles IV. This ESIA covers only the four PHC facilities in the Group 1 Axis; separate standalone ESIA reports exist for the LSHIP's other project axes.

10.2 Summary of Key Findings

- **Environmental and Social Context:** The axis occupies a densely populated urban, peri-urban, and drainage-adjacent transition zone within Lagos State; Oridilu and Bada sit in high-moisture, flood-prone zones with asbestos-suspected roofing; Agboju and Ogbomoshotedo carry aged infrastructure likely containing hazardous materials; GBV/SEA/SH risk is Medium-High at Agboju and Ogbomoshotedo, and Medium at Oridilu and Bada; climate risks include localized urban flooding and intense storm runoff.
- **Key Adverse Impacts (Unmitigated):**
    - **Critical:** Asbestos exposure risk pending survey (all 4 sites); urban drainage and storm-runoff discharge risks; GBV/SEA/SH; flooding of active construction areas.
    - **Major:** High urban traffic disruption; Occupational Health and Safety (OHS) risks across all sites; localized water quality/erosion risks; disruption to adjacent trading and local micro-commerce.
    - **Moderate:** Construction dust, ambient noise, demolition waste, general transport and logistics effects.
- **Key Positive Impacts:** Improved healthcare access for approximately 200,000 urban and peri-urban residents; reduced maternal and under-five mortality; local employment opportunities prioritising surrounding urban communities; solar power adoption reducing greenhouse gas (GHG) emissions; strengthened pandemic and health emergency resilience.

10.3 Summary of Mitigation Measures

- **ESMP (Chapter 7):** Air, urban drainage water quality, waste, OHS, GRM, and environmental monitoring across all 4 sites.
- **HMWMP (Chapter 8, Part A):** WHO/AfDB colour coding, non-burn treatment, LAWMA disposal, and zero unpermitted discharge to local storm drains or watercourses.
- **Decommissioning Plan (Chapter 8, Part B):** End-of-life framework with perimeter-drainage and site restoration.
- **GBV/SEA/SH Action Plan (Chapter 9):** Code of Conduct (CoC), mandatory training, confidential reporting channels, and the axis's established referral pathway.
- **Asbestos Management Plan:** Pre-construction survey at all 4 sites, licensed abatement if confirmed, and continuous air monitoring.
- **RAP / Livelihood Mitigation:** Full replacement cost compensation and livelihood support before any civil works commence.
- **Traffic Management Plan:** Managed transport, signage, and access controls along major urban corridors serving Agboju and Ogbomoshotedo.
- **OHS Plan:** Comprehensive PPE mandates, daily toolbox talks, and mandatory medical surveillance.

10.4 Recommendations

Pre-Construction Phase

- Conduct pre-construction asbestos surveys at all four sites (Oridilu roofing flagged; Agboju, Bada, and Ogbomoshotedo aged structures); implement licensed abatement if confirmed.
- Establish GBV referral pathways and formal MOUs (medical, psychosocial, legal, and protection services); recruit the designated GBV Specialist; activate confidential reporting channels.
- Implement climate-resilient and flood-resistant design features (elevated platform at Agboju and Ogbomoshotedo; oversized perimeter drainage; elevated electricals across all 4 sites).
- Obtain all statutory regulatory permits (LASEPA environmental approvals, LAWMA waste permits, and local physical planning/building approvals).
- Finalise site-specific urban drainage and sediment-control designs.
- Train contractors, site engineers, and PIU staff on AfDB ISS and ESMP compliance requirements.

Construction Phase

- Enforce the Contractor Environmental and Social Management Plan (CESMP): dust suppression (priority at Agboju and Ogbomoshotedo), noise limits, erosion control, and hazardous spill prevention.
- Implement the GBV Action Plan: signed Codes of Conduct, routine worker training, strict reporting mechanisms, and disciplinary sanctions.
- Ensure local-hiring targets are met to minimise community friction and labour-influx pressures.
- Conduct rigorous environmental compliance monitoring (ambient air, noise, drainage water quality, and waste tracking).
- Maintain a functional Grievance Redress Mechanism (GRM): 48-hour acknowledgement target and 14-day resolution window.
- Implement site-specific Traffic Management Plans along congested urban transit corridors.
- Conduct quarterly Independent Environmental and Social Monitoring (IESM) audits and promptly implement required corrective actions.

Operational Phase

- Implement the HMWMP: rigorous waste segregation, non-burn treatment, LAWMA collection protocols, and zero discharge to local watercourses.
- Apply WHO Infection Prevention and Control (IPC) standards: hand hygiene protocols, sterilisation procedures, appropriate PPE utilization, and sanitation management.
- Maintain climate-resilient infrastructure: solar power systems, drainage networks, and structural platform integrity.
- Continue GBV prevention awareness and response protocols: ongoing staff training and confidential reporting.
- Maintain the GRM for patients, facility staff, and community members.
- Desludge septic and wastewater tanks every 2–3 years.
- Prioritize clean solar power generation to minimize operational GHG emissions.

Institutional Strengthening

- Strengthen PIU execution capacity with dedicated Environmental and Social Officers assigned to the axis.
- Review the ESMP annually and update based on ongoing environmental monitoring results.
- Ensure adequate ESMP budget allocation against the project financial estimates.

- Maintain continuous capacity-building training programmes for contractors, facility operators, and surrounding communities.

10.5 Overall Conclusion

The ESIA concludes that Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs are environmentally and socially viable. All adverse impacts can be effectively mitigated through the implementation of the ESMP, HMWMP, Decommissioning Plan, GBV/SEA/SH Action Plan, and livelihood measures. The project fully aligns with the AfDB ISS, FMEnv regulations, IFC Performance Standards, WHO standards, ILO conventions, and Equator Principles IV, and is recommended for formal approval by FMEnv, AfDB, and Lagos State authorities, subject to full ESMP implementation before commissioning, a functioning GRM and GBV referral pathway, and completed livelihood compensation prior to the commencement of civil works.

10.6 Final Statement

The Lagos State Health Infrastructure Project (LSHIP) Group 1 Axis will significantly improve public health outcomes, strengthen healthcare system resilience, and enhance environmental sustainability across urban and peri-urban communities in Lagos State. With robust mitigation measures, strong institutional oversight, and continuous community engagement, the project will deliver long-term socio-economic benefits while maintaining strict compliance with national and international environmental safeguards.

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APPENDICES

Appendix 1.1: Terms of Reference (AfDB)

1. Background

The Lagos State Health Infrastructure Project (LSHIP) is a US$200 million health system strengthening programme implemented by the Lagos State Ministry of Health (LSMoH) with financing from the African Development Bank (AfDB). The project involves upgrading, rehabilitating, and constructing 29 Primary Healthcare (PHC) facilities across Lagos State, clustered into eight geographic axes.

2. Objective of the Consultancy

The objective of this consultancy is to prepare a comprehensive Environmental and Social Impact Assessment (ESIA) for the Amuwo Odofin Axis Group 1 (Agboju, Oridilu, Bada, and Ogbomoshotedo PHCs) in accordance with the AfDB Integrated Safeguards System (ISS, 2023/2024), FMEnv EIA Act CAP E12 LFN 2004, and international good practice standards.

3. Scope of Work

- Conduct baseline environmental and social studies
- Identify and assess potential environmental and social impacts
- Develop mitigation measures and management plans
- Prepare ESMP, HMWMP, GBV/SEA/SH Action Plan, and other safeguard instruments
- Conduct stakeholder engagement and establish GRM
- Prepare Resettlement Action Plan (RAP) where applicable
- Ensure compliance with AfDB Operational Safeguards OS1-OS10

4. Deliverables

- Inception Report
- Draft ESIA Report
- Final ESIA Report
- ESMP and all associated management plans
- Non-Technical Summary (English and Yoruba)

5. Timeline

The consultancy is to be completed within 12 weeks from the date of commencement.

Appendix 1.2: Project Risk Categorization

Contents:

1. AfDB Category 1 Classification

The LSHIP is classified as Category 1 (High Risk) under the AfDB Integrated Safeguards System (ISS, 2023/2024) based on:

- Multi-site complexity (29 facilities across 8 axes)
- Involuntary resettlement at 6 sites (>200 PAPs)
- Environmentally sensitive sites (wetlands, mangroves, creek margins)
- Presence of hazardous materials (asbestos at 9 sites)
- Scale of construction activities
- Lack of dedicated E&S capacity within PIU

2. FMEnv Category I Classification

The project is classified as **Category I** under the EIA Act CAP E12 LFN 2004 based on:

- Scale of project (29 facilities)
- Sensitivity of receptors (coastal, riverine, wetland ecosystems)
- Magnitude of impacts (resettlement, asbestos, labour influx)
- Public interest
- Cumulative impacts

3. IFC Category A Classification

The project is classified as **Category A** under IFC Performance Standards based on:

- Significant environmental and social impacts
- Sensitive ecological receptors
- Involuntary resettlement
- Potential for significant adverse impacts on affected communities

4. Equator Principles IV Category A

The project is classified as **Category A** under EP4 requiring:

- Independent ESIA
- Climate risk assessment (TCFD-aligned)
- Human rights due diligence
- Independent monitoring (IESM)
- 120-day public disclosure period

5. Risk Screening Checklist

- ☑

Involuntary resettlement

- ☑

Hazardous materials (asbestos)

- ☑

Sensitive ecosystems (wetlands, mangroves, creeks)

- ☑

Labour influx

- ☑

GBV/SEA/SH risks

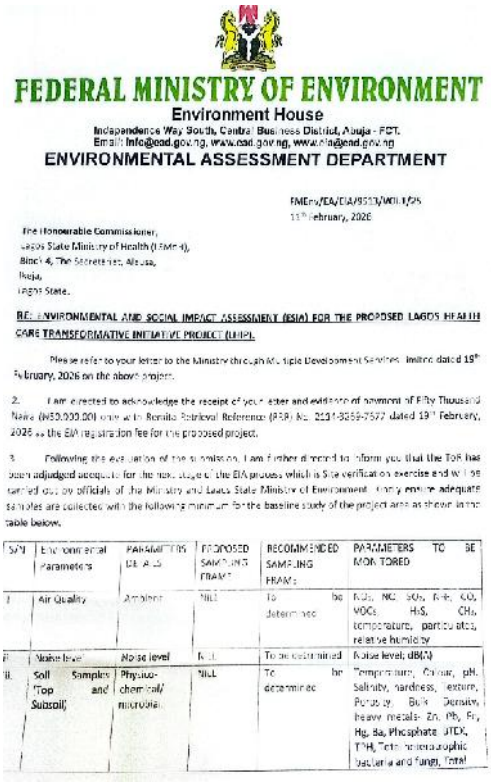
- ☑

Climate vulnerability

- ☑

Cumulative impacts

Appendix 1.3 FMEnv's statutory participation in the ESIA process



FEDERAL MINISTRY OF ENVIRONMENT
Environment House
Independence Way South, Central Business District, Abuja - FCT.
Email: info@ead.gov.ng, www.ead.gov.ng, www.eia@ead.gov.ng
ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9513/VOL1/25
11th February, 2026

The Honourable Commissioner,
Lagos State Ministry of Health (LSMoH),
Block 4, The Secretariat, Alausa,
Ikeja,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED LAGOS HEALTH CARE TRANSFORMATIVE INITIATIVE PROJECT (LHIP).

Please refer to your letter to the Ministry through Multiple Development Services Limited dated 19th February, 2026 on the above project.

2. I am directed to acknowledge the receipt of your letter and evidence of payment of Fifty Thousand Naira (₦50,000.00) only with Remita Retrieval Reference (RRR) No. 2551-3269-7577 dated 19th February, 2026 as the EIA registration fee for the proposed project.

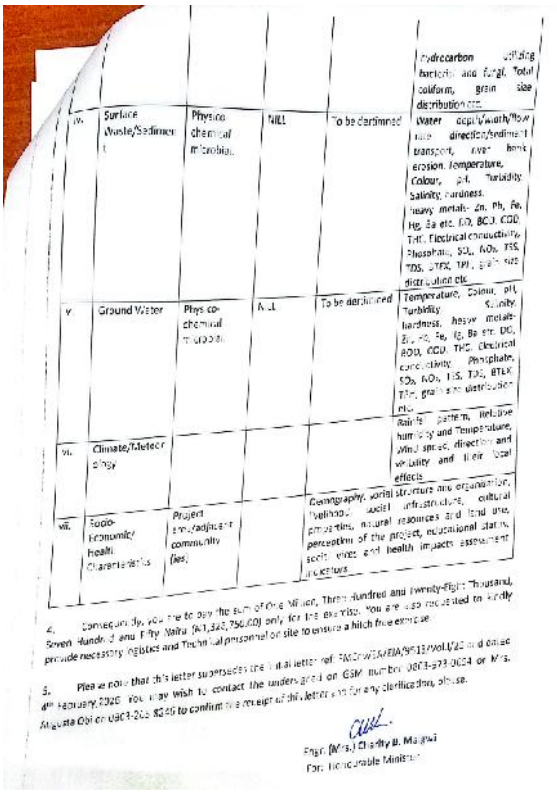
3. Following the evaluation of the submission, I am further directed to inform you that the TOR has been adjudged adequate for the next stage of the EIA process which is Site verification exercise and will be carried out by officials of the Ministry and Lagos State Ministry of Environment. Kindly ensure adequate samples are collected with the following minimum for the baseline study of the project area as shown in the table below.

S/N	Environmental Parameters	PARAMETERS DETAILS	PROPOSED SAMPLING FRAME	RECOMMENDED SAMPLING FRAME	PARAMETERS TO BE MONITORED
i.	Air Quality	Ambient	NILL	To be determined	NO_2, NO, SO_2, H_2S, CO, VOCs, H_2S, CH_4, temperature, particulates, relative humidity
ii.	Noise level	Noise level	N.A	To be determined	Noise level; dB(A)
ii.	Soil Samples (Top and Subsoil)	Physico-chemical/ microbial	NILL	To be determined	Temperature, Colour, pH, Salinity, Hardness, Texture, Porosity, Bulk Density, heavy metals- Zn, Pb, Fe, Hg, Ba, Phosphate, BTEX, TPH, Total heterotrophic bacteria and fungi, Total coliform, grain size distribution etc
iii.	Surface Waste/Sediment	Physico-chemical/ microbial	NILL	To be determined	Water depth/width/flow rate, direction/sediment transport, river bank erosion, temperature, Colour, pH, Turbidity, Salinity, Hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc, DO, BOD, COD, THC, Electrical conductivity, Phosphate, SO_4, NO_3, TSS, TDS, BTEX, TPH, grain size distribution etc
v.	Ground Water	Phys co-chemical microbial	N.A	To be determined	Temperature, Colour, pH, Turbidity, Salinity, Hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc, DO, BOD, COD, THC, Electrical conductivity, Phosphate, SO_4, NO_3, TSS, TDS, BTEX, THC, grain size distribution etc
vi.	Climate/Meteorology				Rainfall pattern, Relative humidity and Temperature, Wind speed, direction and variability and their local effects
vii.	Socio-Economic/ Health Characteristics	Project env./adjacent community (ies)			Demography, social structure and organization, livelihood, social infrastructure, cultural properties, natural resources and land use, perception of the project, educational status, socio vices and health impacts assessment indicators

4. Consequently, you are to pay the sum of One Million, Three Hundred and Twenty-Eight Thousand, Seven Hundred and Fifty Naira (₦1,328,750.00) only for the exercise. You are also requested to kindly provide necessary logistics and Technical personnel on site to ensure a hitch free exercise.

5. Please note that this letter supersedes the initial letter ref: FMEnv/EA/EIA/9513/VOL1/22 and dated 4th February, 2026. You may wish to contact the undersigned on GSM number 0803-973-0654 or Mrs. Augusta Obi on 0803-265-8245 to confirm the receipt of this letter and for any clarification, please.

Engr. (Mrs.) Charity B. Maigwi
For: Honourable Minister



hydrocarbon utilizing bacteria and fungi, Total coliform, grain size distribution etc

iv. Surface Waste/Sediment — Physico-chemical/ microbial — NILL — To be determined — Water depth/width/flow rate, direction/sediment transport, river bank erosion, temperature, Colour, pH, Turbidity, Salinity, Hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc, DO, BOD, COD, THC, Electrical conductivity, Phosphate, SO_4, NO_3, TSS, TDS, BTEX, TPH, grain size distribution etc

v. Ground Water — Phys co-chemical microbial — N.A — To be determined — Temperature, Colour, pH, Turbidity, Salinity, Hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc, DO, BOD, COD, THC, Electrical conductivity, Phosphate, SO_4, NO_3, TSS, TDS, BTEX, THC, grain size distribution etc

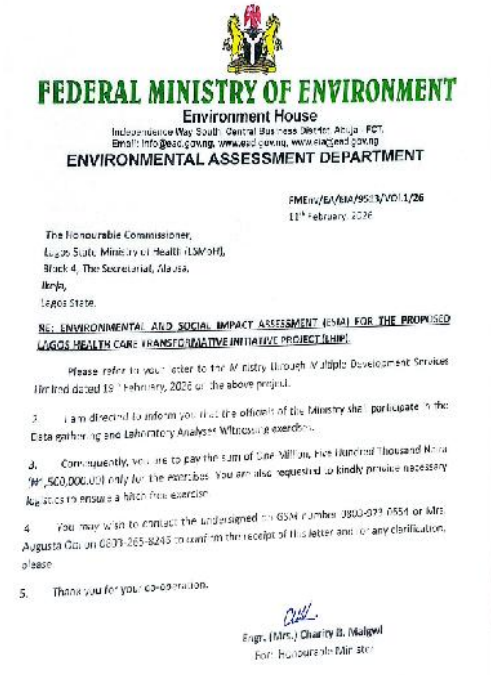
vi. Climate/Meteorology — Rainfall pattern, Relative humidity and Temperature, Wind speed, direction and variability and their local effects

vii. Socio-Economic/ Health Characteristics — Project env./adjacent community (ies) — Demography, social structure and organization, livelihood, social infrastructure, cultural properties, natural resources and land use, perception of the project, educational status, socio vices and health impacts assessment indicators

4. Consequently, you are to pay the sum of One Million, Three Hundred and Twenty-Eight Thousand, Seven Hundred and Fifty Naira (₦1,328,750.00) only for the exercise. You are also requested to kindly provide necessary logistics and Technical personnel on site to ensure a hitch free exercise.

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For: Honourable Minister



FEDERAL MINISTRY OF ENVIRONMENT
Environment House
Independence Way South, Central Business District, Abuja - FCT.
Email: info@ead.gov.ng, www.ead.gov.ng, www.eia@ead.gov.ng
ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9513/VOL1/26
11th February, 2026

The Honourable Commissioner,
Lagos State Ministry of Health (LSMoH),
Block 4, The Secretariat, Alausa,
Ikeja,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED LAGOS HEALTH CARE TRANSFORMATIVE INITIATIVE PROJECT (LHIP).

Please refer to your letter to the Ministry through Multiple Development Services Limited dated 19th February, 2026 on the above project.

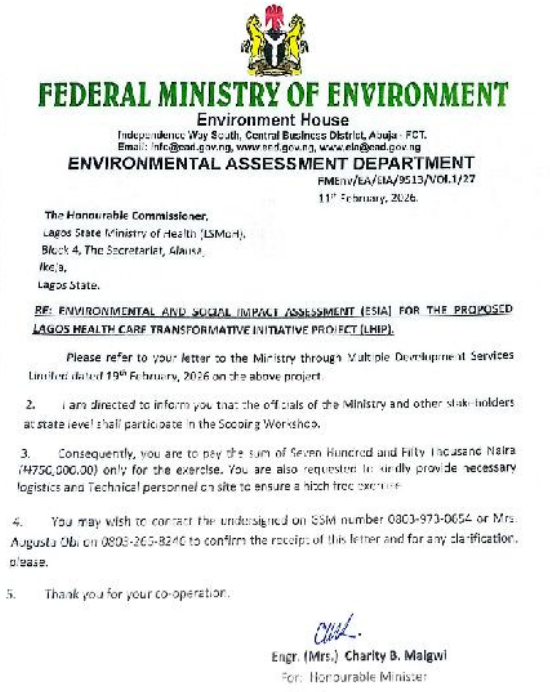
2. I am directed to inform you that the officials of the Ministry shall participate in the Data gathering and Laboratory Analyses Witnessing exercise.

3. Consequently, you are to pay the sum of One Million, Five Hundred Thousand Naira (₦1,500,000.00) only for the exercise. You are also requested to kindly provide necessary logistics to ensure a hitch free exercise.

4. You may wish to contact the undersigned on GSM number 0803-973-0654 or Mrs. Augusta Obi on 0803-265-8245 to confirm the receipt of this letter and for any clarification, please.

5. Thank you for your co-operation.

Engr. (Mrs.) Charity B. Maigwi
For: Honourable Minister



FEDERAL MINISTRY OF ENVIRONMENT
Environment House
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ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9513/VOL1/27
11th February, 2026.

The Honourable Commissioner,
Lagos State Ministry of Health (LSMoH),
Block 4, The Secretariat, Alausa,
Ikeja,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED LAGOS HEALTH CARE TRANSFORMATIVE INITIATIVE PROJECT (LHIP).

Please refer to your letter to the Ministry through Multiple Development Services Limited dated 19th February, 2026 on the above project.

2. I am directed to inform you that the officials of the Ministry and other stakeholders at state level shall participate in the Scoping Workshop.

3. Consequently, you are to pay the sum of Seven Hundred and Fifty Thousand Naira (₦750,000.00) only for the exercise. You are also requested to kindly provide necessary logistics and Technical personnel on site to ensure a hitch free exercise.

4. You may wish to contact the undersigned on GSM number 0803-973-0654 or Mrs. Augusta Obi on 0803-265-8245 to confirm the receipt of this letter and for any clarification, please.

5. Thank you for your co-operation.

Engr. (Mrs.) Charity B. Maigwi
For: Honourable Minister

Appendix 2: Proposed Project Sites

S/N	PHC Facilities	LGA	LCDA	Status	Coordinates	
Group 1						
1	Agboju PHC	Amuwo Odofin	Oriade LCDA	Construction	6.458077	3.283238
2	Oridilu PHC	Ajeromi Ifelodun	Ifelodun LCDA	Refurbishment	6.464410	3.351390
3	Bada PHC	Alimosho	Ayobo Ipaja LCDA	Refurbishment	6.590535	3.228266
4	Ogbomoshotedo PHC	Alimosho	Egbe Idimu LCDA	Refurbishment	6.575358	3.258728
Group 2						
1	Isolo PHC	Oshodi-Isolo	Isolo LCDA	Refurbishment	6.528600	3.320807
2	Oba Salami PHC	Lagos Mainland	Yaba LCDA	Refurbishment	6.522283	3.368430
3	Ojodu PHC	Ikeja	Ojodu LCDA	Construction	6.631394	3.342287
4	Otumara PHC	Lagos Mainland	Yaba LCDA	Construction	6.477588	3.374566
Group 3						
1	Omolaiye PHC	Ikorodu	Ikorodu North LCDA	Refurbishment	6.66839365	3.47307938
2	Eruwen PHC	Ikorodu	Ikorodu North LCDA	Construction	6.60440414	3.54358095
3	Olorunda PHC	Ikorodu	Ikorodu North LCDA	Construction	6.66833451	3.58520869
4	Agura PHC	Ikorodu	Ikorodu LGA	Construction	6.57996161	3.62752998

Group 4						
1	Imota PHC	Ikorodu	Imota LCDA	Refurbishment	6.66005734	3.66968297
2	Bayeiku PHC	Ikorodu	Igbogbo Bayeiku LCDA	Refurbishment	6.546943	3.543106
3	Abule Eko PHC	Ikorodu	Ijede LCDA	Refurbishment	6.58331880	3.59483036
4	Owutu PHC	Ikorodu	Ikorodu West LCDA	Construction	6.63301273	3.48131561
Cluster 5						
1	Agbowa PHC	Epe	Ikosi Ejirin LCDA	Construction	6.639779	3.712229
2	Ejirin PHC	Epe,	Ikosi Ejirin LCDA	Refurbishment	6.612939	3.897653
3	Solu Alade PHC	Ibeju Lekki	Ibeju Lekki LCDA	Refurbishment	6.43917	3.78986
4	Orimedu PHC	Ibeju Lekki	Ibeju Lekki LCDA	Construction	6.44066	3.90141
Group 6						
1	Magbon PHC	Ibeju Lekki	Lekki LCDA	Refurbishment	6.42880	3.99687
2	Idasho PHC	Ibeju Lekki	Lekki LCDA	Refurbishment	6.42940	3.98636
3	Idotun PHC	Ibeju Lekki	Lekki LCDA	Refurbishment	6.42451	4.2303
Group 7						
1	APA PHC	Badagry	Badagry West LCDA	Construction	6.430864	2.823958

2	Igbogbele PHC	Badagry	Badagry West LCDA	Refurbishment	6.423141	2.779165
3	Farasime PHC	Badagry	Badagry West LCDA	Refurbishment	6.425841	2.714320
Group 8						
1	Ibereko PHC	Badagry	Olorunda LCDA	Refurbishment	6.441703	2.919342
3	Agboyi PHC	Kosofe	Agboyi Ketu LCDA	Refurbishment	6.578345	3.409531

Appendix 2.2: Borrow Pit Management Plan (BPMP)

Contents:

1. Introduction

This Borrow Pit Management Plan (BPMP) provides procedures for the identification, assessment, operation, and rehabilitation of borrow pits used to source construction materials for the LSHIP Group 1 Axis.

2. Site Selection Criteria

- Minimum 500m distance from residential areas
- Minimum 100m distance from water bodies
- No borrow pits in wetlands or sensitive ecosystems
- Geotechnical suitability (sand/gravel quality)
- Access road availability
- Land ownership verification
- Community consent

3. Borrow Pit Assessment Checklist

- □

Geotechnical assessment completed

- □

Environmental screening conducted

- □

Community consultation held

- □

Land ownership verified

- □

Access road assessed

- □

Rehabilitation plan developed

4. Rehabilitation Plan

- Regrade slopes to stable angle (≤1:2)
- Apply topsoil (minimum 15cm)
- Revegetate with native species
- Restore drainage patterns
- Monitor for 12 months post-rehabilitation
- Success criteria: ≥80% vegetation cover

5. Monitoring Checklist

- Weekly: Slope stability, drainage, erosion
- Monthly: Water quality (if near water body)
- Quarterly: Vegetation cover (post-rehabilitation)
- Annually: Full compliance audit

6. Reporting Templates

- Borrow pit operation report (monthly)
- Borrow pit rehabilitation report (quarterly)
- Compliance closure report (final)

Appendix 2.3: LSHIIP Campsite Management Plan

1. Introduction

This Campsite Management Plan provides procedures for the establishment, operation, and closure of worker camps associated with the LSHIP where applicable.

2. Campsite Location Criteria

- Minimum 500m from residential areas
- Access to water and electricity
- Suitable drainage and terrain
- Community consent obtained
- No sensitive ecosystems

3. Site Layout Plans

- Accommodation area (tents/containers)
- Kitchen and dining area
- Sanitation facilities
- Waste management area
- First aid station
- Recreation area

4. Sanitation and Waste Management

- Adequate toilets (1 per 15 persons)
- Handwashing stations
- Solid waste collection bins
- Segregation of waste
- Regular collection and disposal

5. Camp Rules and Regulations

- No alcohol or drugs
- No visitors without permission
- Curfew hours (22:00-06:00)
- Respect for community norms
- Prohibition of GBV/SEA/SH
- Mandatory Code of Conduct signing

6. Community Liaison

- Regular community meetings
- Grievance reporting channels
- Local hiring preference (≥50%)

7. Camp Closure and Restoration

- Remove all structures
- Collect all waste
- Restore site to original condition
- Conduct community sign-off

Appendix 2.4: LSHIP Generic Labour Influx Management Plan (LIMP)

1. Introduction

This Labour Influx Management Plan (LIMP) provides procedures for managing the expected influx of construction workers to minimise negative social impacts and maximise local benefits, where applicable.

2. Labour Demand Forecast

Labour Category	Peak Number	Local Hiring Target
Skilled workers	30-50	≥30%
Semi-skilled	40-70	≥40%
Unskilled	80-120	≥50%
Management	5-10	≥30%

3. Local Hiring Strategy

- Community notification of job opportunities
- Registration of local workers
- Skills assessment
- Priority hiring from host communities
- Gender-balanced hiring (≥15% women)

4. Worker Conduct Rules

- Code of Conduct must be signed
- Prohibition of GBV/SEA/SH
- Respect for community norms
- No alcohol/drugs on site
- Reporting of incidents

5. Community Liaison Protocol

- Community Liaison Officer (CLO) appointed
- Regular community meetings
- Grievance reporting channels
- 48-hour grievance acknowledgement
- 14-day grievance resolution

6. Worker Registration Form

- Personal details
- Contact information

- Skills and experience
- LGA of residence
- Identification document copy
- Code of Conduct signed

7. Local Hiring Monitoring Template

- Number of workers hired (local vs non-local)
- Skills categories
- Gender breakdown
- Duration of employment
- Wages paid

Appendix 2.5: LSHIP Generic CASHES Plan

1. Introduction

The Community Affairs, Safety, Health, Environment and Security (CASHES) Plan provides a comprehensive framework for managing community relations, worker safety, public health, environmental protection, and site security during the LSHIP.

2. Community Affairs

- Community Liaison Officer (CLO) appointed
- Community entry protocols
- Regular community meetings (monthly)
- Grievance Redress Mechanism (GRM)
- Local content implementation
- Donations and community support

3. Safety

- Occupational Health and Safety (OHS) Plan
- PPE requirements
- Safety training and induction
- Emergency response procedures
- Incident reporting and investigation
- First aid stations

4. Health

- Medical waste management
- Sanitation and hygiene
- Water quality protection
- Noise and dust control
- Communicable disease prevention
- GBV/SEA/SH prevention and response

5. Environment

- ESMP implementation
- Air quality monitoring
- Water quality monitoring
- Waste management
- Erosion and sediment control
- Climate resilience

6. Security

- Site security assessment
- Security personnel deployment
- Access control
- Lighting and fencing
- Security incident reporting
- Coordination with local police

7. Incident Reporting Form

- Date and time of incident
- Type of incident (safety, health, environment, security)
- Location
- Description
- Immediate action taken
- Root cause analysis
- Corrective actions
- Signature

8. Community Complaint Form

- Complainant details
- Complaint description
- Date of complaint
- Action taken
- Resolution date
- Complainant satisfaction

Appendix 2.6: LSHIP Generic Supply Chain Risk Assessment

1. Introduction

This Supply Chain Risk Assessment identifies and evaluates environmental and social risks associated with the procurement of materials and services for the LSHIP.

2. Risk Assessment Methodology

- Risk identification (environmental, social, reputational)
- Risk rating (likelihood x severity)
- Mitigation measures
- Monitoring and reporting

3. Material Supply Risks

Material	Risk	Likelihood	Severity	Mitigation
Sand and Gravel	Habitat destruction	Medium	High	Licensed borrow pits; rehabilitation plan
Cement	Dust pollution	High	Medium	Enclosed storage; dust control
Steel	Supply chain labour risks	Medium	Medium	Supplier screening; Code of Conduct
Wood	Deforestation	Low	Medium	Certified suppliers; reforestation
Solar Panels	E-waste at end of life	Medium	Medium	Take-back agreement; recycling

4. Supplier Screening Criteria

- Environmental compliance
- Social compliance (labour, human rights)
- FMEnv/NESREA registration
- LASEPA registration
- Previous performance
- Supply chain transparency

5. Local Supplier Registration Form

- Business name
- Registration number
- Address and contact
- Products/services offered

- Years in business
- Staff size
- Women-owned (yes/no)

6. Procurement Preference Implementation Plan

- ≥50% local procurement target
- ≥20% women-owned business target
- Transparent procurement process
- Supplier capacity building

7. Monitoring Protocol

- Monthly procurement records review
- Quarterly supplier performance review
- Annual supply chain audit

Appendix 3: Typical Chain-of-Custody Forms (Refined & on-Ready)

BATO CHEMICAL LABORATORIES LTD	ISSUE NO: 001	
CHAIN OF CUSTODY SHEET	ISSUE DATE: May 2019	Last Review Date: March 18th 2025
	DOC. NO: BCL/QA/099	
	Version : 3	Next Review Date: March 2027
	Page 1 of 1	

NAME OF CLIENT:	Natural Eco Capital
P.O No	
Name of Project:	ESIA of LSHTIP
DATE:	April 1-9, 2026
TYPE OF SAMPLE:	GROUNDWATER SAMPLES
NATURE OF ANALYSIS:	PHYSIO-CHEM & MICROBIAL ANALYSIS

S/N	SAMPLE ID / LOCATION	Sampling Point Coordinates (GPS) -N	Sampling Point Coordinates (GPS) -E	Sampling Temperature (°C)
1.	Agboju PHC SP1	6.458077,	3.283238	
2.	Agboju PHC SP2	6.458147,	3.282824	
3.	Oridilu PHC SP1	6.464410,	3.351390	
4.	Oridilu PHC SP2	6.464234,	3.351147	
5.	Bada PHC SP1	6.590535,	3.228266	
6.	Bada PHC SP2	6.590434,	3.228280	
7.	Ogbomosotedo PHC SP1	6.575358,	3.258728	
8.	Ogbomosotedo PHC SP2	6.575578,	3.258614	
9.	Isolo PHC SP1	6.528600,	3.320794	
10.	Isolo PHC SP2	6.528855,	3.320839	
11.	Oba Salami PHC SP1	6.522283,	3.368430	
12.	Oba Salami PHC SP2	6.522136,	3.368640	
13.	Ojodu PHC SP1	6.631394,	3.342318	
14.	Ojodu PHC SP2	6.631077,	3.342094	
15.	Otumara PHC SP1	6.477588,	3.374566	
16.	Otumara PHC SP2	6.477751,	3.374845	
17.	Omolaiye PHC SP1	6.668394,	3.473079	
18.	Omolaiye PHC SP2	6.668900,	3.473180	
19.	Eruwen PHC SP1	6.604404,	3.543580	
20.	Eruwen PHC SP2	6.604160,	3.544082	
21.	Olorunda PHC SP1	6.668335,	3.585208	
22.	Olorunda PHC SP2	6.669100,	3.585910	
23.	Agura PHC SP1	6.579962,	3.627529	
24.	Agura PHC SP2	6.580100,	3.628170	
25.	Imota PHC SP1	6.660057,	3.669991	
26.	Imota PHC SP2	6.660400,	3.670510	
27.	Bayeiku PHC SP1	6.546943,	3.543106	
28.	Bayeiku PHC SP2	6.547100,	3.542888	
Comments:		Parameters includes: Appearance,True Colour (Hz),Odour,EC (µS/cm),Turbidity (NTU),pH,TDS (mg/L),Total Solids (mg/L),Total Hardness (mg/L) Total Alkalinity (mg/L),Total Acidity,Residual Chlorine,Free CO_2,Chloride (mg/L),Nitrate (mg/L),Sulphate (mg/L),Heavy Metals,DO,(mg/L),BOD (mg/L),COD (mg/L),Total Coliform (CFU/ml),E. coli (CFU/ml),Yeast/Mould,Total Plate Count		

BATO CHEMICAL LABORATORIES LTD	ISSUE NO: 001	
CHAIN OF CUSTODY SHEET	ISSUE DATE: May 2019	Last Review Date: March 18th 2025
	DOC. NO: BCL/QA/099	
	Version : 3	Next Review Date: March 2027
	Page 1 of 9	

NAME OF CLIENT:	Natural Eco Capital
P.O No	
Name of Project:	ESIA of LSHTIP
DATE:	April 1-9, 2026
TYPE OF SAMPLE:	SURFACE WATER SAMPLES
NATURE OF ANALYSIS:	PHYSIO-CHEM & MICROBIAL ANALYSIS

S/N	SAMPLE ID / LOCATION	Sampling Point Coordinates (GPS) -N	Sampling Point Coordinates (GPS) -E	Sampling Temperature (°C)
1.	Agboyi PHC SW SP1	6.578345	3.409531	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				

Comments:	Parameters includes: Appearance,True Colour (Hz),Odour,EC (µS/cm),Turbidity (NTU),pH,TDS (mg/L),Total Solids (mg/L),Total Hardness (mg/L) Total Alkalinity (mg/L),Total Acidity,Residual Chlorine,Free CO_2,Chloride (mg/L),Nitrate (mg/L),Sulphate (mg/L),Heavy Metals,DO,(mg/L),BOD (mg/L),COD (mg/L),Total Coliform (CFU/ml),E. coli (CFU/ml),Yeast/Mould,Total Plate Count

CLIENT'S REP

BATO CHEM LABORATORIES LTD

BATO CHEMICAL LABORATORIES LTD

Appendix 4: FMEnv-accredited laboratory



Accreditation No: 0004575

FEDERAL MINISTRY OF ENVIRONMENT

ACCREDITATION TO OPERATE AS ENVIRONMENTAL CONSULTANT

The Permanent Secretary of the Federal Ministry of Environment (FMENV), hereby accredits the bearer whose particulars appear below to operate as Environmental Consultant pursuant to an Application for Registration/Renewal dated 11TH day of FEBRUARY, 2022

1. Full Name of Consultant: BATO CHEMICAL LABORATORIES LIMITED
2. Location of Business Premises/Laboratory: LASHN OLAITAN AVENUE, RIVERVIEW ESTATE, ISHERI NORTH, OGUN STATE
3. Year of Incorporation of Business: 6TH FEBRUARY, 1998
4. Area(s) of Competence: ENVIRONMENTAL LABORATORY SERVICES

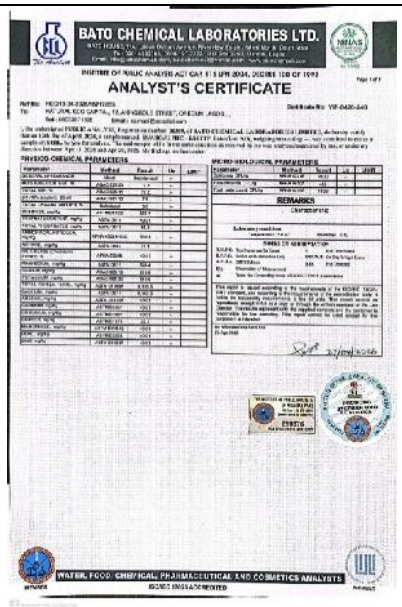
This Accreditation is granted subject to compliance with all regulations, Guidelines, Standards and Control criteria as may be issued by the Federal Ministry of Environment from time to time.

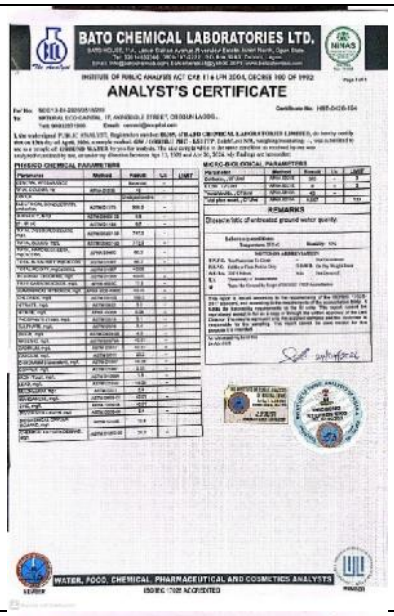
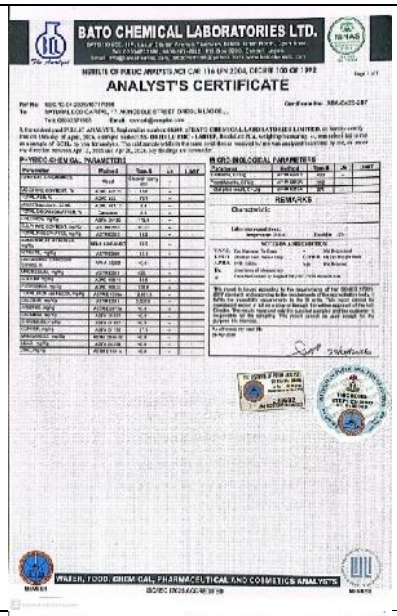
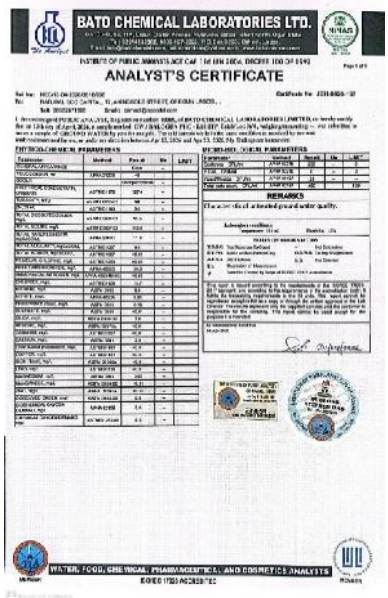
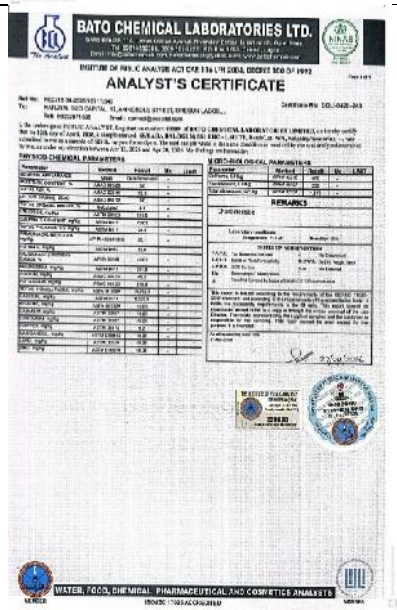
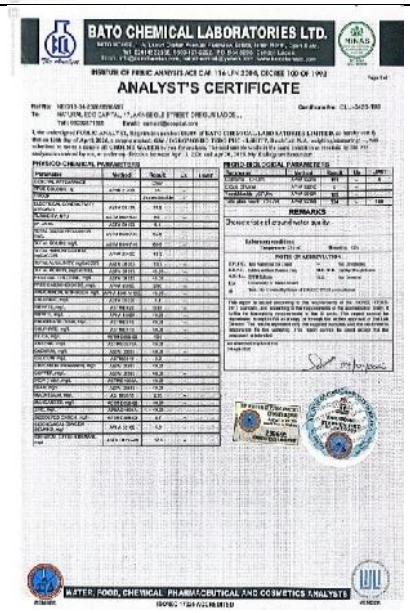
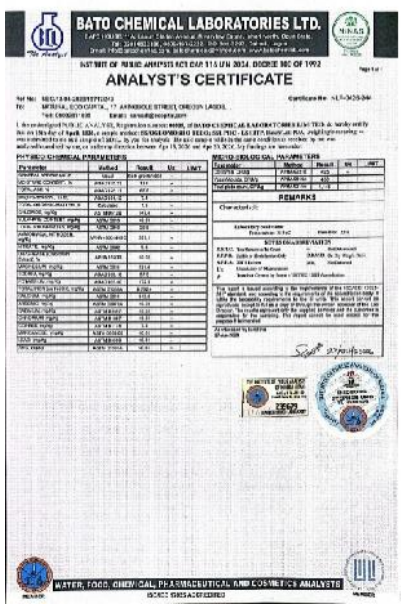
Date of Issue: 26TH JANUARY, 2022 Expiry Date: 25TH JANUARY, 2027

Seal of the Federal Ministry of Environment

FMENV shall not be liable to any claim(s) under this permit

Permanent Secretary

	Groundwater	Soil
Agboju PHC		

Oridilu PHC		
Bada-Balogun PHC		
Ogbomo shotedo PHC		

Appendix 5: Summary of Baseline Laboratory Results

Baseline environmental sampling for air quality, groundwater, soil, and ambient noise was conducted in accordance with FMEnv guidelines, NESREA standards, and AfDB ISS (2023/2024 OS1 and OS3). The methodology applied is summarised below.

1. Sampling Seasons

Sampling was conducted during the dry season, with meteorological conditions recorded. Wet-season sampling will be undertaken during implementation monitoring to ensure seasonal representation.

2. Air Quality Sampling

- Air quality parameters (PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, O_3, VOCs) were measured using calibrated Aeroqual/EVM-7 monitors.
- Each sampling event consisted of 8-hour integrated sampling.
- GPS coordinates were recorded for all sampling points.
- Calibration certificates are provided in Appendix 27C.

3. Groundwater Sampling

- Samples were collected from existing boreholes and wells using sterilized bailers.
- Parameters analyzed include pH, TDS, conductivity, turbidity, total coliforms, and heavy metals.
- Samples for heavy metal analysis were acidified with nitric acid (HNO_3) to pH < 2.
- Microbiological samples were stored at < 6°C and analyzed within 6 hours.

4. Soil Sampling

- Soil samples were collected at depths of 0–15 cm using stainless steel augers.
- Samples were air-dried, sieved (2 mm), and stored in sealed bags.
- Parameters analyzed include N, P, K, Ca, Mg, organic matter, pH, and heavy metals.

5. Ambient Noise Measurement

- Noise levels (Leq) were measured using calibrated Extech 407780 sound level meters.
- Measurements were taken during daytime (07:00–22:00) and night-time (22:00–07:00).
- Wind speed, background noise, and environmental conditions were recorded.

Soils Sampling

Surface soil was investigated through visual observation and sampling. Composite soil samples were obtained from three designated sampling points in each location of the project sites. Hand soil Auger of uniform cross section was used to ensure that

reproducible composite soil samples were collected from depths of 0-15cm and 15-30cm. This ensured high quality representative data collection.

Soil samples were collected in polythene bags that were then appropriately labeled and sealed.

Samples for microbiological analysis were collected in sterile McCarthey bottles and kept under 4^0C in a refrigerated container (cooler). Samples for physico-chemical analysis were air-dried in a dust-free environment while those for microbiological analysis were stored in ice-packed container in the field and later transferred to the refrigerator at 4^0C. Physico-chemical analysis of soil samples were carried out using the analytical methods recommended by FMENV.








Field Data collection

Water Quality and Hydro-biological Studies

In-situ measurements for pH, temperature, conductivity and dissolved oxygen were conducted with Pye Unicam meter on groundwater samples from a wells and borehole on the project site. For other physiochemical analysis, duplicate water samples were collected from the wells and borehole in 1-litre plastic containers, labeled and stored in an insulated refrigerated container and later analyzed in the laboratory according to Lind (1979) and APHA (1985).

All samples for laboratory analysis were transported from the project site to Bato Chemical Laboratories Limited for analysis within 24hours. The Laboratory is approved by the Federal Ministry of Environment, Abuja.

Microbiological Studies

Groundwater samples were collected from the well in the project site and were collected in 100ml plastic containers and kept in ice-cool container prior to culturing in the laboratory and sent for microbiological studies. The water was then analyzed for coliforms using the multiple tube fermentation technique in the Bato Chemical Laboratories Limited, EC broth was the

medium used and MPN Index was determined with MPN Table. The heterotrophic count was determined using the Plate Count Agar upon which aliquots of 0.5ml of serially diluted samples were plated.

Air Quality and Noise Level Studies

The air pollutants that are of greatest concern to the proposed project are Sulphur Oxides (SOx), Nitrogen Oxides (NOx), Particulate Matter (PM), Hydrocarbon (HC) gases, Volatile Organic Compounds (VOCs), Carbondioxide and Carbon Monoxide (CO). Air quality and noise level characteristics were monitored in three (3) points on the project site.

Chain of Custody Management

All samples collected on site were recorded in a field notebook or field log. Inventory of samples collected and all necessary information including parameters to analyse, type of sample, date of sampling, etc were recorded in the chain of custody form.

Quality Assurance/ Quality Control

In order to ensure the integrity of collected samples, the following measures were taken to avoid cross contamination, deterioration and pollution of samples from the point of collection on the site till the collation of the laboratory results.

- Ensuring that only experienced and qualified personnel are engaged in the study;
- Ensuring proper sampling in precleaned sampling containers and after sampling proper labelling by capturing sample ID, location and date.
- Carrying out field calibrations of equipment and running distilled water blanks to reduce errors that could arise from field measurements;
- Ensuring that replicate samples are collected and used as checks on measurements; Carrying out field analytical operations in a defined sequence to avoid cross contamination of instruments.
- Collected samples were submitted on time to an FMEnv approved laboratories, which are well equipped with latest sophisticated instruments and managed by well experienced professionals.

Analytical Methods

Samples collected from the field were analyzed in Bato Chemical Laboratories Limited. The methods presented in Table 4.1 were employed in the samples analyses**.** Also shown on the table are the equipment detection limits for the different parameters analyzed.

Table 4. 1: Sample analysis methods used

Parameters for Water	**Methods**
Temperature (^{O}C)	APHA 2110B
pH	APHA 4500H^{+}B
Turbidity (NTU)	APHA 2130B
Salinity (mg/l)	APHA 2520B
TSS (mg/l)	APHA 2540D
TDS (mg/l)	APHA 2510A
Conductivity (µS/cm)	APHA 2510A
THC (mg/l)	ASTM D3921
DO (mg/l)	APHA 4500-O G
BOD (mg/l)	APHA 5210A
COD (mg/l)	APHA 5220D
Reactive Silica (mg/l)	APHA 4500-SiO_2
Nitrate (mg/l)	EPA 352.1
Phosphate (mg/l)	APHA4500-P D
Ammonium (mg/l)	APHA 4500-NH_3
Calcium (mg/l)	APHA 3111B/ASTM D3561
Magnesium (mg/l)	APHA 3111B/ASTM D3561
Potassium (mg/l)	APHA 3111B/ASTM D3561
Sodium (mg/l)	APHA 3111B/ASTM D3561

4.2 DESCRIPTION OF BIO-GEOPHYSICAL ENVIRONMENT

4.2.1 Climate and Meteorology

Lagos is located at Latitude 6.4°N and Longitude 3.4°E lying on an average elevation of 15m asl, a tropical climate with distinct dry and wet seasons classified according to Köppen climate classification. Lagos has a short dry season between November and February with a lengthy wet season which runs from March through October. The climate of Lagos is predominantly

influenced by its situation adjacent to the Atlantic Ocean with susceptibility to prevailing maritime weather conditions.

The Lagos lagoon which also has huge hydrological effects on the regional climate is the largest of the three Lagoon systems occurring in the Lagos area, receiving over 80% of the land-derived run-offs laden with various types of wastes. It lies within longitudes 6°25" and 6°43" and latitudes 3°22" and 3°40". During the rainy season, the lagoon is fed by the numerous coastal rivers draining into it while during the dry season, the loss of water due to evaporation and the reduced amount of water from the rivers and creeks is compensated for by the underground seepage under the active sandy barrier formation and inflow of the tidal waters from the sea through the Lagos harbor and other lagoon outlets.

Climate Change Considerations and Flood Risk Implications
(Aligned with Nigeria Climate Change Act, 2021)

In accordance with the Nigeria Climate Change Act (2021), climate change is recognized as a cross-cutting risk with implications for environmental sustainability, infrastructure resilience, public safety, and socio-economic development. The Act mandates the integration of climate change adaptation and resilience measures into policies, plans, and development projects, particularly in climate-vulnerable regions such as coastal and low-lying states.

Lagos State is highly vulnerable to the impacts of climate change due to its:

- Low elevation and extensive coastal interface
- High population density and rapid urbanization
- Dependence on lagoon and coastal systems for drainage

Observed and projected climate trends for the region indicate:

- Increasing rainfall intensity and variability
- Rising sea levels and tidal influence
- Greater frequency of extreme rainfall and flood events

These changes exacerbate existing flood risks by overwhelming drainage infrastructure, increasing surface runoff, and promoting tidal backflow from lagoons and coastal waters. Flooding has direct implications for environmental quality, public health, housing, transportation networks, and economic activities, while also increasing the risk of secondary pollution from waste sites, septic systems, and contaminated floodwaters.

Consistent with the Nigeria Climate Change Act, development activities within Lagos State are therefore required to incorporate climate-responsive planning, including flood risk assessment, adaptive drainage design, and measures to enhance long-term environmental resilience.

Climate Variability and Flood Susceptibility in Low-Lying LGAs

Several Local Government Areas (LGAs) in Lagos State are inherently low-lying and flood-prone, making them particularly sensitive to climate variability and extreme weather events. Climate variability in these areas is expressed through erratic rainfall patterns, prolonged wet spells, and increased tidal influence during storm events.

Flood susceptibility in these LGAs is influenced by:

- Proximity to the Atlantic Ocean, lagoons, and river systems
- Reclaimed land and limited natural drainage gradients
- High levels of impervious surfaces due to urban development
- Encroachment on wetlands and floodplains

These conditions align with the Nigeria Climate Change Act's emphasis on identifying climate-vulnerable zones and prioritizing adaptation measures to reduce exposure and sensitivity to climate-induced hazards.

Table 3.1: Average Weather Trend for Lagos State (1985-2024)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Record High °C	37.0	39.0	36.0	35.0	34.0	33.0	31.0	30.0	31.0	36.0	33.0	37.0
Average High °C	33.17	32.49	32.34	32.36	31.62	29.77	28.27	27.84	28.69	31.62	30.16	32.96
Daily Mean °C	29.69	29.8	30.09	30.19	29.63	27.99	26.62	26.13	26.84	29.29	28.09	29.7
Average Low °C	25.61	26.65	27.34	27.47	27.11	25.75	24.57	24.01	24.6	26.52	25.59	25.9
Record Low °C	21.0	24.0	25.0	24.0	21.0	18.0	20.0	21.0	19.0	24.0	20.0	22.0
Average Precipitation mm (inches)	33.29	55.21	53.45	47.96	110.55	276.96	244.25	175.91	283.21	107.32	154.09	41.91
Average precipitation days (≥ 1.0 mm)	7.0	11.45	12.73	10.36	17.09	21.82	23.82	17.45	24.45	19.82	17.73	9.91
Average Relative Humidity (%)	67.91	73.9	74.84	74.35	75.67	78.74	81.06	81.83	81.63	76.51	79.05	68.71
Mean Monthly Sunshine Hours	11.17	10.82	10.83	11.05	10.78	9.96	9.03	8.75	9.45	10.69	10.45	10.84

Source: Nimet, Lagos Station, Ikeja

4.2.1.1 Rainfall

Lagos has 2 rainfall peaks in May and June, as shown in the table and charts and its Lagos experiences rainfall throughout the year. Data spanning 37 years (1986-2023) indicates June with the highest rainfall (283.21mm) and January with the lowest (typically a dry season month). The average rainfall over this period is 135.76mm, representing the expected pattern, as illustrated in Table 3.61 and Figure 3.113. Furthermore, 30 years of hourly weather model simulations and observed historical climate and weather data, confirm the period of the wet and dry season in the project areas.

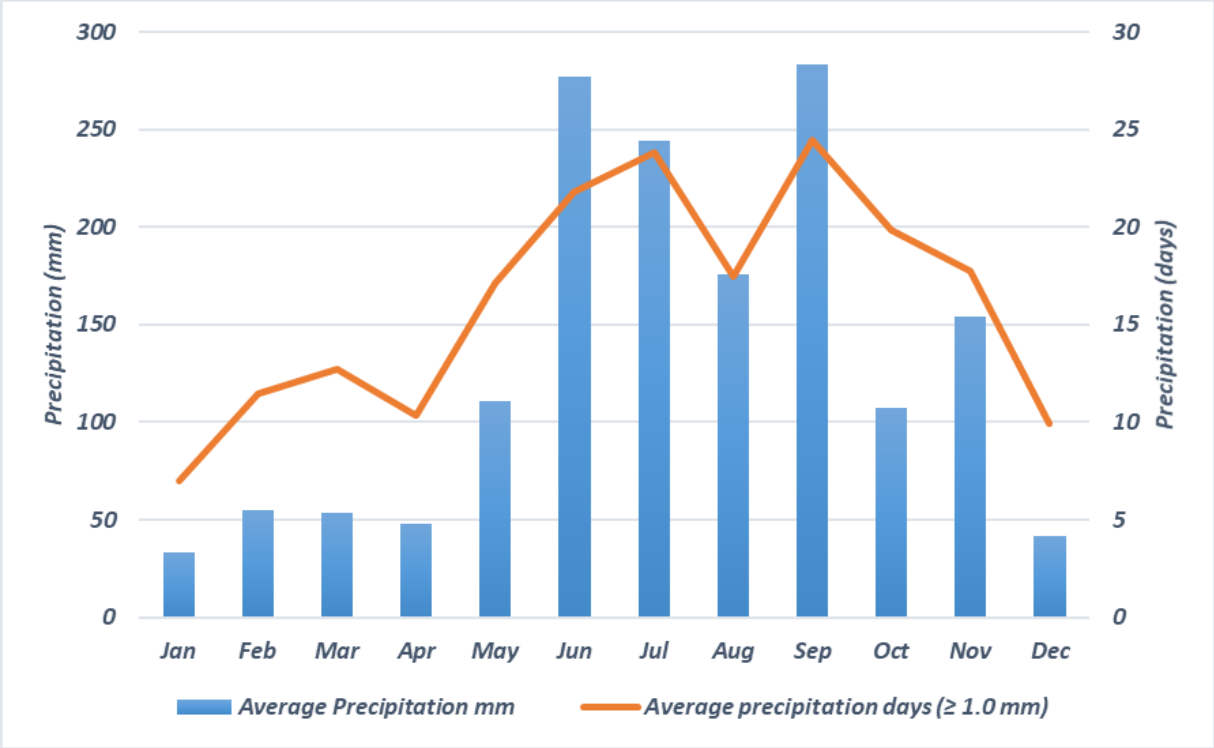


Figure 3.113: Rainfall Pattern in the Study Area

Source: Nimet

4.2.1.2 Temperature

Temperature is a dominant climate factor that varies from place to place over a period of time at given locations. The spatial distribution of temperature over the earth is influenced by; amount of

insulation received, nature of surface, distance from water bodies, relief, nature of the prevailing winds and ocean current.

Temperatures are usually high and vary little year-round which is typical of the equatorial belt. The data collected for a period of 37 years from 1985 to 2024 for Lagos State showed an average maximum temperature of 30.87°C and an average minimum temperature of 25.9°C. Figure 3.113 shows the average warmest temperature in Lagos is recorded in February and March, while the lowest is in June

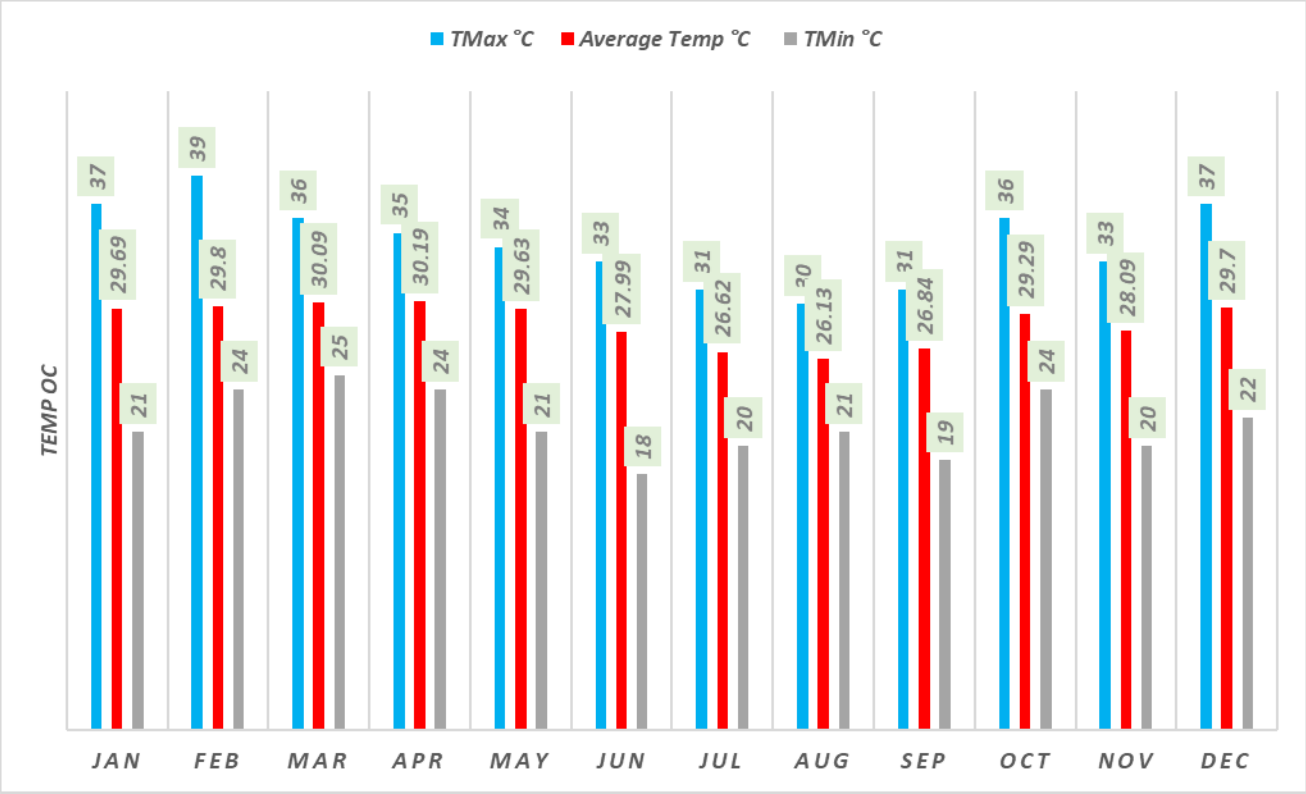


Figure 3.114: Average Temperature in the Study Area

Source: Nimet

4.2.1.3 Wind Speed and Direction

Surface wind speed is 0.5 – 7.7 m/s with an average of 3.6 m/s (Table 4.6) and prevailing southwest direction (Figure 3.3). The measured wind speed of 0.8 –1.7 m/s during the dry season fieldwork with northeast prevailing direction and 3.1 – 3.9 m/s with south-southwest prevailing direction in

the dry season (Figure 3.115) also agree with the climatic data with south-southwest prevailing direction in the wet season (Figure 3.115) also agree with the climatic data. If the air is calm, pollutants cannot disperse, and then the concentration of these pollutants will build up. On the other hand, when strong, turbulent winds blow, pollutants disperse quickly, resulting in lower pollutant concentrations. In pollution, meteorology calms are associated with inversions (temperature increasing with height). Inversion may result in fumigation; meaning that emissions are trapped at ground level close to their source as against other situations where it is dispersed and diluted much more easily. Inversion is widely known to be frequent during the early hours of the day. A 30-year mean macro data shows that wind speed over the study environment is generally minimal and this signifies a low to moderate dispersive potential of the local atmosphere.

Table 3.2: Monthly Wind Data of Lagos State (1988-2024)

YEAR	Speed / Direction	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1988	Speed	6.1	7.1	8.7	7.6	6.4	6	7.7	8.7	7.4	5.7	5.8	5.9
	Direction	N	W	S	S	W	W	W	W	W	W	S	W
1989	Speed	6	8	8.6	7.6	6.5	6.9	8	9.7	2.5	5.9	5.1	5.5
	Direction	N	W	S	W	S	S	SW	W	W	SW	S	SW
1990	Speed	5.9	8.2	8.5	8.6	7.1	6.5	8.4	10.3	8.2	5.4	5.5	5.1
	Direction	N	S	S	S	SW	SW	SW	SW	SW	S	S	W
1991	Speed	7.2	8.7	8.4	9	6.1	5.9	8.7	9.7	8	5.5	4.1	5
	Direction	N	S	S	SW	SW	S	W	W	W	W	W	SW
1992	Speed	4.4	8.7	9	9.8	6.8	7.7	9.8	10.5	7.6	5.7	5.9	5
	Direction	SW	SW	W	SW	SW	SW	W	W	SW	W	SW	SW
1993	Speed	5.6	6.9	9.3	8.1	6.4	5.9	5.1	6.7	4.8	4.2	3.9	3.8
	Direction	S	S	S	S	S	S	S	SW	S	S	NW	NW
1994	Speed	3.2	1.6	5.9	4.5	2.9	3.7	3.9	4.2	3.9	3.4	4.2	3.2
	Direction	NE	E	W	SW	SW	SW	SW	SW	SW	SW	W	NE
1995	Speed	2	2.9	3.2	3	2.8	2.9	3.2	3.4	3.3	3.1	2.9	2
	Direction	W	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	W

YEAR	Speed / Direction	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1996	Speed	2.5	3	3.3	3.4	2.8	2.6	5.9	3.3	4.8	3.2	2.8	2.5
	Direction	SW	S	SW	S	SW	SW	SW	SW	W	S	SW	SW
1997	Speed	2.6	3.4	3.6	3.2	3	2.8	2.9	3.7	3.1	2.5	2.4	2.6
	Direction	N	W	S	S	W	W	W	W	W	W	S	N
1998	Speed	3.1	2.9	3.3	3.7	3.3	3	3.1	2.7	3.1	2.2	2.5	3.1
	Direction	W	W	S	S	S	S	W	W	W	W	W	W
1999	Speed	2.4	3	3.5	3.4	2.8	3.2	3.1	3.3	3.2	2.8	2.5	2.4
	Direction	W	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	W
2000	Speed	2.4	3.5	3.8	3.6	2.3	2.6	3.9	4	2.7	2.8	1.9	1.6
	Direction	S	S	S	S	S	S	S	SW	S	S	NW	NW
2001	Speed	2.2	3.4	4.6	4.2	2.5	3.1	4.2	4.2	3.7	3.4	2.7	3.5
	Direction	N	W	S	S	W	W	W	W	W	W	S	W
2002	Speed	4.6	3.6	4.5	4.3	4	3.9	4.7	5.4	3.5	3.9	2.6	3.5
	Direction	W	W	S	S	S	S	W	W	W	W	W	SW
2003	Speed	4.2	5.3	6.3	5.9	4.3	5.2	4.2	5.4	5.8	4	3.6	3.8
	Direction	W	S	S	S	S	S	W	W	SW	S	S	SW
2004	Speed	4.5	5.5	5.7	5.3	4.9	4.8	5.8	5.5	5.3	4.5	3.9	3.9
	Direction	W	S	S	W	S	W	S	SW	W	SW	S	SW
2005	Speed	4.5	5.3	5.4	5.1	4.7	4.6	5.1	5	5.2	4.1	3.7	3.8
	Direction	S	W	W	S	S	S	W	S	SW	S	SW	W
2006	Speed	4.4	4.7	5.1	4.8	4.5	4	6.2	5.1	3.9	3.1	3.1	3.1
	Direction	S	S	S	S	S	SW	SW	S	S	S	W	W
2007	Speed	4.3	4.9	5	5.2	4.2	3.9	5.1	5.9	5.1	3.8	3.9	3.7
	Direction	S	S	S	S	S	S	S	SW	S	S	NW	NW
2008	Speed	4.6	4.3	5.6	5.6	4.1	6.8	6.1	5.2	7.5	5.6	3.5	5.1
	Direction	N	W	S	S	W	W	W	W	W	W	S	W
2009	Speed	6.1	4.2	7.8	7.6	6.3	5.9	7.1	7.3	6.3	5.8	5.3	5.8
	Direction	W	W	S	S	S	S	W	W	W	W	W	SW
2010	Speed	6.1	7.1	8.7	7.6	6.4	6	7.7	8.7	7.4	5.7	5.8	5.9

YEAR	Speed / Direction	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	Direction	W	S	S	S	S	S	W	W	SW	S	S	SW
2011	Speed	6	8	8.6	7.6	6.5	6.9	8	9.7	2.5	5.9	5.1	5.5
	Direction	W	S	S	W	S	W	S	SW	W	SW	S	SW
2012	Speed	6.1	7.1	8.7	7.6	6.4	6	7.7	8.7	7.4	5.7	5.8	5.9
	Direction	N	W	S	S	W	W	W	W	W	W	S	W
2013	Speed	6	8	8.6	7.6	6.5	6.9	8	9.7	2.5	5.9	5.1	5.5
	Direction	N	W	S	W	S	S	SW	W	W	SW	S	SW
2014	Speed	5.9	8.2	8.5	8.6	7.1	6.5	8.4	10.3	8.2	5.4	5.5	5.1
	Direction	N	S	S	S	SW	SW	SW	SW	SW	S	S	W
2015	Speed	7.2	8.7	8.4	9	6.1	5.9	8.7	9.7	8	5.5	4.1	5
	Direction	N	S	S	SW	SW	S	W	W	W	W	W	SW
2016	Speed	4.4	8.7	9	9.8	6.8	7.7	9.8	10.5	7.6	5.7	5.9	5
	Direction	SW	SW	W	SW	SW	SW	W	W	SW	W	SW	SW
2017	Speed	5.6	6.9	9.3	8.1	6.4	5.9	5.1	6.7	4.8	4.2	3.9	3.8
	Direction	S	S	S	S	S	SW	SW	S	S	S	W	W
2018	Speed	5.8	8	8.8	9.1	7.4	5.3	6.5	8.2	6.1	5.1	5.7	5
	Direction	S	S	S	S	S	S	S	SW	S	S	NW	NW
2019	Speed	5.5	6.4	7.1	6.7	5.7	6.1	5.9	5.9	5.9	5.8	5.7	4.7
	Direction	N	W	S	S	W	W	W	W	W	W	S	W
2020	Speed	5.1	4.8	5.2	5.5	4	0.4	6.1	9.5	4.2	3.1	1.2	5.1
	Direction	SW	S	SW	S	S	S	W	W	SW	SW	SW	S
2021	Speed	3.5	3.5	3.1	3.5	2.3	3.4	3.2	2.9	2.7	2.9	2.4	2.9
	Direction	W	W	SW	SW	SW	SW	SW	SW	SW	SW	W	S
2022	Speed	2.3	2.6	2.6	2.5	2.3	2.2	3	3.2	2.4	2.2	2.6	3.2
	Direction	N	E	W	SW	SW	SW	SW	SW	SW	SW	W	W

Source: NiMet

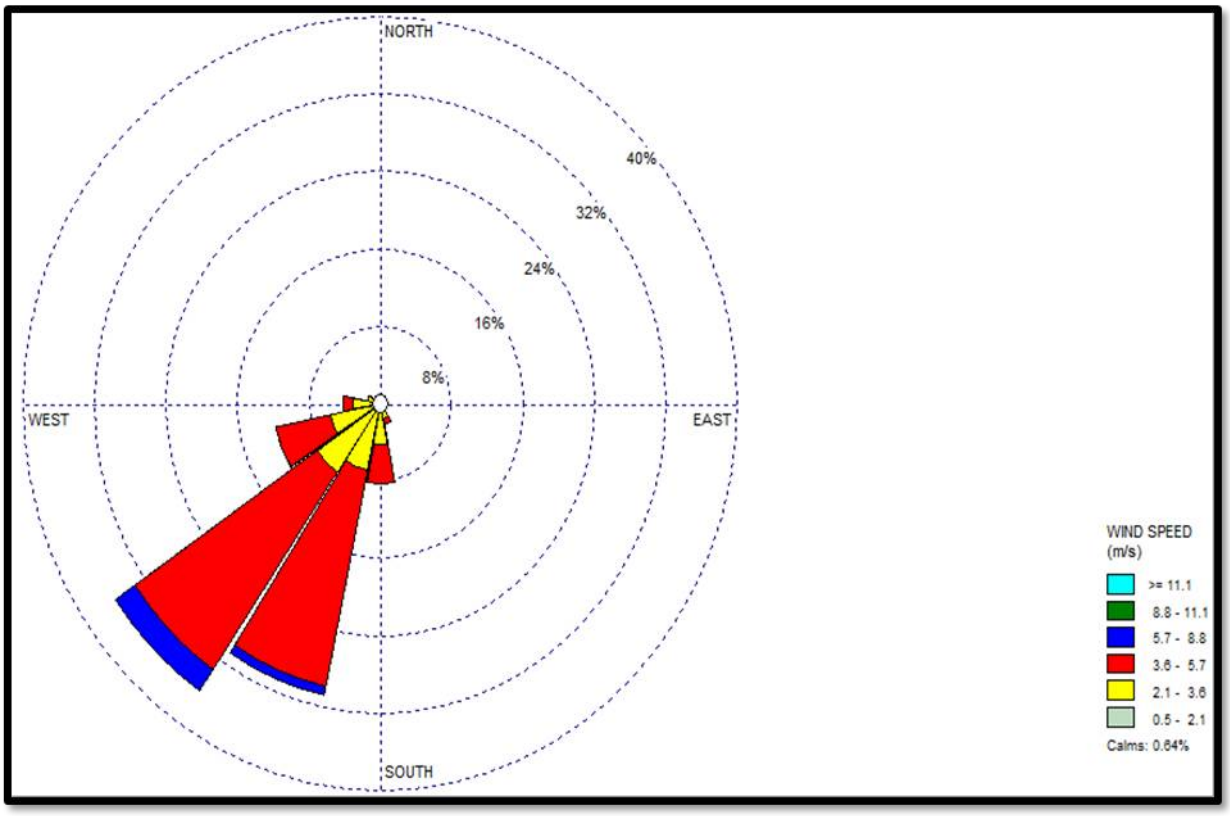


Figure 3.115: Prevailing Wind Direction in the Proposed Project Area

4.2.1.4 Relative Humidity

This is an indication of the water vapour content in the atmosphere. High relative humidity is indicative of moist conditions while low relative humidity suggests drier conditions. There is a marked diurnal variation in the relative humidity pattern of this area. It has an indirect relationship with temperature changes. The humidity is comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Relative humidity, linked to air temperature, influences cloud formation and precipitation types. A 37-year data span (1985-2024) shows average yearly humidity at 75.99%, varying from 67.1% in January to 81.83% in July Throughout 1985-2024, Lagos consistently maintains relative humidity above 60% monthly, irrespective of season. June and July peak at 81.01% and 81.83% respectively, correlating with the rainy season. High humidity, typical during the wet season, results from Lagos' location and near-constant rainfall. Peaks reach 81.63% from June to September, with January's low at 67.91%.

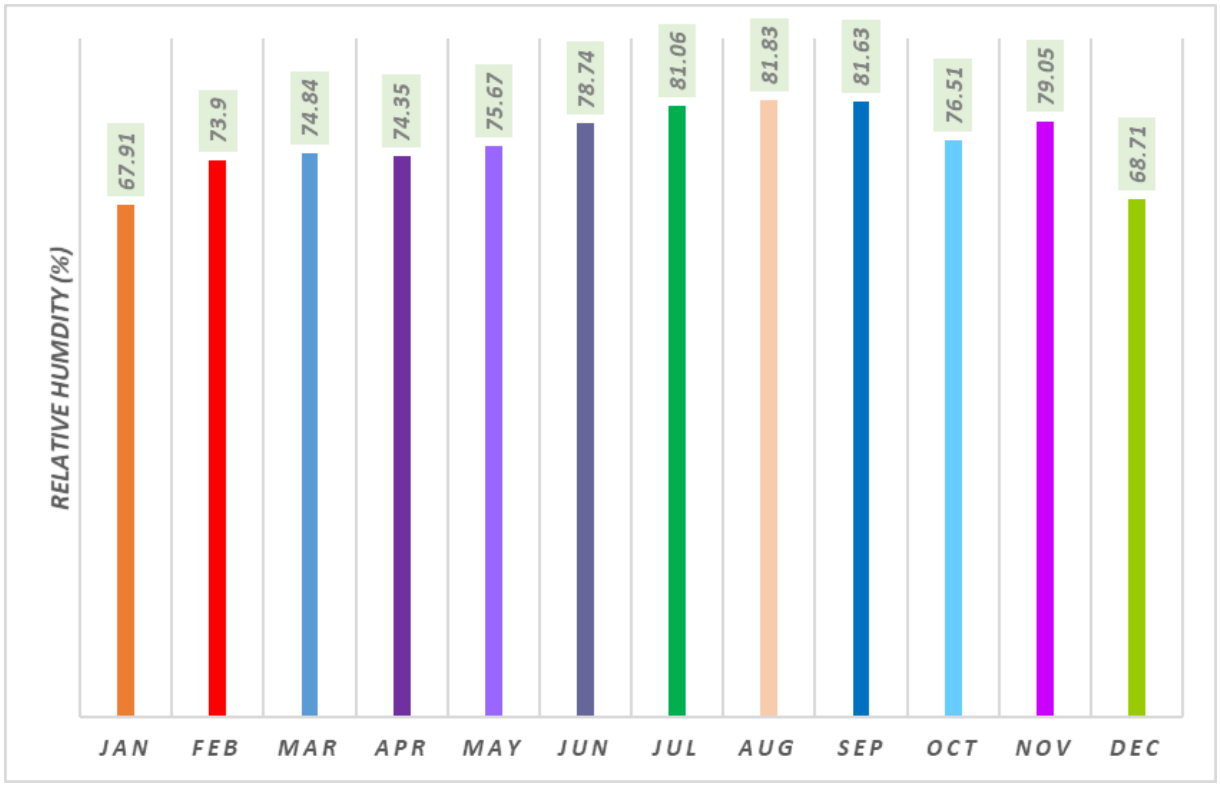


Figure 3.116: Average Relative Humidity in the Study Area

Source: Nimet

4.2.1.5 Sunshine Hours

Hours of daylight and darkness hardly vary for more than one hour during any period of the year because of the latitudinal location of the region. The annual sunshine period in the study area is about 1500 hours with monthly period of 51.2 – 165.7 hrs It receives the minimum period in July - September but the maximum in December - January. The short period in July could be due to the greater cloudiness and rainfall characteristic of the period. Conversely, the higher December sunshine period is due to the prevalent clear skies accompanying the ITCZ movement in its northward migration. The longest monthly sunshine hours occur in December/January in the dry season while July usually experiences the lowest values of sunshine hours. This can be attributed to constant cloudiness from rain clouds in the wettest months. Sunshine hours are directly proportional to the net radiation. Net radiation and air temperature are highest during the dry season except when relatively cold harmattan winds occur.

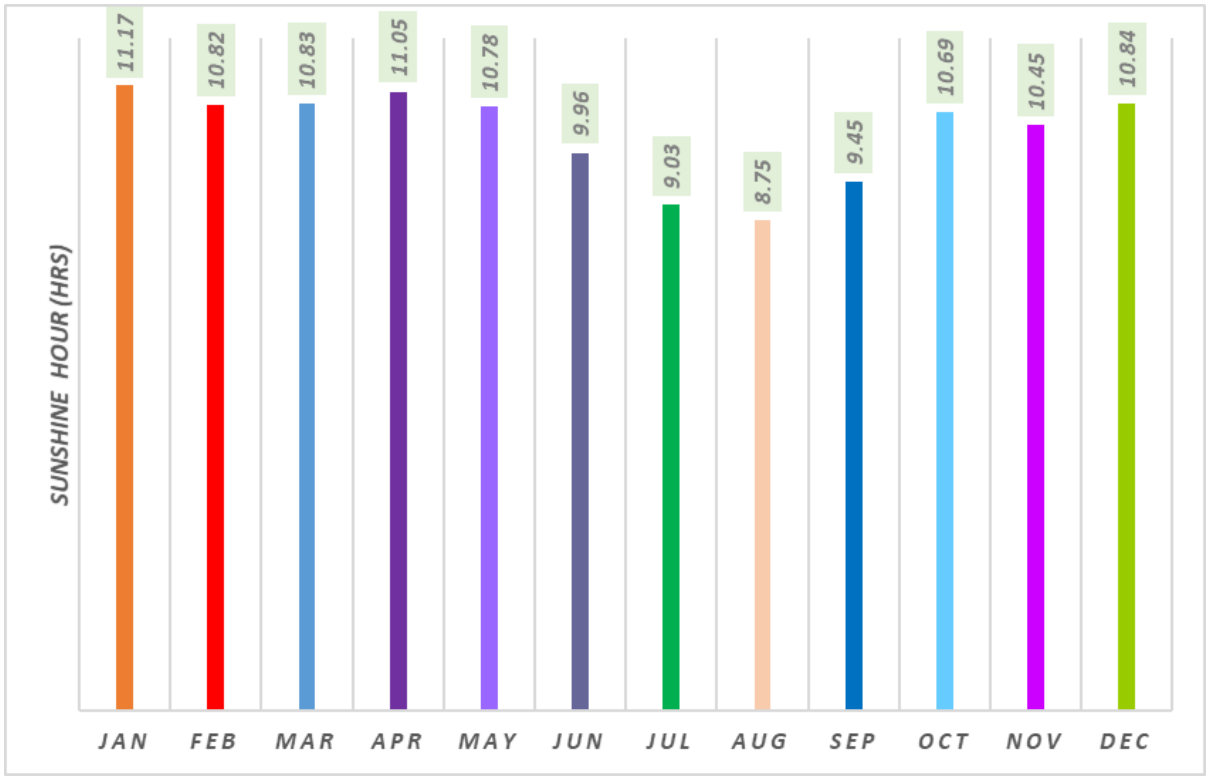


Figure 3.117: Monthly Average Sunshine Hours in the Study Area

Source: Nimet

4.2.1.6 Cloud Cover Categories

In the project areas, cloud cover is generally high throughout the year with very little variations. It is higher in May and October and lowest in June and July with average of 6.7 – 6.9 Oktas indicating overcast sky with blue patches.

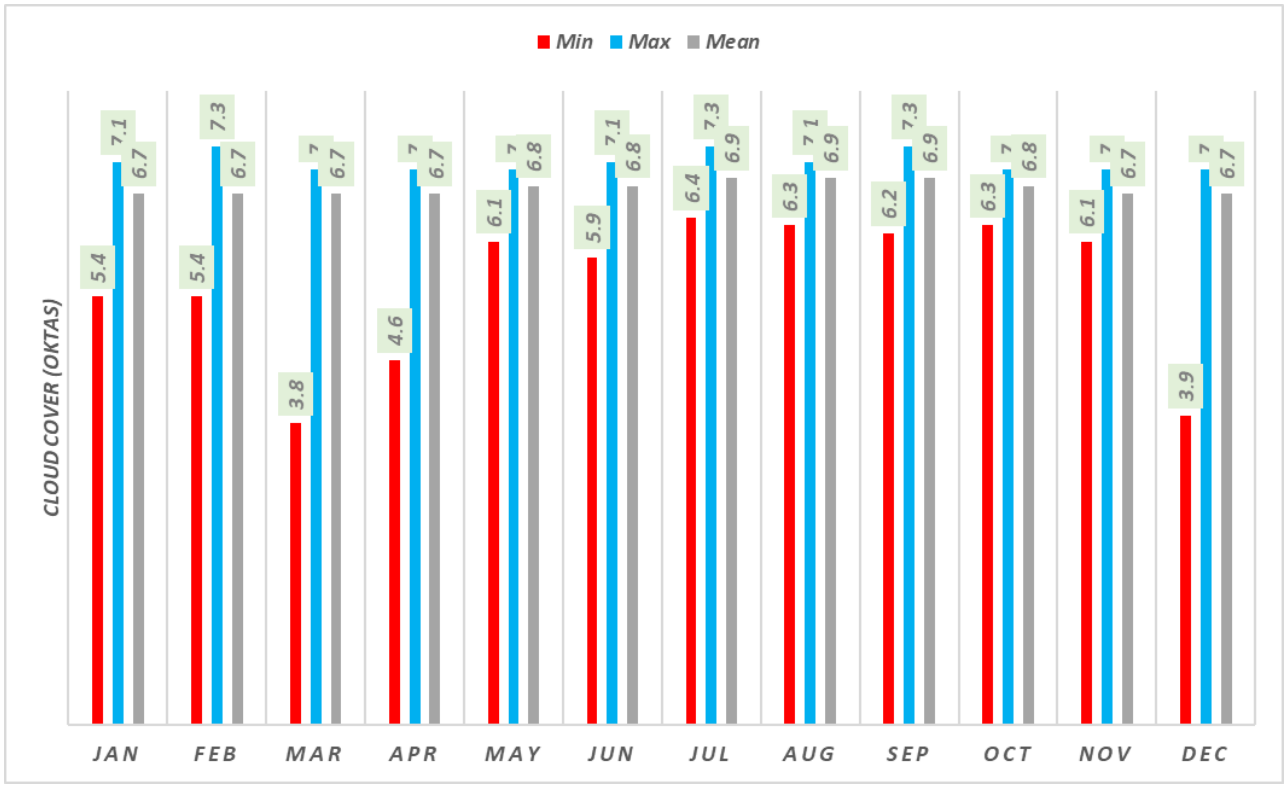


Figure 3.118: Cloud Cover in the Study Area

Source: Nimet

4.2.1.7 Atmospheric Pressure

The mean atmospheric pressure from the climatic data is 1015 – 1020 mbar with the minimum and maximum in January and June respectively. During the fieldwork, atmospheric pressure was measured to be 1007.1 – 1019.4 mbar in the dry season but 1011.1 – 1013.6 mbar in the dry season. These are also within the climatic data. Air pressure differences across various locations are the results of unequal heating across surfaces. This leads to wind blowing from high pressure areas towards low pressure areas. High pressure areas are usually associated with clear weather while low pressure areas are associated with unstable weather conditions which generate precipitation.

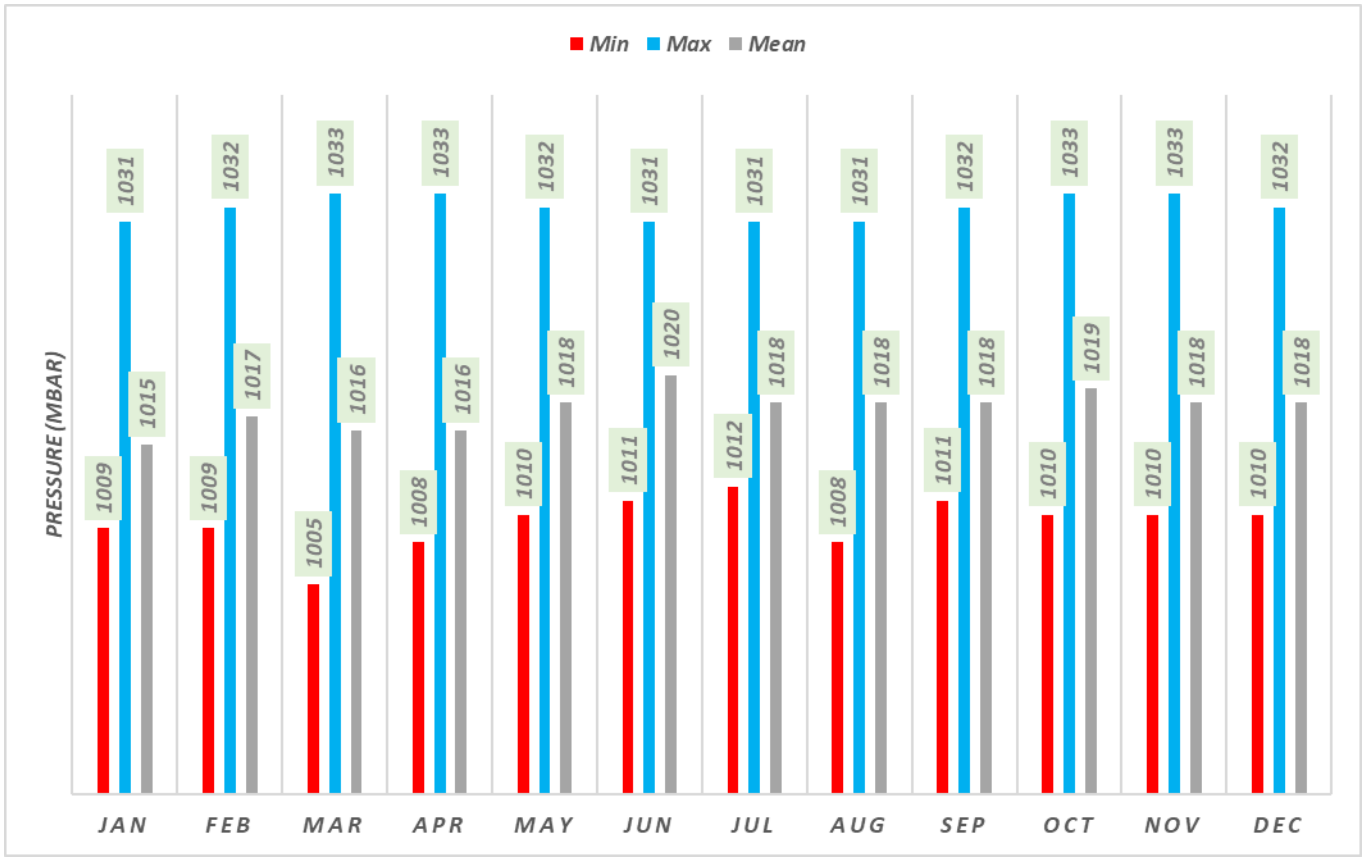


Figure 3.119: Average Pressure in the Study Area

Source: Nimet

4.2.2 Geology and geomorphology of Lagos State

Lagos State is underlain by the Benin Formation (Coastal Plain Sands) of Miocene to Recent age, a sequence of unconsolidated, highly permeable quartz sands with interbedded clay lenses. The surface geology is dominated by these sands, with recent littoral and alluvial deposits along the coastline, lagoons, and creeks.

Geomorphologically, Lagos is a low-lying coastal state with elevations ranging from 0 to 50 metres above sea level, characterized by continental sands on the mainland, littoral swamps and mangrove forests, extensive lagoons and creeks, and sandy barrier islands.

Hydrogeologically, Lagos hosts a multi-layered aquifer system with at least four major horizons. The second aquifer, at depths of 20 to 100 metres below sea level, provides over 75 percent of groundwater for domestic and industrial use, notably in the Ikeja and Ojota axis. Deeper aquifers offer excellent water quality but are vulnerable to saltwater up-coning if over-pumped.

4.2.2.1 Geology and geomorphology of of Amuwo Odofin, Ajeromi Ifelodun and Alimosho LGA

Local Government Area (LGA)	Geology	Geomorphology	Key Notes
Amuwo Odofin	Predominantly Quaternary alluvial deposits (sand, clay, silt) with swampy and lagoonal sediments.	Low-lying coastal terrain, extensive wetlands, and floodplains. High susceptibility to flooding due to proximity to Lagos Lagoon and creeks.	Covers ~171 km²; ~60% of land area classified as high to very high flood risk. Communities like Kirikiri, Satellite Town, and Agboju are especially vulnerable.
Ajeromi Ifelodun	Composed of coastal plain sands and unconsolidated sediments. Influenced by marine and fluvial processes.	Densely populated, flat terrain with poor drainage. Subject to tidal flooding and waterlogging during heavy rains.	Urbanization has altered natural drainage, increasing flood vulnerability. Infrastructure development often encroaches on wetlands.
Alimosho	Underlain by coastal plain sands and lateritic soils. Some areas have clayey subsoils.	Slightly undulating terrain compared to coastal LGAs, but still largely flat. Seasonal streams and wetlands present.	Experiences flash flooding due to rapid urban expansion and inadequate drainage. Communities like Ijegun and Iseri-Osun are moderately flood-prone.

4.2.2.2 Hydrology and Drainage of Amuwo Odofin, Ajeromi Ifelodun and Alimosho LGA

LGA	Hydrology	Drainage Characteristics	Key Notes
Amuwo Odofin	Influenced by Lagos Lagoon, Ojo Creek, and several tidal channels. Seasonal rainfall contributes to high water levels.	Natural drainage via creeks and wetlands; however, urban reclamation and blocked channels reduce efficiency.	High flood risk due to lagoonal proximity. Drainage systems often overwhelmed during peak rains. Requires sustainable lagoon buffer management.
Ajeromi Ifelodun	Dominated by tidal hydrology from the Atlantic Ocean and Lagos Lagoon. Heavy rainfall leads to waterlogging.	Poorly developed drainage, with open channels often clogged by waste. Flat terrain exacerbates tidal backflow.	Frequent urban flooding and waterlogging. Drainage rehabilitation and solid waste management are critical.
Alimosho	Inland hydrology dominated by seasonal streams (e.g.,	Drainage largely artificial (concrete channels), but rapid urbanization has	Moderate flood risk compared to coastal LGAs, but urban expansion increases

	River Oshun tributaries). Rain-fed catchments.	reduced natural infiltration. Flash floods common in rainy season.	vulnerability. Requires improved stormwater infrastructure.

4.3 Ambient Air Quality and Noise Level

This section presents the baseline air quality and noise monitoring results conducted at four (4) Primary Health Center (PHC) locations within Lagos State. The assessment establishes pre-project or existing environmental conditions against which future impacts will be evaluated. Monitoring was conducted in accordance with the Federal Ministry of Environment (FMEnv) Guidelines, National Environmental Standards and Regulations Enforcement Agency (NESREA) Regulations, and the International Finance Corporation (IFC) Environmental, Health, and Safety (EHS) Guidelines.

Ambient air quality and noise measurements were conducted at selected Primary Health Care (PHC) facilities in Lagos State. Parameters measured included Relative Humidity (RH%), PM2.5, PM10, CO_2, Temperature, Formaldehyde (HCHO), Air Quality Index (AQI), Noise, and Total Volatile Organic Compounds (TVOC). Results were benchmarked against FMEnv, NESREA, and IFC standards.

Table 4.1: List of the Measured Parameters for Air Quality and Equipment Used.

Parameter	Equipment Name & Model	Detection Limit	Mode of Operation
➢ Particulate Matter ($PM_{2.5}$ & PM_{10}) ➢ Volatile Organic Compound ➢ Carbon monoxide ➢ Ozone ➢ Nitrogen dioxide	Aeroqual Series 500 with the respective sensor heads	PM (0-2,000µg/m^3) VOC (0-50ppm) CO (0-100ppm) 0_3 (0-50ppm) NO_2 (0-1ppm)	Sensors are housed within an interchangeable 'sensor head' that attaches to the monitor base. Each sensor head contains a single gas or particle sensor. Swapping sensor heads takes seconds, can be done in the field, and no configuration or re-calibration is required. Active sampling is a key design feature. Each sensor head contains a fan that works continuously or periodically (depending on the sensor type) to draw sample air to the sensor. Once sampled the air is exhausted from the opposite side of the sensor head.
Meteorological Parameters ➢ Temperature ➢ Relative Humidity	Kestrel Weather Meter 5500	0 to 55ºC 0 – 100% 900-1030hPa 0.1-40m/s	The Kestrel weather meter is turned ON pressing and holding the power button until the display activates. The units of measurement are configured, and the desired weather parameters are selected after which actual measurements of

➢ Barometric Pressure ➢ Windspeed			the parameters is done. Finally, the displayed values are recorded.

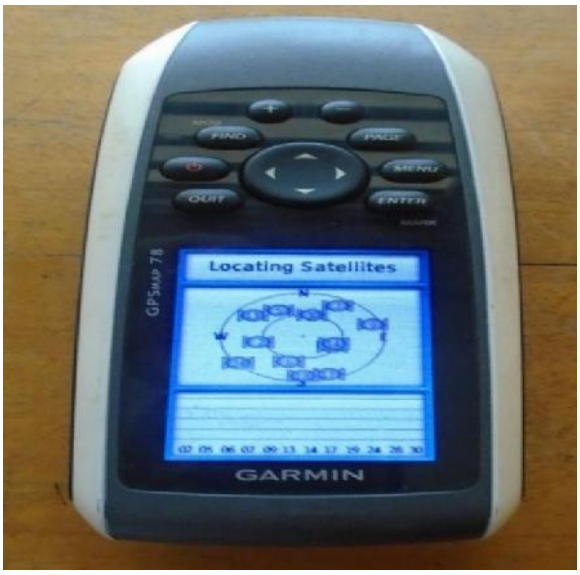


Plate 4.1: Geographical Positioning System (GPS): For obtaining the geographical coordinates of locations.



Plate 4.2: Kestrel: For measuring meteorological parameters (temperature, wind speed, humidity, barometric pressure etc)





Plate 4.3: Aeroqual Gas Sensing: For measuring Particulate Matters ($PM_{2.5}$ & PM_{10}). CO. VOC. NO_2 & O_3

Plate 4.4: Aeroqual Sensor Heads

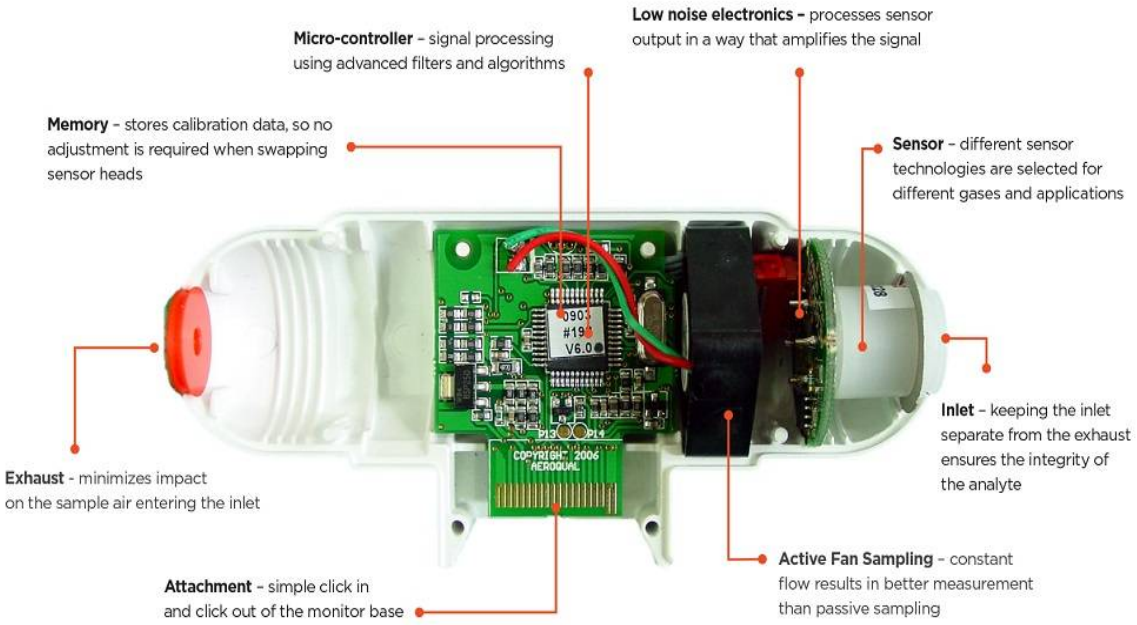


Figure 4.1: Components of the Aeroqual 500 series Monitor

4.3.1 Ambient Air Quality

Baseline Ambient Air Quality Assessment

The baseline ambient air quality monitoring conducted across four (4) Primary Health Care (PHC) locations in Lagos State provides a clear picture of prevailing conditions and compliance with international and national standards.

Particulate Matter (PM2.5 & PM10)

Monitoring results indicate **good to excellent particulate matter control** at 11 of the 12 locations assessed. PM10 concentrations were fully compliant with regulatory thresholds, while PM2.5 achieved **92% compliance** against the IFC guideline value of 25 µg/m³. However, one severe hotspot was identified at **Agboju PHC SP3**, where PM2.5 reached **82.5 µg/m³**. This level corresponds to an **Air Quality Index (AQI) of 154**, classified as *Unhealthy*, exceeding IFC standards by 230% and FMEnv standards by 136%. This exceedance requires **urgent source identification and control measures**.

Carbon Dioxide (CO_2)

CO_2 concentrations ranged between **488–565 ppm**, which are consistent with normal ambient conditions. These values do not indicate ventilation concerns and remain within acceptable limits for both indoor and outdoor environments.

Formaldehyde (HCHO)

Formaldehyde concentrations were generally low across most sites. However, one exceedance was recorded at Bada PHC SP3, with a value of 0.13 ppm (~0.16 mg/m³). This exceeds the WHO guideline of 0.08 ppm by approximately 62.5%, warranting source investigation and enhanced ventilation strategies to reduce exposure risks.

Total Volatile Organic Compounds (TVOC)

TVOC levels remained within regulatory limits across all sites, with no exceedances observed. Concentrations were consistent with typical urban background levels.

Conclusion

The baseline assessment demonstrates that **ambient air quality across the majority of PHC locations is compliant with international and national standards**, with particulate matter and gaseous pollutants generally within acceptable ranges. However, two critical exceedances were observed:

- **PM2.5 at Agboju PHC SP3**, requiring immediate intervention.
- **Formaldehyde at Bada PHC SP3**, necessitating source control and improved ventilation.

These findings highlight the need for **targeted mitigation measures** at identified hotspots while maintaining ongoing monitoring to ensure sustained compliance and protection of public health.

Regulatory Limit Summary Table (Air Quality Parameters)

Parameter	FMEnv Limit	NESREA Limit	IFC/World Bank Limit	WHO Guideline	Unit	Applicable Standard
PM2.5 (24-hour mean)	35	35	25	15 (interim) / 5 (final)	µg/m³	25 (IFC)
PM10 (24-hour mean)	250	250	50	45 (interim) / 15 (final)	µg/m³	50 (IFC)
CO2 (8-hour TWA)	NS	NS	5,000	NS	ppm	5,000 (IFC)
Formaldehyde (HCHO) (30-minute mean)	NS	NS	NS	0.08	ppm	0.08 (WHO)
TVOC	NS	NS	NS	500 (comfort reference)	µg/m³	500 (Reference)
Temperature	No standard	No standard	No standard	No standard	°C	N/A
Relative Humidity (RH)	No standard	No standard	No standard	No standard	%	N/A

NS = Not Specified in accessible regulations
Applicable Standard: Per IFC Performance Standards, the more stringent standard between host country regulations and IFC/WHO guidelines applies.

Table 4.3.1: Ambient Air Quality Measured at the Study Area with Regulatory Limits

Location / Sampling Point (SP)	RH (%)	PM2.5 (µg/m³)	PM10 (µg/m³)	CO2 (ppm)	Temp (°C)	HCHO (ppm)	AQI	TVOC (µg/m³)	Coordinates (Lat, Lon)
Regulatory Limit	—	**25**	**50**	**5,000**	—	**0.08**	—	**500**	—

Agboju PHC SP1	76	12.5	22.6	500	33.8	0.01	52	60.5	6.458077, 3.283238
Agboju PHC SP2	73	14.7	27.2	488	34.5	0.01	53	59.8	6.458016, 3.283543
Agboju PHC SP3	71	**82.5**	29.5	490	35.2	0.02	**154**	79.0	6.458147, 3.282824
Oridilu PHC SP1	97	13.6	24.1	502	26.8	0.03	54	59.7	6.464410, 3.351390
Oridilu PHC SP2	92	9.4	15.9	529	28.3	0.07	38	61.0	6.464515, 3.351555
Oridilu PHC SP3	90	12.8	21.0	530	28.2	0.02	51	64.3	6.464234, 3.351147
Bada PHC SP1	82	14.1	24.8	494	30.7	0.01	53	61.8	6.590535, 3.228266
Bada PHC SP2	78	13.8	24.8	493	32.0	0.02	54	59.4	6.590666, 3.228307
Bada PHC SP3	74	11.7	19.2	496	33.1	**0.13**	47	60.1	6.590434, 3.228280
Ogbomoshotedo PHC SP1	94	8.7	16.0	550	26.8	0.01	36	66.3	6.575358, 3.258728
Ogbomoshotedo PHC SP2	85	10.3	14.8	501	30.1	0.02	36	65.5	6.575510, 3.258693
Ogbomoshotedo PHC SP3	83	16.3	18.7	565	31.6	0.01	38	76.6	6.575578, 3.258614

Source: MDS Field Work 2026

4.3.2 Noise Level

Baseline Summary

The baseline noise monitoring conducted across four (4) PHC locations in Lagos State reveals:

- **Critical noise pollution affecting 75% of monitored locations** (9 of 12 points exceed 55 dB(A)), representing the most significant environmental compliance issue requiring immediate intervention.
- The highest level was **65.8 dB(A) at Ogbomoshotedo PHC SP3**, representing a 20% exceedance of the 55 dB(A) daytime limit.

Regulatory Limit Summary Table (Noise Parameter)

Parameter	FMEnv Limit	NESREA Limit	IFC/World Bank Limit	WHO Guideline	Unit	Applicable Standard
Noise (Daytime - Residential/Institutional)	55	55	55	55	dB(A)	55 (All)

Applicable Standard: All regulatory frameworks (FMEnv, NESREA, IFC, WHO) converge on a daytime limit of 55 dB(A) for residential and institutional areas, including healthcare facilities.

Table 4.3.2: Noise Level Measured at the Study Area with Regulatory Limit

Location / Sampling Point (SP)	Noise Level (dB(A))	Regulatory Limit (dB(A))	Status	Coordinates (Lat, Lon)
Regulatory Limit	55	—	—	—
Agboju PHC SP1	50.7	55	Compliant	6.458077, 3.283238
Agboju PHC SP2	52.7	55	Compliant	6.458016, 3.283543
Agboju PHC SP3	57.3	55	Non-Compliant	6.458147, 3.282824
Oridilu PHC SP1	59.2	55	Non-Compliant	6.464410, 3.351390
Oridilu PHC SP2	58.9	55	Non-Compliant	6.464515, 3.351555
Oridilu PHC SP3	63.5	55	Non-Compliant	6.464234, 3.351147
Bada PHC SP1	61.0	55	Non-Compliant	6.590535, 3.228266
Bada PHC SP2	59.2	55	Non-Compliant	6.590666, 3.228307
Bada PHC SP3	60.1	55	Non-Compliant	6.590434, 3.228280
Ogbomoshotedo PHC SP1	62.4	55	Non-Compliant	6.575358, 3.258728
Ogbomoshotedo PHC SP2	64.6	55	Non-Compliant	6.575510, 3.258693
Ogbomoshotedo PHC SP3	65.8	55	Non-Compliant	6.575578, 3.258614

Source: MDS Field Work 2026

key Findings on Noise Level

Extent of Exceedance:

Nine out of twelve sampling points (75%) exceeded the 55 dB(A) daytime limit. Only Agboju PHC SP1 (50.7 dB) and SP2 (52.7 dB) were compliant. Agboju PHC SP3 recorded 57.3 dB, a 4% exceedance.

Location-Specific Results:

Oridilu PHC recorded noise levels ranging from 58.9 to 63.5 dB, representing exceedances of 7% to 15%. Bada PHC recorded levels ranging from 59.2 to 61.0 dB, representing exceedances of 8% to 11%. Ogbomoshotedo PHC recorded the highest levels, ranging from 62.4 to 65.8 dB, representing exceedances of 13% to 20%.

Most Affected Location:

Ogbomoshotedo PHC SP3 recorded the highest noise level at 65.8 dB(A), a 20% exceedance of the regulatory limit, making it the most critical noise hotspot requiring immediate intervention.

4.3.2.1 Conclusions

Noise Level: Noise pollution is the most significant environmental compliance issue identified in this assessment, with 75% of monitoring points exceeding the 55 dB(A) daytime limit. Ogbomoshotedo PHC is the most severely affected, with levels reaching 65.8 dB(A). Immediate intervention is required to identify noise sources and implement mitigation measures across all affected locations.

Appendix 5.5: Climate Risk Assessment and Stress Testing – Group 1 (Amuwo-Odofin/Ajeromi Ifelodun/Alimosho Axis)

A.4.5.1 Introduction

This appendix presents the detailed climate risk assessment and stress testing results for the four PHC facilities in Group 1: **Agboju, Oridilu, Bada, and Ogbomoshotedo**. The assessment follows the methodology outlined in Section 1.10.1A and is conducted in accordance with:

- AfDB Operational Safeguard 1 (OS1) – Environmental and Social Assessment
- IFC Performance Standard 3 (PS3) – Resource Efficiency and Pollution Prevention
- IPCC AR6 Climate Projections (2021)
- Nigeria's Nationally Determined Contributions (NDC, 2021)
- Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

A.4.5.2 Climate Hazard Maps for Each Site (2050 Projection)

A.4.5.2.1 Agboju PHC

Location: Owoyemi Cl, Agboju, Satellite Town, Amuwo-Odofin LGA (6.458077°N, 3.283238°E)

Topography: Low-lying coastal plain (elevation: 2–5m above sea level)

Flood Risk (2050 Projection): VERY HIGH

Parameter	2024 Baseline	2050 Projection (RCP 8.5)
1:100-year flood extent	Coastal floodplain	Significant expansion
Maximum flood depth	0.5–1.5m	1.0–2.5m
Sea-level rise	2–3mm/year	+0.5m
Storm surge height	0.5–1.0m	1.0–2.0m

Key Vulnerabilities:

- Proximity to Lagos Lagoon and creeks
- Low-lying terrain
- Dense residential/commercial area
- 13 PAPs (shops) vulnerable to displacement

Recommended Adaptation Measures:

- Elevated foundation (minimum 1.5m above projected flood level)
- Oversized drainage (1:100-year + 30%)
- Flood barriers for critical equipment
- Elevated electrical systems (2.0m above ground)

A.4.5.2.2 Oridilu PHC

Location: Town Hall St, Badia Ojora, Ajeromi Ifelodun LGA (6.464410°N, 3.351390°E)

Topography: Flat, reclaimed land (elevation: 1–3m above sea level)

Flood Risk (2050 Projection): VERY HIGH

Parameter	2024 Baseline	2050 Projection (RCP 8.5)
1:100-year flood extent	Tidal floodplain	Significant expansion
Maximum flood depth	0.5–1.5m	1.0–2.5m
Sea-level rise	2–3mm/year	+0.5m
Tidal influence	Daily	Increased frequency

Key Vulnerabilities:

- Reclaimed land (Lagos Lagoon)
- Densely populated urban area

- Industrial activity
- Asbestos suspected

Recommended Adaptation Measures:

- Elevated foundation (minimum 1.5m above projected flood level)
- Flood barriers
- Pump station (if needed)
- Elevated electrical systems (2.0m above ground)

A.4.5.2.3 Bada PHC

Location: Bada village, Ayobo Ipaja LCDA, Alimosho LGA (6.590535°N, 3.228266°E)

Topography: Slightly undulating (elevation: 10–15m above sea level)

Flood Risk (2050 Projection): HIGH

Parameter	2024 Baseline	2050 Projection (RCP 8.5)
1:100-year flood extent	Limited floodplain	Moderate expansion
Maximum flood depth	0.2–0.5m	0.3–0.8m
Rainfall intensity	75mm/hr	98mm/hr (+30%)

Key Vulnerabilities:

- Flash flooding due to rapid urban expansion
- Inadequate drainage infrastructure
- Asbestos suspected

Recommended Adaptation Measures:

- Oversized drainage (1:100-year + 30%)

- Rainwater harvesting (5,000–10,000L)
- Elevated electrical systems (1.0m above ground)

A.4.5.2.4 Ogbomoshotedo PHC

Location: Green land estate Isheri, Egbe Idimu LCDA, Alimosho LGA (6.575358°N, 3.258728°E)

Topography: Flat to gently undulating (elevation: 8–12m above sea level)

Flood Risk (2050 Projection): HIGH

Parameter	2024 Baseline	2050 Projection (RCP 8.5)
1:100-year flood extent	Moderate floodplain	Significant expansion
Maximum flood depth	0.3–0.8m	0.5–1.2m
Rainfall intensity	75mm/hr	98mm/hr (+30%)

Key Vulnerabilities:

- Rapid urban expansion
- Inadequate drainage
- Asbestos suspected

Recommended Adaptation Measures:

- Oversized drainage (1:100-year + 30%)
- Rainwater harvesting (5,000–10,000L)
- Elevated electrical systems (1.0m above ground)

A.4.5.3 Combined Climate Hazard Exposure Matrix (2050)

Site	Flood Risk	Coastal Erosion	Heatwave Risk	Extreme Rainfall	Overall Vulnerability
Agboju	Very High	High	Very High	High	High

Oridilu	Very High	High	Very High	High	High
Bada	High	Low	Very High	Medium	Medium–High
Ogbomoshotedo	High	Medium	Very High	Medium	Medium–High

A.4.5.4 Heat Stress Modelling Results

Parameter	2024 Baseline	2050 Projection (RCP 8.5)	Increase
Annual average temperature	28.0°C	30.5°C	+2.5°C
Maximum temperature	35.0°C	38.5°C	+3.5°C
Hot days (>35°C)	25 days/year	80 days/year	+220%
Extreme heat days (>40°C)	5 days/year	25 days/year	+400%
Heat index (peak)	42°C	52°C	+10°C

Heat Stress Risk by Site:

- **Agboju:** Very High (urban heat island effect)
- **Oridilu:** Very High (urban/industrial heat island)
- **Bada:** Very High (urban heat island)
- **Ogbomoshotedo:** Very High (urban heat island)

Mitigation:

- Cool roofs (SRI ≥80)
- Natural ventilation
- Ceiling fans
- Shaded waiting areas
- Solar PV (50–100 kVA)
- Landscaping (native shade trees)

A.4.5.5 Adaptation Budget Summary

Site	Drainage Upgrade (₦)	Coastal Protection (₦)	Heat Mitigation (₦)	Total (₦)
Agboju	8,000,000	12,000,000	4,000,000	24,000,000
Oridilu	8,000,000	12,000,000	4,000,000	24,000,000
Bada	5,000,000	N/A	3,000,000	8,000,000
Ogbomoshotedo	5,000,000	N/A	3,000,000	8,000,000
TOTAL	26,000,000	24,000,000	14,000,000	**64,000,000**

Note: These costs are included in the ESMP budget (Section 7.11) under "Climate Resilience Measures."

A.4.5.6 Residual Risk Assessment

After implementing the adaptation measures, residual risks are reduced to **low–medium** levels for all sites. Agboju and Oridilu require ongoing monitoring (erosion, flood events, WBGT) due to their coastal location.

Appendix 6 Asbestos Management Plan (AMP)

1.0 Introduction

Asbestos-Containing Materials (ACMs) were identified or suspected in roofing sheets, ceiling boards, and insulation materials across Group 1 sites (Agboju, Oridilu, Bada, and Ogbomoshotedo), with potential presence in older ancillary structures. This Asbestos Management Plan (AMP) provides procedures for safe identification, removal, handling, transport, and disposal of ACMs in compliance with:

- FMEnv National Environmental Regulations (2011)
- LASEPA Environmental Safety Guidelines
- AfDB ISS (2024) – OS1, OS4, OS5
- WHO Asbestos Guidelines (2014)
- ILO Convention C162 (Safety in the Use of Asbestos)

The AMP ensures zero exposure to workers, patients, and community members during refurbishment and demolition works.

2.0 Objectives of the AMP

- Prevent occupational and community exposure to asbestos fibers.
- Ensure safe removal, containment, and disposal of ACMs.
- Comply with FMEnv, LASEPA, and AfDB ISS requirements.
- Protect vulnerable groups (children, elderly, pregnant women).
- Establish monitoring, reporting, and emergency response procedures.
- Ensure only licensed asbestos contractors conduct removal activities.

3.0 Asbestos Identification & Survey Procedures

3.1 Pre-Removal Survey

A licensed FMEnv-accredited asbestos assessor shall conduct:

- Visual inspection of roofing sheets, ceiling boards, insulation, pipe lagging.
- Material sampling using wet-method extraction.
- Laboratory analysis using PCM/TEM methods.
- Risk classification (friable vs non-friable).
- Site-specific ACM inventory (to be included in Appendix 8.X).

3.2 Suspected ACM Locations (Group 1 Sites)

- Agboju PHC: Suspected ACMs in older roofing sheets and ancillary storage facilities.
- Oridilu PHC: Older ancillary structures and ceiling insulation materials.
- Bada PHC: Old roofing sheets and ceiling boards in primary structures.

- Ogbomoshotedo PHC: Precautionary screening required for older roofing and partition boards.

4.0 Asbestos Removal Procedures

4.1 Contractor Requirements

Only FMEnv-licensed asbestos abatement contractors may perform removal. Contractor must submit:

- Asbestos Removal Plan (ARP)
- Worker training certificates
- PPE inventory
- Waste transport permit
- Emergency response plan

4.2 Site Preparation

- Establish 20–50 m exclusion zone around work area.
- Install warning signage ("DANGER: ASBESTOS – KEEP OUT").
- Erect temporary fencing and restrict public access.
- Shut down HVAC systems to prevent fiber spread.
- Notify LASEPA and FMEnv 72 hours before removal.

4.3 Removal Method (Wet Method – WHO Standard)

- Wet ACMs continuously with surfactant solution.
- Remove sheets intact; no breaking, cutting, drilling, or sanding.
- Use hand tools only; no power tools.
- Place ACMs in 6-mil thick double-bagged asbestos waste bags.
- Seal bags with duct tape and label: "ASBESTOS WASTE – DO NOT OPEN".

4.4 Worker Protection

Workers must use:

- Full-face P3 respirators
- Disposable coveralls
- Nitrile gloves
- Rubber boots
- Eye protection

Workers must undergo:

- Medical screening
- Fit-testing

- Asbestos safety training

5.0 Transport & Disposal Procedures

5.1 Transport

- Use FMEnv-licensed hazardous waste transporters.
- Vehicles must have sealed compartments.
- Transport directly to approved disposal sites.

5.2 Disposal

Disposal must occur at:

- LAWMA-approved hazardous waste landfill
- FMEnv-licensed asbestos burial pit

Waste manifest must include:

- Quantity of ACM removed
- Date/time of transport
- Disposal site signature
- Chain-of-custody documentation

6.0 Air Monitoring & Clearance Testing

6.1 During Removal

- Continuous air monitoring using PCM/TEM.
- Acceptable limit: ≤ 0.1 fibers/ml (WHO standard).
- Stop work if levels exceed threshold.

6.2 Post-Removal Clearance

- Conduct final air sampling.
- Perform visual inspection for debris.
- Issue Asbestos Clearance Certificate (Appendix 6.).

7.0 Emergency Response Procedures

Emergency Scenarios:

- Accidental breakage of ACM
- Bag rupture
- Worker exposure
- Unauthorized access to exclusion zone

Response Steps:

- Stop work immediately.
- Evacuate non-essential personnel.

- Wet contaminated area.
- Seal broken ACM in new bags.
- Conduct emergency air monitoring.
- Report incident to PIU, LASEPA, FMEnv within 24 hours.
- Document corrective actions.

8.0 Community Protection Measures

- Conduct community sensitization before removal across Group 1 communities (Agboju, Oridilu, Bada, and Ogbomoshotedo).
- Provide GBV-sensitive communication for women and elderly.
- Ensure school children are kept away from work zones.
- Install dust screens and wind barriers.
- Maintain 24-hour CLO presence during removal.

9.0 Roles & Responsibilities

Entity	Responsibility
PIU (LSMoH)	Oversight, approvals, reporting to AfDB/FMEnv
Contractor	Safe removal, PPE, waste transport, documentation
Licensed Asbestos Assessor	Survey, sampling, air monitoring, clearance
LASEPA	Compliance verification, environmental monitoring
FMEnv	Regulatory approval, hazardous waste oversight
CLO	Community communication, grievance handling
IESM	Independent monitoring & verification

10.0 Monitoring & Reporting

Monitoring Indicators:

- Number of ACM samples collected
- Air quality readings (fibers/ml)
- Number of workers trained
- Quantity of ACM removed
- Number of incidents reported
- Clearance certificate issued

Reporting Frequency:

- Daily contractor reports
- Weekly PIU updates
- Monthly reports to AfDB

- Final Asbestos Removal Completion Report

11.0 Budget Estimate (Indicative)

Item	Cost (NGN)
Asbestos Survey & Testing	2,500,000
Removal Contractor	6,000,000
PPE & Consumables	1,200,000
Air Monitoring	1,000,000
Transport & Disposal	1,500,000
Community Sensitization	300,000
Total	**12,500,000**

Appendix 7 -- Stakeholder Engagement Evidence Package

This Appendix provides full evidence of stakeholder engagement conducted between 24 February and 10 April 2026 across the four PHC sites. It includes:

- Attendance sheets (scanned copies)
- Contact lists
- Signatures
- Photographs (Plates)
- Concerns matrix with project responses
- Field sampling logs
- Laboratory certificates
- Site photographs (Plates 3.2–3.5)
- Statement of completeness

All evidence complies with FMEnv ESIA Act (1992), AfDB ISS (2024), and LASEPA requirements for free, prior, informed, and documented consultation.

STAKEHOLDERS ENGAGEMENT OF THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) OF LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVE PROJECT.

The Environmental Impact Assessment law requires that an Environmental Impact Assessment (EIA) be conducted to assess and evaluate the potential impact on the environment and affected communities. As part of the ESIA preparation meaningful consultation has to be carried out with all stakeholders. This engagement is an integral part of that stakeholder engagement designed to have your view on the proposed project.

Highlights of Stakeholders' Engagement

Item	Description
Place of Meeting	Amuwo Odofin PHC
Date	April 8, 2026
Language of Communication	English and Yoruba
Purpose of Meeting	To inform the stakeholders on the proposed project, the timeline, the components and the need for the ESIA and seek their cooperation to ensure a smooth project execution
Opening Remarks	First to be introduced were the representatives of the Lagos State Ministry of Health, the project proponents (on behalf of the Lagos State Government), officials of the Federal Ministry of Environment (Representatives of the Federal Minister of Environment, Controller of Environment, Lagos State), officials of the Lagos State Ministry of Environment (representative of the Commissioner of Environment) and the ESIA Consultants (Multiple Development Services, MDS). The stakeholders who came from the selected Primary Health Care Centres (PHC) communities included chiefs and elders under the Amuwo Odofin zone also introduced themselves. The Senior Special Assistant to the Lagos State Commissioner of Health gave insight on the proposed project. He said it was conceptualised to uplift the level of health care delivery at various local levels through improved and modernised facilities for the benefit of the people of Lagos State. He added that some present facilities would be renovated and made fit for effective delivery. Others will be outright construction of new structures equipped with modern facilities for optimal healthcare delivery. The structures will be modernised with good roofing, provision of solar power to ensure round the clock power supply, ambulances and paces for rest for the medical personnel. A total of 29 PHCs and one general hospital will involved. Out of this Amuwo Odofin zone will have 4. The new prototype will accommodate personnel, patients with adequate facilities. Attention has also been given to the issue

	of availability of drugs in sufficient quantities to ensure maximum delivery. He added that the project is being supported by African Development Bank (AfDB). The project has been designed with optimum quality in mind. A timeline has been given within which the project would be delivered, adding that the goal was the completion before the end of the tenure of the administration of the State in 2027. The representative of the Federal Minister of Environment stated that it was a regulatory requirement that project of the magnitude being proposed be made to comply with the ESIA Law in the country. Appropriate standards must be applied in the project conceptualization and execution to ensure its success in terms safety and sustainability. The ESIA data collection exercise is also being monitored to ensure it complies with provided guidelines. The representative of the ESIA consultants, MDS stated the Scoping Workshop was meant to inform and educate key stakeholders, the host communities including NGOs on the project design, the ESIA process and the need for stakeholders to cooperate and contribute to the project successful execution. He thereafter made a presentation on the project design including the four components, the ESIA process including data collection stages to ensure the document meets the required standards and the needed cooperation and contribution of stakeholders. He then appealed for maximum cooperation of the stakeholders in providing appropriate information for the success of the ESIA preparation. The stakeholders should feel free to ask questions and offer their suggestions.
The Project: **The ESIA for Lagos State Health Facilities**	The ESIA process is aimed at ensuring that a project is planned, executed and operated in a sustainable manner meeting set objectives. It outlines the process for data collection and analysis keeping to set standards for guidance. It was to be observed that two PHCs were operating under one facility - Amuwo Odofin and Agboju Oriade. There was an ongoing construction of a new structure under SGD for Amuwo Odofin. A new one is proposed for another location for Agboju Oriade.

Main Objective	This is to ensure that everyone involved in the process is informed and has opportunity to contribute to its success through the application of sustainable principles
Need for Public Involvement	The ESIA is a regulatory requirement for projects of this magnitude to comply with provisions of the EIA act 2004 and ISS safeguard standards. The engagement of stakeholders is emphasised right through the project conception, execution and operation.
Stakeholders' Queries, concerns, General perception about the Project	1. Water supply - What source of water will be constructed? Will be borehole or well? 2. Will the power supply be limited to cover just fan and light? 3. Will there be fence? There should be adequate protection for the facilities at the locations 4. Usually when cases that require surgery are referred to the hospitals. Will the new PHCs be equipped to carry out surgeries? 5. What is Planned for Oridilu PHC? Refurbishment or new construction? New construction will be preferred. The population of the area is high. 6. What is the duration of the construction? 7. What is the plan for maintenance of the facilities? Who will be responsible for maintenance? 8. What is the plan for operation of the facilities during construction? Will it be total shut down or will there be skeletal operation? 9. What is the plan for Bada PHC? The present location experiences flooding due to terrain. The structure is too small to accommodate the level of expected patronage. What will be done?
Stakeholders' Specific needs from the project	1. Ensure the new structures are of modern standards and also sustainable. The structures should be easy to maintain. 2. Consider the employment of indigenes during the construction and operation of the new facilities

	3. Oridilu PHC should be included on the list of PHCs to be reconstructed as the present structure is too week for refurbishment.
Responses to Stakeholders' Needs, concerns/How addressed by the project (Design/Operation)	1. Sustainability - The Lagos State Government has given this priority. Top quality materials will be used. AfDB that is supporting the project will monitor the materials to be used and the construction up to completion. 2. There will guaranteed and adequate 24 hours power supply through installation of Solar Power facilities. 3. The present administration in the state wants it completed and commissioned before the tenure ends in 2027, affirming the certainty of execution. 4. The three different aspects will be meticulously handled to ensure quality and durability. 5. The various communities will be involved in the project life circle. There will be continuous engagement of key stakeholders - leaders, youth, traditional rulers - local people who can supply top quality materials will engaged. 6. There will be facilities for the accommodation of medical personnel to ensure their round the clock presence. 7. Also considered are the installation of required medical equipment for adequate treatment. 8. Adequate training has been considered an important aspect of the project. 9. Adequate waste management especially medical waste will be in place. 10. The PHCs included in the new project are: Agboju Oriade Oridilu Bada Ogbomoshotedo

(Please, note as you write the table expands and use additional sheet where Necessary. Remember to include pictures that are Apt.)



Francisca Okwuosa (Mrs)

Rep. Of Minister, FMEnv

Name/Sign/Date

Tel. No.



Dr. Ayodotun Bobadoye

Special Asst. To Commissioner for Health

Name/Sign/Date

Tel. No.



Chidiebere Emmanuel

Head, MDS Team

Name/Sign/Date

Tel. No.

Appendix 7.1: Pictures of Stakeholders Engagement

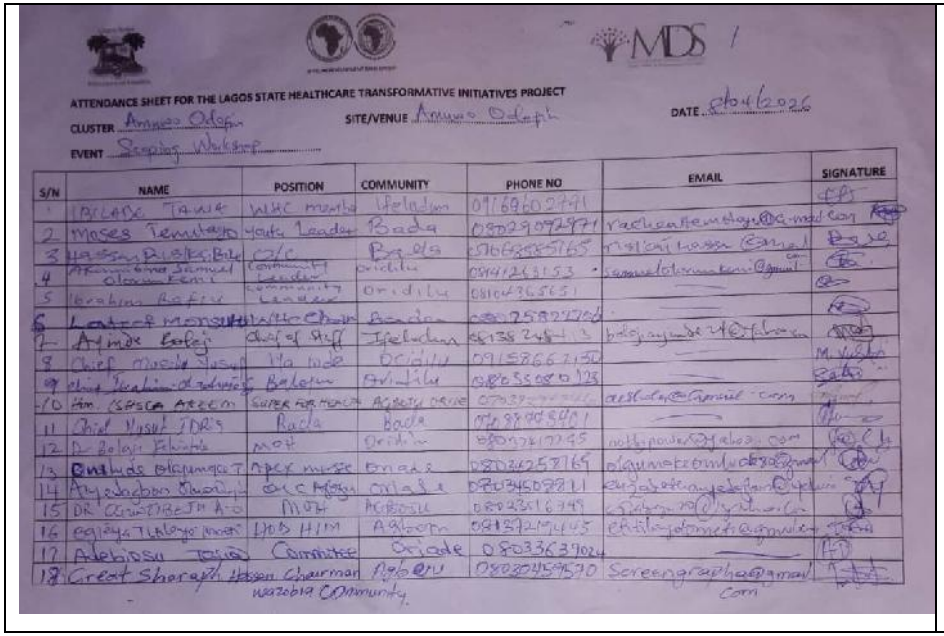
		
		







Appendix 7.2: Attendance Sheet



ATTENDANCE SHEET FOR THE LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVES PROJECT

CLUSTER Amuwo Odofin SITE/VENUE Amuwo Odofin DATE 8/04/2026

EVENT Scoping Workshop

S/N	NAME	POSITION	COMMUNITY	PHONE NO	EMAIL	SIGNATURE
1	[illegible]	WHC member	Ifeladun	07169027491		
2	Moses Temitayo	Youth Leader	Bada	08029092971		
3	[illegible]	C/C	Bajulaiye	07068585165		
4	[illegible]	Community Leader	Oridilu	09442263153		
5	Ibrahim Bafiu	Community Leader	Oridilu	08104736561		
6	[illegible]	WHC Chairman	Bada	08025892706		
7	Ajimobi Bolaji	Chief of Staff	Ifeladun	08138248113		
8	Chief Musibau Yusuf	Ward Head	Oridilu	09158662150		
9	[illegible]	Baloguns	Ayilulu	08055080173		
10	Hon. (SPSCA) Azeem	SUPER FOR HEALTH	Agbotu Oke	07039[illegible]	[illegible]	
11	Chief Yusuf IDRIS	Bada	Bada	08098088401		
12	Dr Bolaji Ekundayo	MOH	Oridilu	08037617745		
13	Emmanuel Olayinka	Apex Nurse	Emada	08026258769		
14	Ajayiobon Olaoluwa	CHC Agbotu	Orisale	08134509811		
15	DR Oluwabusi A-O	MOH	Agbotu	08033616749		
16	Ogunleye Titilayo Imani	DHS HIM	Agbotu	08127214445		
17	Adebisi Tajudeen	Committee	Orisade	08033637024		
18	Great Sheraph Hasan	Chairman Nigeria Community	Nigeria	08030459570	Screengraphe@gmail.com	

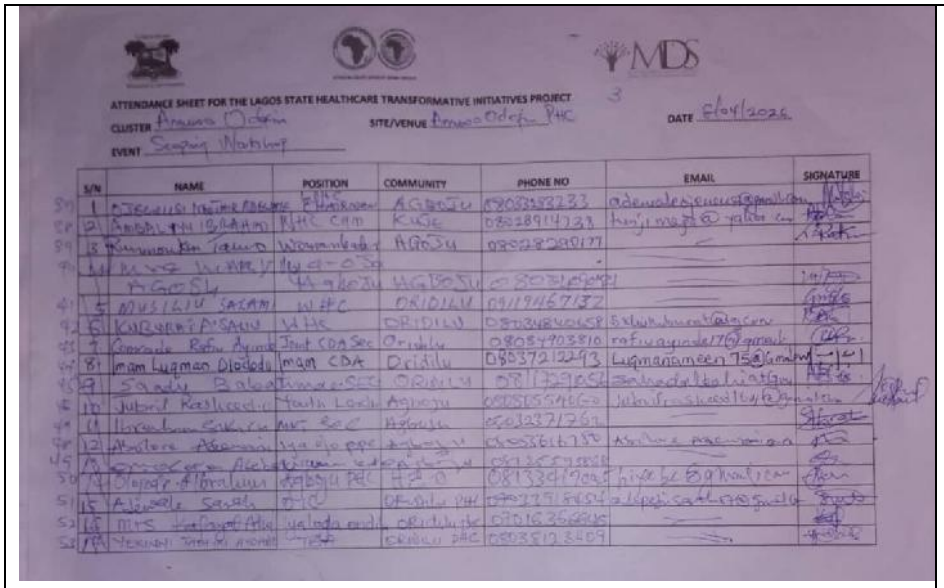


ATTENDANCE SHEET FOR THE LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVES PROJECT

CLUSTER Amuwo Odofin SITE/VENUE Amuwo Odofin PHC DATE 8/04/2026

EVENT Scoping Workshop

S/N	NAME	POSITION	COMMUNITY	PHONE NO	EMAIL	SIGNATURE
19	Olaoluwa Akinlemi	Health attend	Ifeladun	08034517014	—	
20	Nafolabomi Elizabeth	Health attn	Ifeladun	08034449938	—	
21	Kareem Rafiu	Ayanwo Pilc	Agbotu	08051314172	—	R
22	Lawal Lasisi	Health Attend	Agbotu	09027166620	—	
23	Sherifi Simbiat A	PCHEW	Agbotu	08037666282	Simbiatsherifi@gmail.com	
24	Bose Afonja	LG HC	Agbotu	08021479649	—	
25	Adammola Fatai	WHC	Ifeladun	09033344126	—	
26	ESITOPE HANNAH	PCHO	Kiltie	08026203102	[illegible]	
27	Mgbeyegbu Ogbuiyi	Ambulance Driver	Agbotu	08033638015	[illegible]	
28	[illegible]	Ambulance Driver	Ifeladun	08059[illegible]	—	
29	Hammed Bunmi Adisa	WHC	Kuku	07034336787	—	
30	Akande S Ogunbiyi	Community Development Officer	Agbotu	08060[illegible]	[illegible]	
31	Ibrahim Muhammed	WHC	Agbotu	09060407882	[illegible]	
32	Issa Ismail	WHC	Agbotu	08033397465	—	
33	Olaniyi David B.	Agric Officer	Ifeladun	07037765999	Olaniyidavid4@gmail.com	
34	Tinuade Sanusi	Assistant Director	Ipaja Agbotu	08[illegible]	[illegible]	
35	Basak Bisiriyat	Youth Leader	Ifeladun	08012154[illegible]	—	
36	Taiwo Bolajoko	WHC	Ifeladun	07060[illegible]	—	

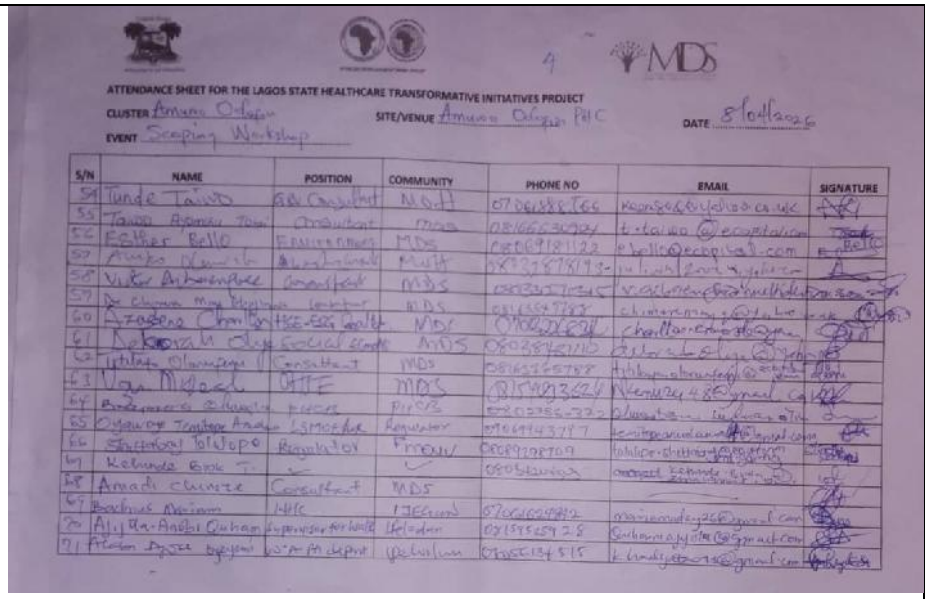


ATTENDANCE SHEET FOR THE LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVES PROJECT

CLUSTER Amuwo Odofin SITE/VENUE Amuwo Odofin PHC DATE 8/04/2026

EVENT Scoping Workshop

S/N	NAME	POSITION	COMMUNITY	PHONE NO	EMAIL	SIGNATURE
1	[illegible]	[illegible]	AGBOJU	08083382233	[illegible]	
2	[illegible]	PHC CAM	KOJE	08038914733	[illegible]	
3	[illegible]	Womenhealth	AGBOJU	08028280177		
4	[illegible]	[illegible]	[illegible]	[illegible]		
5	[illegible]	[illegible]	AGBOJU	[illegible]		
6	MUSLIU SARAKI	WHC	ORIDILU	09119467137		
7	KUKOYI AISAH	VHC	ORIDILU	[illegible]	[illegible]	
8	Comrade Rotu Ayuba	Joint CDA Sec	Oridilu	08054703810	rotuayuba1760@gmail.com	
9	Mam Lugman Dlodedu	Mam CDA	Dridilu	08037212293	Lugmanameen75@gmail.com	
10	Saady Babatunde	CDA	ORIDILU	08117390562	[illegible]	
11	Jubril Kashimawo	Youth Leader	Agboju	08035597660	[illegible]	
12	Ibrahim Sakiru	MKT Sec	Agbolu	08032371767		
13	Abidoye Abosede	[illegible]	[illegible]	[illegible]	[illegible]	
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
15	Olajide Abiodun	AGBOJU PHC	[illegible]	08133017904	[illegible]	
16	Alewole Sarafa	CHO	OR-Dilu PHC	08037158654	[illegible]	
17	MRS [illegible]	[illegible]	OR-Dilu PHC	07016366845		
18	YEKINNI [illegible]	[illegible]	ORIDILU PHC	08035193409		

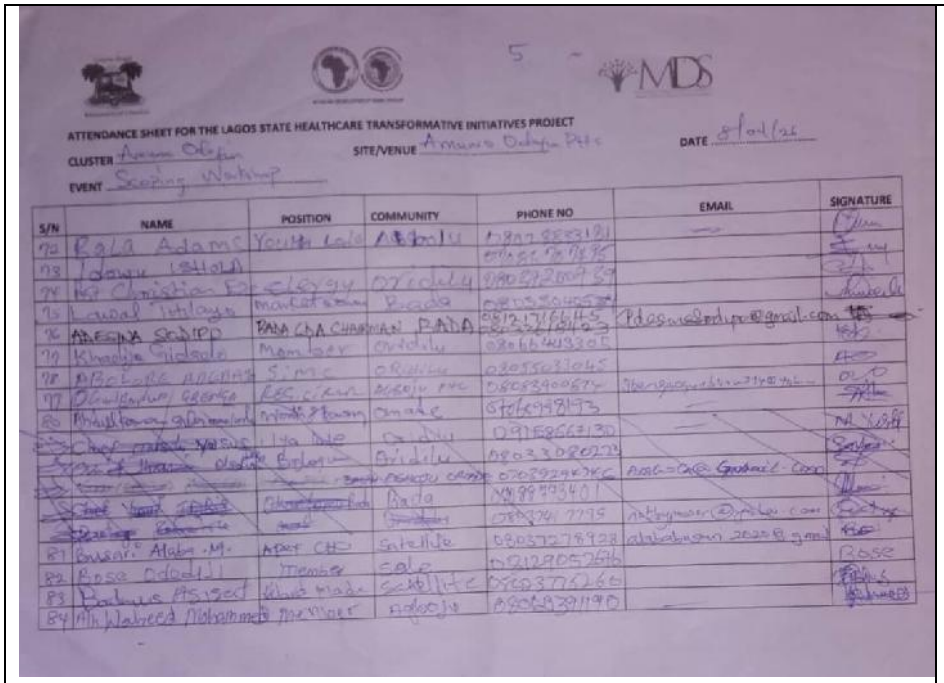


ATTENDANCE SHEET FOR THE LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVES PROJECT

CLUSTER Amuwo Odofin SITE/VENUE Amuwo Odofin PHC DATE 8/04/2026

EVENT Scoping Workshop

S/N	NAME	POSITION	COMMUNITY	PHONE NO	EMAIL	SIGNATURE
54	Tunde Taiwo	GIS Consultant	MDS	07061886766	[illegible]	
55	Taiwo Asimiyu Tom	Consultant	MDS	08166630924	[illegible]	
56	Esther Bello	Environmen	MDS	08109121122	[illegible]	
57	Amuko Olamide	[illegible]	MDS	09039781939	[illegible]	
58	Victor Aibomhore	Consultant	MDS	08033177345	[illegible]	
59	[illegible]	[illegible]	MDS	[illegible]	[illegible]	
60	Azabon Christopher	Health worker	MDS	[illegible]	[illegible]	
61	Deborah [illegible]	Social scientist	MDS	08028421110	[illegible]	
62	[illegible]	Consultant	MDS	08163265788	[illegible]	
63	Vera Mgbeh	CHTE	MDS	08154973226	[illegible]	
64	[illegible]	[illegible]	MDS	08102385-332	[illegible]	
65	Ogunrayo Temitope Amaka	Esmoefoe	Regulator	08169443777	[illegible]	
66	Shittabey Tolujope	Regulator	AMOLW	08089708709	[illegible]	
67	Kehinde Bode T.	[illegible]	[illegible]	08056[illegible]	[illegible]	
68	Amadi chinze	Consultant	MDS	[illegible]	[illegible]	
69	Bashirus Akinsan	LGHC	LCDC [illegible]	07061054842	[illegible]	
70	Ali Ma-Anabi Olukayode	Supervisor Ad World	Ibefadun	07155559728	[illegible]	
71	Akeem Ayoola Ayegoni	W-A-H dept	Ibefadun	07035134515	[illegible]	



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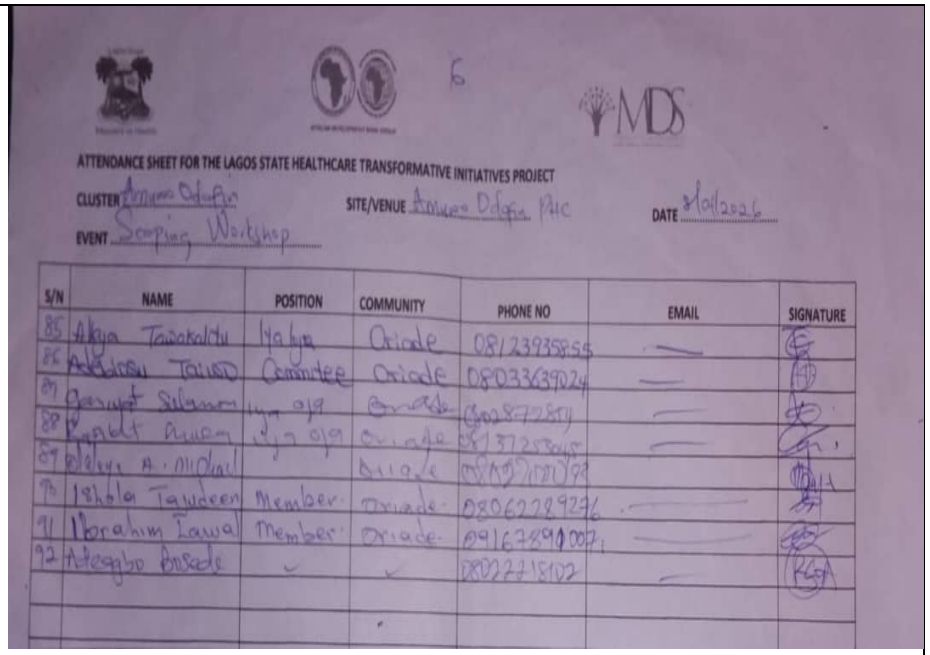
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ATTENDANCE SHEET FOR THE LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVES PROJECT

CLUSTER Aremo Odofin SITE/VENUE Aremo Odofin PHC DATE 8/04/26

EVENT Scoping Workshop

S/N	NAME	POSITION	COMMUNITY	PHONE NO	EMAIL	SIGNATURE
73	Rala Adams	Youth Lead	Abolu	08078883121	—	
74	[illegible]			[illegible]		
75	[illegible]	Clergy	Orodelu	08052820078		
76	[illegible]	Matron	Ikeja	[illegible]		
77	Lawal Ishaya	PARA CDA CHAIRMAN	PARA	08137166445	Pdasmedia@gmail.com	
78	ADESINA SODIQ	PARA CDA CHAIRMAN	PARA	[illegible]		
79	Khadija Sidiqu	Member	Orodelu	08066403305		
80	[illegible]	Sime	Orodelu	08055831645		
81	[illegible]	[illegible]	Aremo PHC	08058900574	[illegible]	
82	[illegible]	[illegible]	[illegible]	[illegible]	—	
83	[illegible]	Iya Ile	Orodelu	09158563130	—	
84	[illegible]	[illegible]	Orodelu	08033080223		
85	[illegible]	[illegible]	[illegible]	07089296376	[illegible]	
86	[illegible]	[illegible]	Bada	08099993401		
87	[illegible]	[illegible]	[illegible]	08034917779	[illegible]	
88	Buseri Alaba M.	APER CHO	Satellite	08037278928	alababuseri2020@gmail.com	
89	Rose Odedeji	Member	Sele	08129052616		Rose
90	Rabiu Asiyat	Ward Mobilizer	Satellite	07037052660		
91	Alh Waheed Mohammed	Member	Agbogbo	08058391190	—	



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MDS

ATTENDANCE SHEET FOR THE LAGOS STATE HEALTHCARE TRANSFORMATIVE INITIATIVES PROJECT

CLUSTER Aremo Odofin SITE/VENUE Aremo Odofin PHC DATE 8/04/2026

EVENT Scoping Workshop

S/N	NAME	POSITION	COMMUNITY	PHONE NO	EMAIL	SIGNATURE
85	Akiya Tawakaldu	Iya Aya	Oriade	08123935855	—	
86	[illegible] Taiwo	Committee	Oriade	08033639024	—	
87	Gbenga Sulaimon	Iya Olo	Oriade	08028-72854	—	
88	Rapelt Ajuwon	Iya Olo	Oriade	08137258915	—	
89	Oloye A. Michael		Oriade	08039207093		
90	Ishola Tawdeen	Member	Oriade	08062289276		
91	Ibrahim Lawal	Member	Oriade	09167891007		
92	Ategbo Bisade			08022718102		

Appendix 8: FMEnv Field Attestation Register

Project: Lagos State Health Infrastructure Project (LSHIP) – (Group 1)

Dates of Field Work: 1-10 April 2026

Purpose: To document the participation and oversight of Federal Ministry of Environment (FMEnv) officials during the field data gathering and stakeholder engagement activities.

Attesting Officials: see attached below:

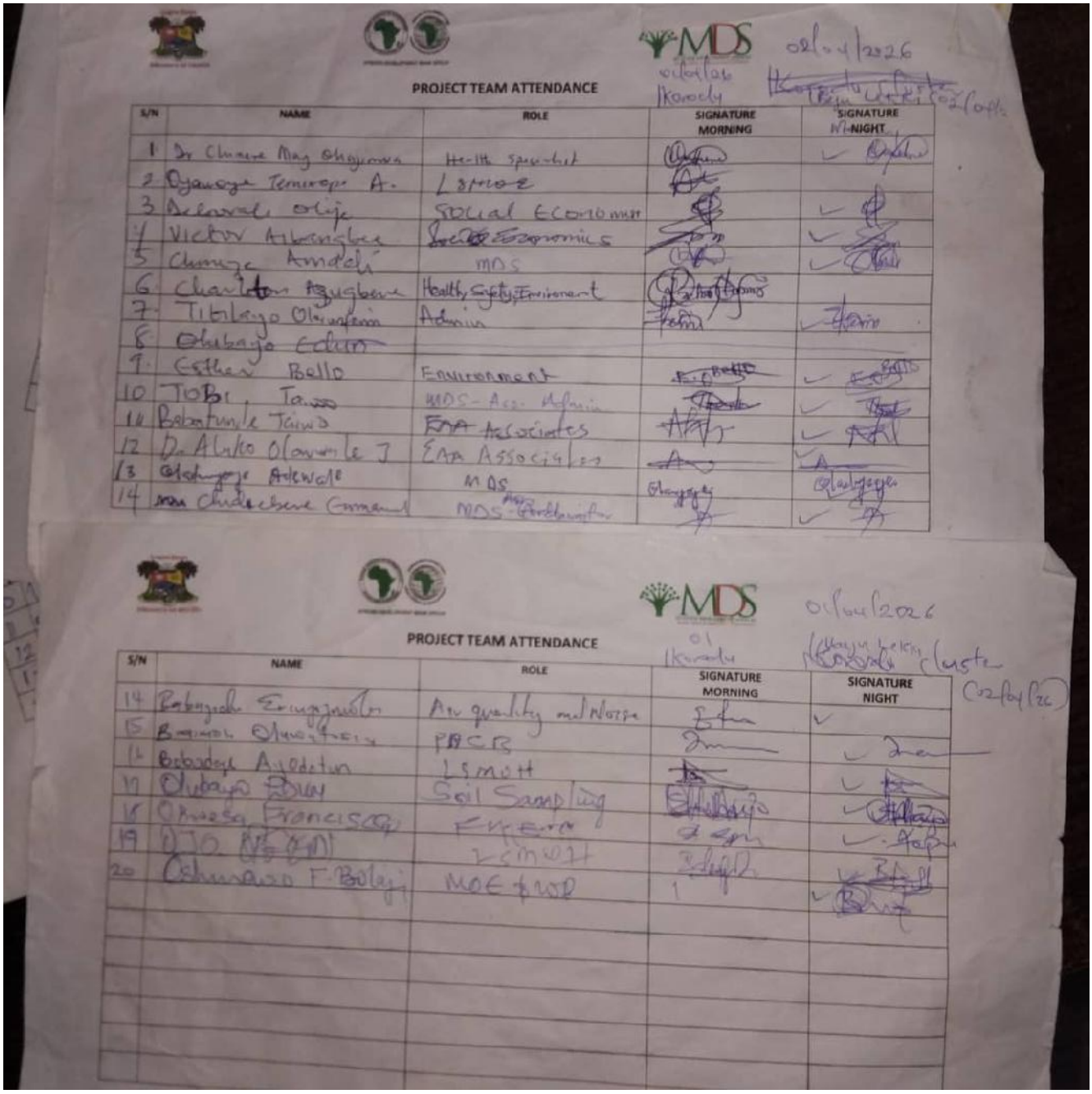
S/N	Name	Position	Signature	Date
1	Okwesa Francesca	FMEnv., Abuja		
2	Adenaike Olubunmi	FMEnv Lagos Office, (Zonal Director)		
3	Oshimowo T. Bolaji	Lagos State Ministry of Environment & Water Resources		
4	Oyawoye Anuoluwa	Lagos State Ministry of Environment & Water Resources		
5	Shittaboy Tolulope	FMEnv, Zonal Office Lagos		
6	Kehinde Biok T	FMEnv, Zonal Office Lagos		
7	Eberechukwu E.U	FMEnv, Zonal Office Lagos		
8	Engr. Braimoh	Lagos State Primary Healthcare Board		

Project Proponent / Consultant Signatories:

Name	Position	Signature	Date
[Name]	ESIA Lead Consultant, MDS		
[Name]	Project Manager, PIU		

Declaration: The undersigned confirm that the field data gathering and stakeholder engagement activities for the ESIA were conducted in accordance with FMEnv guidelines and AfDB ISS requirements.

Position	Signature	Date
ESIA Lead Consultant		
FMEnv Representative (Abuja)		
FMEnv Representative (Lagos Zonal Office)		
PIU Project Manager		



PROJECT TEAM ATTENDANCE

02/04/2026

S/N	NAME	ROLE	SIGNATURE MORNING	SIGNATURE NIGHT
1	Dr Chinere May Ohagwuwa	Health Specialist		
2	Oyawoye Temitope A.	Lawyer		
3	Adewale Olije	Social Economist		
4	Victor Akhenglee	Social Economics		
5	Chinaza Amadi	MDS		
6	Charlton Agugbene	Health Safety Environment		
7	Titilayo Olawuyemi	Admin		
8	Olubayo Edun			
9	Esther Bello	Environment		
10	TiOBi Ta...	MDS - Acc. Admin		
11	Babatunde Taiwo	EAA Associates		
12	Dr Alako Olawunmi J	EAA Associates		
13	Olatunji Adewale	MDS		
14	Chukwuebuka Emmanuel	MDS Environmentalist		

01/04/2026

PROJECT TEAM ATTENDANCE

S/N	NAME	ROLE	SIGNATURE MORNING	SIGNATURE NIGHT
14	Babajide Emmanuel	Air quality and Noise		
15	Bamidele Oluwafemi	PACES		
16	Babadeye Ayodeji	Ismott		
17	Olubayo Edun	Soil Sampling		
18	Okwesa Francisca	Ismott		
19	[illegible]	Ismott		
20	Oluwaseun Temitope Bolaji	MDE/FMP		

Appendix 9: Traffic Management Plan (TMP)

A. Purpose

This Traffic Management Plan (TMP) ensures the safe and orderly movement of vehicles, workers, and community members during the construction and refurbishment of the four PHC facilities in the **Group 1 Axis (**Agboju, Oridilu, Bada, and Ogbomoshotedo**)**.

B. Traffic Impact by Site

Site	Baseline Traffic (AADT)	Construction Traffic (Peak)	Risk Level
Agboju PHC	2,000–5,000	10–20 vehicle trips/day	Medium-High
Oridilu PHC	500–1,000	10–20 vehicle trips/day	Medium-High
Bada PHC	<500	5–10 vehicle trips/day	Low-Medium
Ogbomoshotedo PHC	<500	5–10 vehicle trips/day	Low-Medium

C. Mitigation Measures

1. Delivery Scheduling

- Deliver materials between **9:00 AM and 4:00 PM** (avoiding peak commuter hours: 7:00 AM – 9:00 AM and 5:00 PM – 7:00 PM).
- Schedule major concrete pours and heavy deliveries during low-traffic periods.
- Coordinate closely with local authorities regarding any temporary road restrictions or closures.

2. Signage and Communication

- Install clear warning and directional signs **200m** before construction entrances.
- Post prominent speed limit signs (**30 km/h zones**) surrounding all work sites.
- Display construction schedule notices in prominent community locations across Agboju, Oridilu, Bada, and Ogbomoshotedo.
- Utilize variable message boards where feasible to alert motorists.

3. Traffic Control

- Deploy trained professional traffic marshals at all site entry and exit points.

- Use stop/go paddles or portable traffic control lights where single-lane operations are necessary.
- Maintain clear sightlines at all access points by eliminating visual obstructions.
- Provide safe, marked crossing points for pedestrians and school children.

4. Access Management

- Maintain unhindered access to all nearby residential homes and commercial businesses.
- Provide clear alternative routes and detour signage where roads must be temporarily narrowed or closed.
- Ensure emergency vehicle access is prioritized and maintained at all times.
- Install temporary footpaths or walkways where pedestrian pathways are disrupted.

5. Worker Transport

- Provide designated, organized parking areas for worker vehicles off public thoroughfares.
- Encourage carpooling and shuttle services to minimize vehicle footprint.
- Strictly separate worker vehicle entry gates from heavy material delivery routes.
- Enforce a **zero-parking policy** on surrounding public roads.

6. Emergency Access

- Maintain unobstructed emergency corridors for ambulances and fire trucks.
- Designate and clearly sign emergency access routes around each facility.
- Provide up-to-date site layout maps to local emergency services.
- Train all security and traffic personnel on emergency response and vehicle prioritization procedures.

D. Monitoring

Indicator	Target	Frequency	Responsible Party
Traffic incidents	Zero	Daily	Site Supervisor
Signage compliance	100%	Weekly	HSE Officer
Speed limit compliance	100%	Weekly	Security Lead
Community complaints	Resolved ≤ 14 days	Ongoing	CLO
Emergency access	Maintained clear	Daily	Site Supervisor

E. Contact List for Traffic Management

Role	Name	Phone Number

Site Traffic Marshal (Agboju)	[Name]	[Phone]
Site Traffic Marshal (Oridilu)	[Name]	[Phone]
Site Traffic Marshal (Bada)	[Name]	[Phone]
Site Traffic Marshal (Ogbomoshotedo)	[Name]	[Phone]
Amuwo Odofin LGA Traffic Department	[Name]	[Phone]
LASEMA Emergency	—	112

Appendix 10: Laboratory QA/QC Documentation

10A: Chain-of-Custody Forms (Completed forms for all samples)

10B: Laboratory Accreditation Certificate (FMEnv Certificate No. FMEnv/LAB/014)

10C: Equipment Calibration Certificates

- Aeroqual Series 500 (Calibration date: 20-22 February 2026)
- Extech 407780 Sound Level Meter (Calibration date: 22 February 2026)
- Kestrel 5500 Weather Meter (Calibration date: 20 February 2026)
- PCSTestr 35 Multi-parameter Meter (Calibration date: 22 February 2026)
- GPS Handheld Units (Calibration date: 23 February 2026)

10D: Analytical Plot-Outs and Laboratory Reports

- Air quality chromatograms and spectra
- Water quality analytical sheets
- Soil quality analytical sheets
- Microbiological culture plates (photographs)

10E: Laboratory Attestation Form (Signed by Bato Chemical Laboratories Limited)

120F: Field Attestation Register (Signed by FMEnv officials - also provided as Appendix 8)

Appendix 11 – Code of Conduct for Gender-Based Violence (Full Text)

LAGOS HEALTHCARE TRANSFORMATIVE INITIATIVE PROJECT (LHTIP) CODE OF CONDUCT FOR WORKERS AMUWO ODOFIN AXIS FACILITIES

I, the undersigned, acknowledge that I am working on the LHTIP Amuwo Odofin **Axis** facilities, which is financed by the African Development Bank (AfDB) and implemented by the Lagos State Ministry of Health (LSMoH). I understand that GBV/SEA/SH is strictly prohibited, and violations will result in serious consequences, including termination and legal prosecution.

I AGREE TO THE FOLLOWING:

1. Professional Conduct

- I will treat all community members, colleagues, and supervisors with respect and dignity.
- I will follow all safety rules and wear required PPE at all times.
- I will report any safety hazards, incidents, or GBV/SEA/SH concerns to my supervisor or the GRM.

2. Prohibited Behaviours (Zero Tolerance)

- No sexual harassment – I will not make unwelcome sexual advances, comments (jokes, whistling, catcalling), gestures, or physical contact.
- No sexual exploitation or abuse – I will not exchange money, goods, jobs, or any form of payment or favour for sex.
- No sexual activity with minors – I understand that any sexual activity with a person under 18 years of age is prohibited and is a criminal offence (statutory rape) under Nigerian law, regardless of consent.
- No forced or coerced sexual activity – I will not use force, threats, intimidation, or coercion to obtain sex.
- No intimate relationships with community members (where there is a power imbalance – e.g., supervisor with community woman seeking employment). Consensual relationships in the workplace (between peers) are permitted but must be disclosed to avoid conflict of interest.
- No fighting, intimidation, violence, or threats of violence against any person.
- No alcohol or drug use on site or during working hours (including lunch breaks). Alcohol or drug use that impairs judgment and leads to GBV is prohibited.

- No discrimination based on gender, ethnicity, religion, disability, HIV status, pregnancy, marital status, age, or political opinion.
- No bullying – I will not engage in physical, verbal, or psychological bullying.

3. Community Interaction

- I will not enter community members' homes without permission.
- I will not photograph or film community members (especially women and girls) without their explicit consent.
- I will not loiter around schools, markets, or other places where women and girls gather.
- I will respect local customs and traditions (e.g., dress modestly, avoid public displays of affection).

4. Reporting Obligations

- I will report any GBV/SEA/SH incident that I witness or become aware of (by another worker or community member) to the GRM (hotline, suggestion box, female focal point, or my supervisor).
- I understand that failure to report a known incident may result in disciplinary action.

5. Sanctions for Violations

I understand that violations of this Code of Conduct will result in sanctions, up to and including:

- Verbal warning (minor, first-time violation)
- Written warning (repeat minor violation)
- Suspension (serious violation – e.g., sexual harassment)
- Termination (gross violation – e.g., sexual exploitation or abuse, sexual activity with minor)
- Legal prosecution (criminal offences – e.g., rape, sexual activity with minor, assault)

6. Survivor-Centered Response

I understand that any survivor of GBV/SEA/SH has the right to:

- Confidentiality (their name will not be disclosed without consent)
- Safety (no retaliation)
- Respect (no victim-blaming, no judgment)
- Access to medical, psychosocial, legal, and shelter services (referral pathway)
- No requirement to report to police (if they choose not to)

7. Acknowledgment

I have read (or had read to me) and understood this Code of Conduct. I agree to abide by it. I understand that violation may result in termination and legal prosecution.

Field	Information
Full Name (print)	_____
Signature	_____
Date	_____
Position	_____
Employer (Contractor)	_____
Witness (name, signature)	_____

Distribution: Original to worker, copy to Contractor E&S Officer, copy to PIU.

Appendix 12 – General Environmental Management Conditions for Construction Contracts

General Environmental Management Conditions by Project Phase

Phase	Environmental Aspect	Management Condition / Requirement	Responsible Party	Compliance Reference
Pre-construction				
Pre-construction	Environmental Permits	Obtain all necessary permits from LASEPA, NESREA (an agency under FMEnv), and Lagos State Physical Planning Permit Authority before mobilisation.	Contractor	LASEPA Regulations 2021; FMEnv EIA Guidelines
	Environmental Impact Assessment (EIA)	For projects meeting EIA thresholds, submit an Environmental Impact Assessment report to FMEnv's EIA Department for review and approval before	Contractor	FMEnv EIA Act Cap E12 LFN 2004

		construction begins.		
	Environmental Management Plan (EMP)	Submit a site-specific EMP for each PHC cluster or for all 29 centres, covering waste, dust, noise, water, and spills. The EMP shall be reviewed in line with FMEnv's Environmental Assessment (EA) reporting guidelines.	Contractor	Contract Clause 2.2; FMEnv EA Guidelines
	Baseline Survey	Conduct a baseline environmental survey (noise, air quality, and existing waste) at each PHC location before works begin.	Contractor / Consultant	IFC EHS Guidelines; FMEnv Standards
	Community Engagement	Notify neighbouring communities and PHC staff of construction	Contractor / Employer	Lagos State Environmental Noise Regulations

		schedule, duration, and potential nuisances.		
	Waste Management Plan	Submit a waste management plan identifying approved disposal sites for inert, non-hazardous, and hazardous waste.	Contractor	NESREA (FMEnv) Regulations
	Spill Response Plan	Submit a site-specific spill prevention and response plan, including inventory of fuel/chemicals to be stored.	Contractor	NESREA (Chemical Mgmt) Regulations
	Training Plan	Submit an environmental induction training plan for all site personnel.	Contractor	Contract Clause 2.4
	Grievance Mechanism	Establish and publicise a community grievance mechanism (phone number,	Contractor	World Bank ESF / Good Practice

		logbook) before mobilisation.		
Construction				
Construction	Dust Control	Spray water on exposed soils and unpaved access roads at least twice daily during dry season; cover stockpiles.	Contractor	LASEPA Air Quality Guidelines; FMEnv National Air Quality Standards
	Noise Control	Restrict loud works to 7:00 AM – 6:00 PM; use silenced equipment; notify community before high-noise activities. Monitor noise levels to comply with LASEPA and FMEnv standards.	Contractor	LASEPA Noise Regulations; FMEnv Noise Standards
	Water Protection	No discharge of concrete slurry, fuel, or untreated wastewater into drains or water bodies.	Contractor	National Water Resources Regulations; FMEnv Water Quality Guidelines

	Solid Waste Management	Segregate waste at source: inert (blocks, concrete), recyclable (metal, plastic), and general waste; dispose only at LASEPA-approved sites. FMEnv's National Plastic Waste Recycling Programme guidelines shall be followed for plastic waste.	Contractor	NESREA (Solid Waste) Regulations; FMEnv Plastic Waste Policy
	Hazardous Waste Management	Store used oil, paint thinners, and chemical containers in sealed, bunded, labelled containers; dispose via NESREA-licensed contractor.	Contractor	NESREA (Hazardous Waste) Regulations
	Spill Response	Maintain spill response kit on site; report any	Contractor	Contract Clause 3.5; NESREA Regulations

		spill ≥5 litres to Engineer within 2 hours. Major spills shall also be reported to FMEnv through NESREA .		
	Topsoil Management	Strip and stockpile topsoil separately for later landscaping; protect stockpiles with silt fences.	Contractor	FMEnv Land Degradation Guidelines
	Tree / Vegetation Protection	Do not clear trees ≥30 cm diameter without Engineer's approval; demarcate clearing limits.	Contractor	Lagos State Tree Preservation Regulations; FMEnv Forestry Guidelines
	Sanitation	Provide adequate toilets (1 per 15 workers) and covered bins for domestic waste from worker camps.	Contractor	Public Health Law
	Medical Waste (Refurbishment)	Do not handle existing medical waste; notify	Contractor / Employer	NESREA (Medical Waste) Regulations (FMEnv)

		Employer for removal by authorised medical waste contractor before refurbishment begins.		
	Community Safety	Fence deep excavations; lock hazardous material storage areas; maintain access to active PHC entrances.	Contractor	Contract Clause 4.3
	Traffic Management	Provide flagmen and signage at PHC access points; avoid haulage through narrow residential streets where possible.	Contractor	Lagos State Traffic Regulations
	Environmental Reporting	Submit monthly EMP implementation report, waste tracking log, and grievance log to Engineer. Copies shall be retained	Contractor	Contract Clause 5; FMEnv EAR Guidelines

		for potential FMEnv audit.		
Operational				
Operational	Environmental Audit	Within 12 months of handover, the Employer shall conduct a post-construction Environmental Audit Report (EAR) and submit to FMEnv's EIA Department if required by permit conditions.	Employer	FMEnv Environmental Audit Guidelines
	Waste Management (PHC Operations)	After handover, the PHC operator shall segregate general waste from infectious medical waste and use NESREA-licensed medical waste disposal contractors.	Employer / PHC Operator	NESREA (Medical Waste) Regulations (FMEnv)
	Wastewater Management	Ensure that any new or	Employer	Lagos State Water Regulations;

		refurbished PHC has functional septic tank / soakaway system or connection to public sewer.		FMEnv Water Quality Standards
	Air Quality (Generator)	Standby generators shall be serviced regularly; located away from patient and community areas; exhaust directed upward. Emissions shall comply with FMEnv National Air Quality Standards.	Employer	LASEPA Air Quality Guidelines; FMEnv Air Quality Standards
	Noise (Generator / Equipment)	Generator sets shall be acoustically enclosed or placed in soundproofed rooms; noise not to exceed 55 dB(A) at night at nearest residence.	Employer	LASEPA Noise Regulations; FMEnv Noise Standards

	Hazardous / Pharmaceutical Waste	Expired drugs and pharmaceutical waste shall be stored separately and incinerated or disposed of by a NESREA-licensed contractor.	PHC Operator	NESREA (Pharmaceutical Waste) Regulations (FMEnv)
	Community Relations	Maintain a grievance log for community complaints about PHC operations (noise, odour, waste).	PHC Operator	LASEPA Guidelines
Decommissioning				
Decommissioning	Decommissioning Plan	If any PHC is decommissioned in the future, a site-specific decommissioning plan shall be submitted to LASEPA and FMEnv (through NESREA) 60 days prior to works.	Future Contractor / Employer	NESREA (Decommissioning) Regulations; FMEnv Guidelines

	Hazardous Materials Inventory	Before demolition, survey for asbestos, lead paint, mercury (from old thermometers), and other hazardous materials.	Future Contractor	IFC EHS Guidelines; NESREA Regulations
	Asbestos Handling	If asbestos-containing materials are found, engage a NESREA-licensed asbestos contractor for removal and disposal.	Future Contractor	NESREA (Asbestos) Regulations (FMEnv)
	Demolition Waste	Concrete, blocks, and steel shall be segregated; inert waste sent to recycling facility or LASEPA-approved landfill.	Future Contractor	NESREA (Solid Waste) Regulations
	Hazardous Waste Disposal	All hazardous waste (oils, chemicals, pharmaceuticals)	Future Contractor	NESREA (Hazardous Waste) Regulations

		shall be disposed of through a NESREA-licensed hazardous waste contractor with manifests.		
	Site Restoration	Remove all foundations, floors, and underground tanks (if any); backfill and revegetate or pave as required by land use plan.	Future Contractor	FMEnv Land Restoration Guidelines
	Final Environmental Report	Submit a closure report to LASEPA, FMEnv (through NESREA), and the Employer including waste manifests, soil test results (if contamination suspected), and confirmation of restoration.	Future Contractor	LASEPA Regulations; FMEnv Closure Reporting Guidelines

Appendix 13 – Socio-Economic Data Collection Instruments

SOCIO-ECONOMIC SURVEY QUESTIONNAIRE

Environmental and Social Impact Assessment (ESIA) – Health Facilities, Lagos State

SECTION A: IDENTIFICATION AND LOCATION (Baseline Data)

Questionnaire ID: _____ Date: _____

Enumerator Name: _____

LGA: _____

Ward/Community: _____

Street/Area Name: _____

GPS Coordinates: _____ _____

Settlement Type:

Urban Formal _____

Urban Informal (Slum) _____

Peri-Urban _____

SECTION B: RESPONDENT DEMOGRAPHICS

Gender: Male : _____ Female _____

Age: _____

Marital Status: Single [ ] Married [ ] Widowed [ ] Divorced [ ]

Education Level:

None [ ] Primary [ ] Secondary [ ] Tertiary [ ] Vocational [ ]

Occupation: _____

Length of Stay in Community: <1 year [ ] 1–5 years [ ] >5 years [ ]

SECTION C: HOUSEHOLD SOCIO-ECONOMIC PROFILE (ESS1)

Household Size: _____

Vulnerable Members (tick all that apply):

Children under 5 [ ]

Elderly (60+) [ ]

Persons with Disabilities [ ]

Pregnant/Nursing Mothers - [ ]

Chronically iIl … [ ]

Housing Type:

Permanent -- [ ]

Semi-permanent -- [ ]-

Temporary -- [ ]

Tenure Status:

Owner [ ]

Tenant - [ ]-

Informal/No Title [ ]

Monthly Household Income (₦):

<50,000 ---------- [ ]

50,000–100,000 ---------- [ ]

100,000–200,000 ---------- [ ]-

>200,000 ---------- [ ]

SECTION D: ACCESS TO BASIC SERVICES (ESS1 & ESS4)

ServiceMain Source	Reliability (Good	Fair	Poor
Drinking Water			
Electricity			
Sanitation			
Waste Disposal			

SECTION E: HEALTHCARE ACCESS & UTILIZATION (ESS1 & ESS4)

Nearest Health Facility: Distance: <1 km [ ] 1–5 km [ ] >5 km [ ]

Primary Health Facility Used:

Public ---------- [ ]

Private---------- [ ]

Pharmacy/Chemist ------[ ] -

Traditional [ ]

Average Travel Time to Facility:

<15 mins [ ] 15–30 mins: [ ] , 30–60 mins: -[ ] -, >1 hour: [ ]

Mode of Transport:

Walking……..[ ]

Okada……[ ]

Keke ……[ ]

Bus…….[ ]

Private Car……. [ ]

Key Barriers to Access (tick all):

Cost ……..[ ]

Distance……[ ]

Traffic congestion…….[ ]

Poor road condition……..[ ]

Safety concerns……..[ ]

Facility overcrowding ….[ ]

Average Monthly Health Expenditure (₦): _____

SECTION F: TRAFFIC AND ACCESS CONSTRAINTS

Community Health & Safety)

What is the road condition leading to the nearest health facility?

Good (paved, motorable year-round) [ ]

Fair ……[ ]

Poor (frequent flooding, potholes, inaccessible)….[ ]

Do you experience traffic congestion when accessing healthcare?

Yes (Severe)

Yes (Moderate)

No ( )

Average delay due to traffic:

<15 mins ----------[ ]

15–30 mins ---------[ ] -

30–60 mins ---------[ ]

>1 hour ----------[ ] ----

Are there transport safety risks?

Road accidents ----------[ ]

Reckless driving----------[ ]

Lack of pedestrian walkways --[ ]

Poor street lighting ----------[ ]

Security risks ----------[ ]

Emergency access:

Can ambulances reach your area easily?

Yes ----------[ ]

No ----------[ ]

Sometimes ------[ ]

Key access challenges (open-ended):

SECTION G: COMMUNITY HEALTH AND SAFETY RISKS

Common environmental/public health risks (Tick all that apply):

Flooding ----------[ ]

Poor drainage ----------[ ]

Waste accumulation ……[ ]

Air pollution ……[ ] .

Noise ……[ ] .

Have you experienced any of the following?

Disease outbreaks ----------[ ]

Industrial pollution ----------[ ] ----

Traffic accidents ----------

Perceived risks from proposed health facility:

Increased traffic ----------[ ]

Noise ----------[ ]

Medical waste ----------[ ]

Influx of people----------[ ]

SECTION H: STAKEHOLDER ENGAGEMENT & AWARENESS

Awareness of Project:

Yes ----------[ ]

No ----------[ ]

Source of Information:

Community leaders ----[ ]

Government -------[ ]

Media ----------[ ] -

Others (Specify) ----------

Have you been consulted?

Yes ----------[ ]

No ----------[ ]

Preferred engagement method:

Town hall meetings --------[ ]

Focus group discussions ( )

SMS/Phone ( )

Social media ( )

SECTION I: PROJECT PERCEPTION

Do you support the project?

Yes ( )

No ( )

Undecided ( )

Expected Benefits:

Improved access ( )

Employment ( )

Reduced travel time ( )

Better emergency response ( )

Key Concerns:

Land acquisition ( )

Traffic congestion ( )

Noise ( )

Waste management ( )

SECTION J: GRIEVANCE REDRESS MECHANISM

Awareness of grievance channels:

Yes ( )

No ( )

Preferred reporting channel:

Community leader ( )

Phone hotline ( )

Health facility desk ( )

Suggestion box ( )

Online ( )

Willingness to use GRM:

Yes ( )

No ( )

SECTION K: VULNERABLE GROUPS & INCLUSION

Do vulnerable groups face barriers to healthcare?

Yes ( )

No ( )

Type of barriers:

Cost ( )

Mobility constraints ( )

Discrimination ( )

Cultural factors ( )

SECTION L: SUGGESTIONS & MITIGATION MEASURES

Suggested improvements for health facility planning:……
……
……..

Measures to reduce traffic/access challenges:……
……
……

Measures to enhance community safety:……
……
……

SECTION M: INFORMED CONSENT

Participation is voluntary and confidential

Do you consent?

Yes ( )

No ( )

Signature/Thumbprint: _____

FOCUS GROUP DISCUSSION (FGD) GUIDE

1. FGD SETTING

1.1 Venue Selection

FGDs should be conducted in:

Neutral, safe, and accessible locations within the community (e.g., community halls, health facilities, schools, religious centres)
Locations convenient to participants (markets for traders, waterfront spaces for riverine communities, etc.)
Quiet environments with minimal disruption

1.2 Group Composition

Each FGD should consist of:

- 8–12 participants (optimal for effective interaction)
- Homogeneous groups to encourage free discussion:
- Women (especially caregivers and traders)
- Youth (male/female groups where necessary)
- Elderly persons
- Persons with Disabilities (PWDs)
- Urban poor/informal settlement residents
- Riverine communities

1.3 Language

Conduct discussions in:

- English
- Yoruba
- Nigerian Pidgin

- Use interpreters where necessary

1.4 Duration

- 15–20 minutes per session

1.5 Materials

- FGD guide (this document)
- Notepads and pens
- Audio recorder (with consent)
- Attendance register
- Consent forms

1.6 Facilitation Team

- Lead facilitator (moderator)
- Note-taker/rapporteur
- Community mobilizer (where needed)

2. FGD STRUCTURE

2.1 Introduction (2–5 minutes)

Facilitator should:

- Introduce the team and purpose of the discussion
- Explain the ESIA and project in simple terms
- Assure participants of:
- Confidentiality
- Voluntary participation
- No right or wrong answers
- Obtain informed consent
- Set ground rules:
- Respect for all opinions
- One person speaks at a time

- No interruptions

2.2 Icebreaker Session (2 minutes)

- Ask participants to briefly introduce themselves:
- Name (optional)
- Occupation
- Length of stay in community

2.3 Core Discussion (10– 15 minutes)

(Organized into thematic areas aligned with ESF)

2.4 Wrap-Up and Closing (3 minutes)

- Summarize key points
- Ask if anything was missed
- Provide information on grievance channels
- Thank participants

3. TYPES OF QUESTIONS

Questions should be open-ended, probing, and participatory, grouped into thematic areas:

3.1 COMMUNITY PROFILE & LIVELIHOODS (ESS1)

- Can you describe this community and how long people have lived here?
- What are the main occupations of people here?
- Are there differences in income levels across the community?
- Are there particular groups considered vulnerable? Why?

Probes:

- Migrants?
- Slum dwellers?
- Female-headed households?

3.2 HEALTH-SEEKING BEHAVIOR

- Where do people usually go when they are sick?
- What influences your choice of health facility (public/private/traditional)?
- Are there differences in health-seeking behavior among men, women, and youth?

Probes:

- Cost
- Distance
- Waiting time
- Quality of care

3.3 ACCESS TO HEALTHCARE SERVICES (ESS4)

- What challenges do you face in accessing healthcare facilities?
- How far is the nearest health facility?
- How does traffic or transportation affect access to care?
- Are services affordable?

Lagos-Specific Probes:

- Traffic congestion
- Flooding during rainy season
- Overcrowding in hospitals
- Availability of drugs

3.4 MATERNAL AND CHILD HEALTH (for women groups)

- What challenges do women face during pregnancy and childbirth?
- Do women prefer public or private facilities? Why?
- Are there cultural or financial barriers?

3.5 YOUTH AND ADOLESCENT HEALTH

- What are the common health issues affecting young people here?
- Do youth have access to reproductive health services?
- Are there barriers (stigma, cost, lack of information)?

3.6 VULNERABILITY AND SOCIAL INCLUSION (ESS1 & ESS10)

- Which groups in this community face the most difficulty accessing healthcare?
- How do persons with disabilities access health services?
- Are migrants or informal settlers treated differently?

3.7 PERCEPTION OF EXISTING HEALTH FACILITIES

- What do you think about the current health facilities?
- What are the major problems with these facilities?

Probes:

- Staff attitude
- Waiting time
- Equipment availability
- Cleanliness
- Power/water supply

3.8 PROJECT AWARENESS AND PERCEPTION (ESS10)

- Are you aware of the proposed health facility upgrade/development project?
- What are your expectations from this project?
- What benefits do you think it will bring?

3.9 POTENTIAL IMPACTS OF THE PROJECT

- Positive Impacts
- How will improved health facilities benefit you?
- Negative Impacts
- Are there any concerns about the project?

Probes:

- Construction disturbances (noise, dust)
- Traffic disruptions
- Safety risks
- Increased cost of services

3.10 COMMUNITY HEALTH AND SAFETY (ESS4)

- What safety concerns do you have regarding health facilities?
- How can patient safety be improved?

Probes:

- Infection control
- Emergency response
- Waste disposal

3.11 GRIEVANCE REDRESS MECHANISM (GRM)

- If you have a complaint about a health facility, where do you go?
- Are you aware of any complaint systems?
- How would you prefer to report complaints?

Probes:

- Phone/SMS
- Community leaders
- Facility desks

3.12 RECOMMENDATIONS AND EXPECTATIONS

- What improvements would you like to see in health services?
- What advice do you have for the project team?

4. SPECIALIZED QUESTION ADAPTATIONS BY GROUP

- Women
- Cost of delivery services
- Availability of female health workers
- Cultural/religious considerations
- Urban Poor / Informal Settlements
- Affordability
- Informal providers (chemists, PMVs)
- Distance and transport barriers
- PWDs
- Physical access (ramps, signage)
- Staff attitudes
- Special assistance needs
- Riverine Communities
- Water transport challenges
- Emergency response delays

5. FACILITATION TECHNIQUES

- Use probing questions (“Can you explain further?”)
- Encourage quieter participants
- Avoid leading questions
- Manage dominant participants
- Use real-life examples

6. DOCUMENTATION AND OUTPUTS

- Each FGD should produce:
- Participant profile summary
- Key discussion themes
- Direct quotes (where relevant)

- Major concerns and expectations
- Gender and vulnerability insights

7. ETHICAL CONSIDERATIONS

- Obtain informed consent
- Ensure anonymity in reporting
- Avoid sensitive/personal health disclosures
- Be culturally respectful

Appendix 14: Chance Finds Procedure (CFP)

Lagos State Health Transformative Initiative Project (LHTIP)

1. Purpose and Objective

The objective of this Chance Finds Procedure is to provide clear, step-by-step instructions for project contractors, site supervisors, and workers on how to handle accidental discoveries of cultural heritage, archaeological artifacts, human remains, or structures of historical/religious significance during project excavation and construction works.

This procedure ensures compliance with national heritage laws and international safeguards (such as World Bank / AfDB standards on physical cultural resources) by preventing unauthorized damage, destruction, or removal of historical assets.

2. Scope

This procedure applies to all LHTIP construction, excavation, trenching, demolition, and site-clearing activities across all project axes and primary healthcare facility sites (including Ibereko, Gberefu, Agboyi, and other project locations).

3. Definition of "Chance Find"

A chance find refers to any physical object, structure, artifact, site, or human remains of historical, archaeological, cultural, or religious value that is uncovered unexpectedly during ground-disturbing works. Examples include:

- Pottery fragments, coins, tools, or metal implements.
- Human skeletal remains or burial sites.
- Historic building foundations, old wells, walls, or structural ruins.
- Carved stones, shrines, sacred trees, or ritual objects.

4. Step-by-Step Procedure

Step 1: Immediate Cessation of Work

- In the event of a chance find, the site worker, machine operator, or supervisor must **immediately stop all work, excavation, or heavy machinery operation** within a minimum radius of **10 to 15 meters** of the discovery point.
- Work in other unaffected areas of the site may continue, provided it does not threaten the integrity of the find.

Step 2: Securing the Area

- The Site Supervisor/Contractor's Environmental & Social (E&S) Officer must immediately secure the perimeter using temporary warning tape, fencing, or physical barriers.
- Unauthorized entry, removal, handling, or cleaning of the objects by workers or third parties is strictly prohibited.

Step 3: Notification and Reporting (Within 24 Hours)

- The Contractor's E&S Officer must notify the **Project Implementation Unit (PIU) E&S Safeguards Team** within **24 hours** of the discovery.
- The PIU will formally notify relevant statutory heritage bodies, such as the **National Commission for Museums and Monuments (NCMM)** or the **Lagos State Ministry of Tourism, Arts and Culture**, depending on the nature of the find.

Step 4: Expert Assessment and Inspection

- Qualified cultural heritage specialists, archaeologists, or designated state heritage representatives will be deployed to inspect the site and evaluate the significance of the find.
- Based on expert recommendations, the PIU will determine whether the find requires:
    - Preservation in situ (avoiding the area through minor design shifts).
    - Rescue excavation, cataloging, and controlled salvage by professionals.
    - Release of the area for continued works.

Step 5: Resumption of Work

- Construction and excavation work within the cordoned zone may only resume after:
    - The designated heritage authorities or specialists have granted formal clearance.
    - The PIU issues an official "Notice of Work Resumption" to the contractor.

5. Roles and Responsibilities

Stakeholder	Responsibilities
Site Workers & Equipment Operators	Immediately halt work upon encountering suspicious artifacts, remains, or structures; report to the Site Supervisor.
Contractor E&S Officer	Secure the discovery area, prevent unauthorized access, document the find coordinates/photos, and notify the PIU within 24 hours.
Project Implementation Unit (PIU)	Coordinate with statutory heritage authorities (NCMM/State agencies), mobilize experts for evaluation, and manage stakeholder communication.

Heritage Experts / Authorities	Inspect, authenticate, and determine the preservation, salvage, or clearance requirements for the discovered items.

6. Awareness and Training

- **Induction Training:** All construction workers, supervisors, and subcontractors must undergo brief awareness training during site inductions on how to recognize potential cultural or archaeological assets and understand this CFP.
- **Toolbox Talks:** Periodic safety and environmental toolbox talks must reinforce chance find protocols, particularly during deep excavation or trenching phases.