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Federal Republic of Nigeria

Environmental and Social Systems Assessment

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ABBREVIATIONS AND ACRONYMS

CBO	Community Based Organization
CHEW	Community Health Extension Worker
CSO	Civil Society Organization
DLI	Disbursement-linked Indicators
EMTCT	Elimination of Mother to Child Transmission
EO	Environmental and Social Safety Officer
EIA	Environmental Impact Assessment
ESSA	Environmental and Social Systems Assessment
FEC	Nigerian Federal Executive Council
FGON	Federal Government of Nigeria
FMF	Federal Ministry of Finance
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
HCF	Healthcare Facility
HCW	Health Care Waste
HCWM	Health Care Waste Management
HNP	Health, Nutrition and Population
HPDP2	HIV/AIDS Program Development Project II
HRH	Human Resources for Health
HRITF	Health Results Innovation Trust Fund
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFC	International Finance Corporation
IFMIS	Integrated Financial Management Information System
IGME	Inter-agency Group for Child Mortality Estimation
IPF	Investment Project Financing
ITNs	Insecticide Treated Nets
LGA	Local Government Areas
LSMS	Living Standards Measurement Study
MCBP	Malaria Control Booster Project
MCH	Maternal Child Health
MDGs	Millennium Development Goals
MNCH	Maternal, Neonatal and Child Health
MOH	Ministry of Health
MSS	Midwives Services Scheme
NAFDAC	National Agency for Food and Drug Administration and Control
NBS	National Bureau of Statistics
NDHS	National Demographic and Health Survey
NESREA	National Environmental Standards and Regulation Enforcement Agency
NPHCDA	National Primary Health Care Development Agency
NPopC	National Population Commission of Nigeria
NSHDP	National Strategic Health Development Plan
NSHIP	Nigerian State Health Investment Project
NSHPIC	Nigeria State Health Programmatic Investment Credit Project
PAD	Project Appraisal Document
PAP	Program Action Plan
PBF	Performance-Based Financing

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PDO	Project Development Objective
PDU	Program Delivery Unit
PEFA	Public Expenditure and Financial Accountability
PER	Public Expenditure Review
PforR	Program-for-Results
PHC	Primary Health Care
PhW	Pharmaceutical Waste
PhWM	Pharmaceutical Waste Management
PSHAN	Private Sector Health Alliance of Nigeria
PMTCT	Prevention of mother-to-child transmission of HIV
SDI	Service Delivery Indicators
SOML	Saving One Million Lives
SPHCDA	State Primary Health Care Development Agency
SURE-P-MCH	Subsidy Reinvestment and Empowerment Program, Maternal and Child Health
TA	Technical Assistance
TBA	Traditional Birth Attendant
U5MR	Under 5 Mortality Rate
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHS	Ward Health System
WDU	Waste Disposal Unit
WHO	World Health Organization

Executive Summary

ES.1. The PforR Program

Nigeria has one of the largest stocks of Human Resources for Health (HRH) in Africa but has experienced limited progress on health services delivery in the last decade and low levels of progress in health, nutrition, and population (HNP) outcomes over the same period. To this end, the Federal Government of Nigeria (FGON) instituted/developed the Saving One Million Lives (SOML) program meant to improve the HNP outcomes equivalent to the country's level of wealth. The SOML program is intended for the health sector to contribute to the economic and social development of Nigeria instead of being a drag on growth. The SOML represents a major paradigm shift from focusing on inputs to focusing on results and outcomes and it incorporates innovation as a key enabler of the change in approach to service delivery.

The SOML Program focuses attention on Interventions of Proven Cost-Effectiveness and Impact built on the President's Transformation Agenda and the National Strategic Health Development Plan (NHSDP) 2010 to 2015. It gives renewed priority to a package of high impact, evidence-based, cost-effective health interventions known as the six pillars: (i) maternal, newborn and child health; (ii) childhood essential medicines and increasing treatment of important childhood diseases; (iii) improving child nutrition; (iv) Immunization; (v) Malaria control; and (vi) the Elimination of Mother to Child Transmission (EMTCT) of HIV. The objective is to dramatically improve the coverage of these interventions that currently suffer from poor access and utilization. In addition, to its six "pillars" the SOML program also includes two "enablers": (i) promoting innovation and the use of information and communications technology; and (ii) improving the supply and distribution chain

The PforR program is designed to support the Federal Government of Nigeria (FGON)'s SOML Program initiative aimed at influencing the behavior of States through: (i) collection of robust data on service delivery at community and health facility level and feeding it back to states; (ii) rewarding states for better performance; (iii) provision of technical assistance. Thus States are expected to directly influence service delivery under their jurisdiction. The PforR is expected to channel about 70% of program financing directly to states based on their performance. If a state were to meet the targets for the PforR they would earn about 15-20% of the states' current expenditure through performance payments and this will be sufficient to encourage them to maximize their influence on service delivery.

2. The proposed PforR will provide funds to the FGON based on a set of Disbursement-Linked Indicators (DLIs) chosen, in consultation with government;

i. DLI 1- Increasing Utilization of High Impact Maternal and Child Health Interventions
ii. DLI 2- Increasing Quality of High Impact Maternal and Child Health Interventions.
iii. DLI 3- Improving M&E Systems and Data Utilization
iv. DLI4 - Increasing Utilization and Quality of Maternal and Child Health Interventions Through Private Sector Innovation
v. DLI5 - Increasing Transparency in Management and Budgeting for PHC

The SOML Program is under the supervision of a steering committee (chaired by the Honorable Minister of Health and comprising representatives from the States (commissioners of health), development partners, the Federal Ministry of Finance, and various government organizations involved in the health sector.

Thus SOML-PforR program is placed in the FMOH with a Technical Working Group comprising representatives from various parts of FMOH, namely: Department of Public Health, including , National Malaria Elimination Program (NMEP) and FMOH's AIDS control program (NASCP), Department of Family Health, National Primary Health Care Development Agency (NPHCDA), and the Department of Planning, Research and Statistics.

The Program Management Unit (PMU) for SOML will be in charge of the day-to-day implementation of SOML under the PforR.

Detailed implementation arrangements are outlined in the Program Appraisal Document (PAD).

ES.2. The ESSA Scope and Methodology

3. An Environmental and Social Systems Assessment (ESSA) was undertaken by the Bank team for the Program as per the requirement of the Bank's Operational Policy/Bank Procedure (OP/BP) 9.00. The assessments were carried out through a comprehensive review of relevant government policies, legislations, institutional roles, program procedures and an analysis of the extent these are consistent with Bank's OP/ BP 9.00. Further, actions to address gaps to enhance risk mitigation were identified and detailed. The methodology of the ESSA included analysis of information/data on SOML Programs, field reviews, and consultations with all key stakeholders.

ES. 3 Environmental System

4. The risk screening suggests that the overall environmental impact of the Program is likely to be positive with potentially significant environmental benefits, owing to increasing accountability for results, improved coordination across the health system, as well as strengthening of the health programs. A strong program delivery unit will closely track, troubleshoot, and hold accountable Nigeria's health programs with financial rewards for quality and quantity of services rendered which in turn provides further incentives for improvement, monitoring and higher performance The nature of the program provides opportunities to enhance the sanitation, hygiene and infection control and waste management systems and processes at the health facilities so as to further promote sound public health outcomes, while also ensuring that there are no adverse impacts to the environment. However, improper occupational practices and unsafe handling of infectious waste was identified, albeit minimally, which has the potential to expose health care workers, waste handlers, patients and the community to infection and injuries.

Based on the analysis of the Nigerian regulatory system and previous activities implemented by the FMOH within the WB supported portfolio, the program is not likely to have significant impacts on natural habitats or create environmental pollution, other than the generation of health care waste (medical waste) which is considered a localized impact

ES 3.1 Key Findings

5. The key findings of the ESSA on the environmental system are:

    a. The Legal and Regulatory framework governing the environmental and the health sector is strong in terms of the provisions enlisted for safeguarding the environment. Thus the Program implementing agencies, especially the FMOH operate within a well-defined regulatory system for safeguarding environmental resources and ecologically

significant areas from degradation. The system includes protection of environmental resources, excluding activities that are likely to have significant adverse impacts on eco-sensitive areas, coastal areas and wetlands or degrade the environmental extensively.

b. Generally, Nigeria is considered to have a fairly complete set of environmental regulations and legal instruments even for the SOML program, however consistent implementation remain a challenge, principally due to weak enforcement; inadequate manpower, etc. Strengthening of capacity of the Federal Ministry of Environment EA Department to supporting the program will boost the compliance status of the program.

ES.3.2 Key Program Actions

6. ***Identified Actions***

In order to address the identified environmental impacts, risks and gaps the following key actions have been identified:

i). Exclusion of high risk activities from the Program through early screening and

ii). Strengthening the existing system for environmental management: The Program Action Plan includes an annual assessment of environmental interventions under the Program.

Capacity building of sector institutions on Environmental Management

7. The key elements are the Human resources: The human resources to be positioned in the key sector institutions starting from the first year of the Program are:

i). Key positions to ensure implementation of strengthened environmental rules and procedures for the Program:

ii). Environment Management Function at the PMU level

ES.4. Social System

8. The ESSA reveals that the social impact of the Program is likely to be positive- owing to benefits such as improved health and personal hygiene, effective information dissemination, enhanced community participation, creation of accountable arrangements for service delivery and social audits to promote good governance mechanisms. The program is expected to have significant positive social impact as it will promote improved health outcomes for the citizenry, particularly women and children by strengthening utilization and quality of health care especially for the poorest households in Nigeria. The SOML has a strong focus on poverty and equity which is a key issue in relation to maternal and child health. However, maternal and child health outcomes in Nigeria are poor on average and are especially bad for the poorest two income quintiles. Nevertheless, the PforR shall employ a number of mechanisms to strengthen equity such as Prioritizing Services for Which the Poor are Under-served, prioritizing Primary Health Care Facilities, Greater Support to the Northeast, Northwest and Lagging States, Investment Grants to Poorly Performing States, Ensuring Innovation Focuses on the Poor, Rewarding Improvements in Services and Tracking Progress by Income Quintile.

Analysis of the Nigerian regulatory system shows that the social management systems in Nigeria are not as well developed as those for Environmental management except in the context of land acquisition and involuntary resettlement, which are not applicable to this Program. However, this lack of targeted social management provides an opportunity for the Federal, State and local governments and the World Bank via the PforR to establish objectives, systems and management that address the social aspects of health services delivery with the integration and management of social issues within this program. For effective delivery, FMOH departments, such as the Department of Family Health, which is within the Ministry of Health, could as well as government agencies, such as the NPHCDA, have specific responsibilities for developing and executing an action plan to address issues of varied demand, social inclusion and equitable access to health services. The Program Delivery Unity (PDU) financed by the Bill and Melinda Gates Foundation could provide technical support.

ES.4.1 Key Findings

9. The key findings of the ESSA on social aspects are:

a) Although there are no formal systems or required processes such as an EIA for the social elements of health, Nigeria has formulated, in 1988, a national health policy targeted at achieving quality health care for all Nigerians. As a result of emerging issues and the need to focus on realities and trends, a review of the policy became necessary. The new policy, referred to as the Revised National Health Policy and launched in September 2004, outlined the goals, structure, strategy, and policy direction of the health care delivery system in Nigeria (Federal Ministry of Health, 2004). Roles and responsibilities of different tiers of government, including nongovernmental organizations, were clearly defined. The policy's overall long-term goal is to provide adequate access to primary, secondary, and tertiary health care services for the entire Nigerian population through a functional referral system [Nigeria Demographic Survey 2013].
b) Although, gender dynamics and women's empowerment are not directly part of the SOML remit, it does have implications for achieving the objectives of increasing uptake of government health services among poor and disempowered women.

ES.4.2 Key Program Actions

10. Key Social Issues identified are:
- Poverty and Equity
- Barriers to Utilization of PHC services
- Other issues identified in section 3

Poverty and Equity and Barriers to Utilization of PHC services are directly addressed through the program design. For example, the PDO and DLI 1 both focus on increasing utilization of high impact maternal and child health services. Progress towards achieving targets against the PDO and DLI 1 will be monitored as part of the results framework. Further specific actions needed to enhance the Program's current work and address current gaps related to poverty and equity, and utilization barriers could include:
- Technical support to develop and monitor a stakeholder/community engagement strategy
- Agree on multi-stakeholder consultation framework: a) timeline, b) participating states, c) input to community outreach and MNCH weeks, d) type of stakeholders to be targeted

11. The ESSA highlights opportunities available to government to strengthen existing environmental and social management systems applied to the programs supported by the PforR. World Bank Implementation Support (IS) will periodically monitor that no changes have taken place that would reduce the effectiveness of the overall systems as assessed in the ESSA. In addition, World Bank IS will monitor the implementation of the environmental and social assessment outlined in the PAP.

ES.5. Conclusion

12. Overall, the ESSA shows that the Environmental and Social systems are adequate for the Program implementation, with implementation of actions to address the gaps and to enhance performance during implementation with environmental and social risks ranging from low to moderate. The Table below outlines the Action plan for 2015 -2019 for improving regulatory framework and building capacity.

Action Plan Inputs

Action Plan

Issues and risks	Actions	Responsibility	Timeframe	Costs (USD)	Indicator
Weak Monitoring and Evaluation of environmental and social systems	Monitoring and evaluation arrangements established and assessment conducted on the performance of the environment and social interventions under SOML program.	FMOH	Annually	Within the existing budget.	Yes/No
Capacity for environmental and social management	Training on environmental and social management.	FMOH	Annually	Within the existing budget	Yes/No

1 Introduction and Objectives of the ESSA

1. The purpose of the Environmental and Social Systems Assessment (ESSA) is to: (i) document the environmental and social management rules and procedures and institutional responsibilities that are being used by the Government for the Saving One Million Lives (SOML) program (ii) to assess implementing entities' institutional capacity including performance to date to manage the likely environmental and social effects in accordance with Nigeria's own requirements under the program; and (iii) to recommend specific actions for improving counterpart capacity during implementation.
2. The ESSA is a World Bank document prepared by Bank staff and consultants through a combination of reviews of existing program materials and available technical literature, interviews with government staff, and consultations with key stakeholders and experts. Findings of the assessment will be used for the formulation of an overall Program Action Plan with key measures to improve environmental and social management outcomes of the Program. The findings and conclusions and opinions expressed in the ESSA document are those of the World Bank. Recommendations contained in the analysis will be discussed and finalized with the Government of Nigeria counterparts.

1.1 Structure of the ESSA Report

3. This ESSA report is organized in seven sections, as follows:

- **Section 1** provides details of the ESSA, which is a relatively new instrument of the Bank's, it outlines the Performance for Results Core Principles; the methodology and scope of the ESSA.
- **Section 2** provides the program description of the SOML including the scope and boundaries of the Program.
- **Section 3** provides the country and program context and the key social and environmental issues and risks that have been identified.
- **Section 4** describes the environmental and social management systems of Nigeria
- **Section 5** provides an assessment of the capacity and performance of the Nigerian environmental and social systems.
- **Section 6** provides an assessment of the management systems against the World Bank's six core principles.
- **Section 7** presents the ESSA actions proposed for inclusion in the overall Program Action Plan.
- **Section 8** provides an environmental and social impacts risk rating based on the ESSA findings in sections three, five and six.

1.2 Introduction to the ESSA Core Principles

4. The PforR financing instrument emphasizes the disbursement or loan proceeds against a set of performance indicators and not against specific investments or transactions.

5. Unlike conventional investment financing, implementation under PforR relies to a great extent on existing counterpart procedures and processes that are used to manage social and environmental effects of program activities.
6. The ESSA describes the extent to which the applicable government social and environment policies, program procedures and institutional systems are consistent with the core principles and elements of PforR lending, and recommends necessary actions to address the gaps as well as opportunities to enhance performance during implementation.
7. ESSA is undertaken to ensure consistency with six "core principles" outlined in paragraph 8 of the World Bank's OP/BP 9.00 Program-for-Results Financing in order to effectively manage Program risks and promote sustainable development.
8. It considers the consistency of the existing country systems with the proposed PforR operation along two dimensions: (1) systems as defined in the legal and regulatory framework of the country; and, (2) capacity of the Program institutions to effectively apply the environmental and social management systems associated with the Program's environmental and social effects as well as the proposed set of actions in the Program Action Plan that address the major gaps in the system as identified in the ESSA with respect to the six core principles of OP/BP 9.00.

1.3 The Program for Results (OP/BP 9.00) Core Principles

9. To guide the ESSA analysis, there are six core principles that must be benchmarked in the preparation and utilization as required in the Program-for-Results financing guidelines. The ESSA six core principles are briefly described below:

- **Core Principle 1 - General Principle of Environmental and Social Management**- This core principle aims to promote environmental and social sustainability in Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making related to the Program's environmental and social impacts.
- **Core Principle 2 - Natural Habitats and Physical Cultural Resources:** This core principle aims to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program.
- Core **Principle 3 - Public and Worker Safety:** This core principles aims to promote public and worker safety with respect to the potential risks associated with: (i) operation of facilities or other operational practices under the Program; and (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program.
- **Core Principle 4 - Land Acquisition:** This core principle aims to manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assists affected people in improving, or at the minimum restoring, their livelihoods and living standards.
- **Core Principle 5 - Indigenous Peoples and Vulnerable Groups:** This core principle aims to give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.
- **Core Principle 6 - Social Conflict:** This core principle aims to avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

1.4 The ESSA Scope

10. This Environmental and Social Systems Assessment (ESSA) was undertaken by the Bank team for the Program as per the requirement of the Bank's Operational Policy/Bank Procedure (OP/BP) 9.00 PforR Financing. This ESSA was developed based on:

(i) A review of existing policies, state development plans, acts, regulations, frameworks and guidelines;

(ii) Consultations, meetings and interviews with key relevant stakeholders MDAs at the National level, particularly with those involved in the environmental and social assessment as well as planning, implementation and monitoring of projects in the health sector;

(iii) An assessment of relevant environmental and social management systems relative to the PforR principles;

(iv) An assessment of the capacity and performance of the environmental and social management procedures and processes relevant to SOML;

(v) Development of an action plan to enhance environmental and social management capacity and performance of the SOML PforR; and

(vi) Development of performance monitoring and implementation support program.

1.5 Methodology

11. In order to assess the existing systems, as well as to analyze how these systems are applied in practice, the process of preparing the ESSA has drawn on a wide range of data, some of which are ongoing as the ESSA is further refined. Inputs analyzed for this ESSA have included the following elements:

a) ***Desk Review of policies, legal framework and program documents***: The review examined the set of national policy and legal requirements related to environment and social management in the health sector in Nigeria. The review also included supervision documents from previous and ongoing World Bank project and programs in the health sector, namely: (i) the Nigeria: Avian Influenza Control And Human Pandemic Preparedness and Response Project, 2006; (ii) Nigeria State Health Programmatic Investment Credit Project (NSHPIC); (iii) Malaria Control Booster Project (MCBP); (iv) Nigeria Second HIV/AIDS Program Development Project (HPDP 2); (v) Nigeria Polio Eradication Support.

b) ***Institutional Analysis***: An institutional analysis was carried out to identify the roles, responsibilities, structure and relations of the relevant institutions responsible for implementing the PforR funded activities, including coordination between different entities at the national, regional and local levels. Sources included: existing assessments of key institutions focusing on environmental and social assessment and management processes. Available literature and documents were also consulted to assess health care waste management system's capacity and performance and access to health care services in the country.

c) ***Interviews****:* Interviews were held with various MDAs and authorities, including those at the national, state and local government area level, as well as technical experts involved with environmental and social impact assessment and management in the health sector. Specifically, formal interviews were conducted with relevant personnel in the federal, state and LGA ministries of health, and key

staff in the Environmental Assessment Department of Ministry of Environment, and environmental standard, regulatory and enforcement agencies. In addition, in-depth interviews were held in primary health care facilities to assess strengths and gaps in effectively managing environmental effects in the sector at the regional and local level.

1.6 Stakeholder Consultation Process

12. The ESSA process includes stakeholder consultations and disclosure of the ESSA Report following the World Bank's Access to Information Policy.[1] There will be consultation on the ESSA during appraisal of the program but prior to negotiations with the Government of Nigeria. This consultation process and plan will continue during Program implementation. Main aspects of such a process include a stakeholder workshop with participants drawn from civil society, program implementers at different levels and development partners supporting health sector and disclosure of the document in the web-site of the FMOH for the ongoing provision of the comments and suggestions from stakeholders.

[1] http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTANDOPERATIONS/EXTINFODISCLOSURE/0,,menuPK:64864911~pagePK:4749265~piPK:4749256~theSitePK:5033734,00.html.

2 Program Description

13. The SOML Program Focuses Interventions of Proven Cost-Effectiveness and Impact: SOML builds on the President's Transformation Agenda and the National Strategic Health Development Plan (NHSDP) 2010 to 2015. It gives renewed priority to a package of high impact, evidence-based, cost-effective health interventions known as the six pillars: (i) maternal, newborn and child health; (ii) childhood essential medicines and increasing treatment of important childhood diseases; (iii) improving child nutrition; (iv) Immunization; (v) Malaria control; and (vi) the Elimination of Mother to Child Transmission (EMTCT) of HIV. The objective is to dramatically improve the coverage of these interventions that currently suffer from poor access and utilization. In addition, to its six "pillars" the SOML program also includes two "enablers": (i) promoting innovation and the use of information and communications technology; and (ii) improving the supply and distribution chain.
14. So what's new about SOML? Given its focus on existing mother and child health initiatives, it is reasonable to ask what is new about SOML? The SOML program involves: (i) re-orienting the discussion of service delivery to results rather than just inputs; (ii) clearly articulating strategic priorities for the FGON and the rest of the health sector and strengthening the long term commitment to improving the delivery of these high impact HNP interventions. It does not say that other interventions are unimportant, just that the selected intervention ("pillars") are priorities that should get the first call on resources, effort, and attention; (iii) establishing a limited set of clear and measurable indicators by which to track success; (iv) strengthening data collection so that these indicators can be measured more frequently and more robustly; (v) bolstering accountability so that managers and health workers at all levels are engaged, encouraged, and incentivized to achieve better results; and (vi) fostering innovations that increase the focus on results and include greater openness to working with the private sector.

SOML is a Federal Program: SOML is a Federal program and was initiated by the FMOH. The FGON is the principal advocate for SOML very much in keeping with its rightful role of providing strategic direction for the health sector in Nigeria. SOML is also intended to strengthen fiscal federalism by changing the Federal-State relationship from one where roles are sometimes duplicated and implementation is not well coordinated to one governed by a results-based partnership.

15. Delineation of the PforR Support – What the Federal Government can Influence: As indicated above, SOML is a federal government program aimed at strengthening six "pillars" of MCH. Perhaps the best way of conceiving the program is to consider how in the Nigerian context, the FGON, particularly the FMOH, can influence the delivery of key MCH services at health facility level and in the community. Since it has no managerial control over the 36+1 states, let alone the 774 LGAs or the 37,000 publicly owned health facilities, to actually affect what happens on the ground the FGON has to rely on the levers it does have, namely strategic priority setting, data collection and analysis, technical assistance, distributing specialized commodities (typically through the states) providing rewards & recognition, setting standards, etc. (see figure 2). Using these levers, it is feasible for the FGON to influence the behaviors of states for example through: (i) collection of robust data on service delivery at community and health facility level and feeding it back to states; (ii) rewarding states for better performance, and ; (iii) provision of technical assistance. Thus the FGON's SOML Program is really a federal level initiative that influences states (the dotted line in figure 1). The PforR supports that federal program.

16. States Can Directly Influence Service Delivery: While the FGON has little direct influence over health facilities and service delivery, State governments do have direct influence on providers and their authority is increasing with the advent of SPHCDAs. States can strengthen actual service delivery in a large number of ways (see large arrows in Figure 1) including: (i) strengthening health facility supervision; (ii) increasing the number of sites able to provide PMTCT; (iii) procuring more drugs; (iv) bolstering LGA management; (v) providing funds to facilities; (vi) working with the private sector etc. According to the latest available figures, the average state is currently spending about $12 to $15 million per year on PHC. The PforR is expected to channel about 70% of program financing directly to states based on their performance. If a state were to meet the targets for the PforR they would earn about 15-20% of the states' current expenditure through performance payments and this will be sufficient to encourage them to maximize their influence on service delivery.

Figure 1: Program Boundary

Level	**Six Pillars of SOML**					
	HIV/AIDS	**Immunization**	**Nutrition**	**Malaria**	**MNCH**	**Essential Medicines**
Federal – ***NOT*** SOML	Treatment of adult males & non-pregnant women, work with high risk populations	Meningitis vaccination, other non-childhood vaccines	Dietary diversification, food security	Indoor residual spraying;	Hysterectomy Cancer treatment	Leukemia, congenital defects
Federal – SOML	Prevention of mother to child transmission	Routine Childhood Immunization; Tetanus toxoid for mothers; polio eradication	Growth Monitoring & Promotion; Treatment of acutely malnourished children; Micronutrient supplementation	ITN distribution; diagnosis & treatment with ACTs	Antenatal, obstetric, & post-natal care; Family planning; Deploy midwives; VVF prevention	Community treatment of malaria, pneumonia, diarrhea
Federal Roles & Activities	a) Setting objectives; b) Establishing standards and protocols; c) Training; d) Procure & distribute specialized products (vaccines, ARVs etc.); ***e) Technical assistance; f) Assessment and M&E; g) Provision of additional support (e.g. promotion of MNCH weeks); h) financing & resource mobilization; i) promotion of innovations (e.g. PBF); j) rewards & recognition***					
State Roles & Activities	a) Supervision of LGAs and facilities; b) analysis of performance data; c) problem identification & resolution; d) training; e) deployment and management of human resources; f) resource mobilization; g) procurement & distribution of drugs; h) technical help to LGAs					

SOML Program Boundary

SOML Program Direct Influence

LGA Roles & Activities	a) Supervision of individual health facilities; b) Motivation of health workers; c) distribution of commodities; d) training; e) micro-planning for MNCH weeks, ITN distribution
Health Facility Roles & Activities	a) Care of individual women and children; b) immunization of women & children; c) outreach to the community; d) skilled birth attendance & family planning; e) participation in MNCH weeks and ITN distribution; f) nutrition screening & treatment; g) HIV screening of pregnant women

Source: SOML PAD December 19, 2014

17. Disbursement-Linked Indicators (DLIs): The proposed PforR will provide funds to the FGON based on a set of DLIs summarized in Table 1. The DLIs have been chosen, in consultation with government based on the Government's SOML Program Appraisal Document (2012).

Table 1: DLI Summary

Disbursement Linked Indicator	Means of Verification	Indicative Allocation ($US M)	% of Total
DLI 1- Increasing Utilization of High Impact Maternal and Child Health Interventions: States develop plans for strengthening supervision and introducing innovations (such as performance-based financing or pro-poor health insurance). Subsequently, states will be rewarded for improvements on 6 key indicators (Penta3 vaccination, ITN use, CPR, skilled birth attendance, HIV counselling during antenatal care, and Vitamin A coverage). Lagging states will strengthen their MNCH weeks as part of an impact evaluation. .	SMART Household Surveys	305	61%
DLI 2- Increasing Quality of High Impact Maternal and Child Health Interventions: States will improve the quality of care at primary health care facilities.	Health Facility Surveys	54	11%
DLI 3- Improving M&E Systems and Data Utilization: (i) Conduct SMART household surveys in all 36+1 states; (ii) introduce annual health facility surveys (harmonized based on SDI and SARA methodologies) covering all 36+1 states; and (iii) Collect data on MMR through the 2016 census or an acceptable alternative. To improve data utilization the FGON will: (i) widely disseminate the results of SMART and harmonized health facility survey data; and (ii) implement performance management systems in all states and build management capacity of state health and FMOH leadership.	Review of survey reports by PDU Review by FMOH & Development Partners	$80	16%
DLI4 - Increasing Utilization and Quality of Maternal and Child Health Interventions Through Private Sector Innovation: A competitive innovation fund will be established and effectively managed that supports innovations for techniques and technologies and innovations in health service delivery by private sector providers.	Review by FMOH and external auditors	$21	4%
DLI5 - Increasing Transparency in Management and Budgeting for PHC: States will: (i) transfer health staff to entity	Review by FMOH and PDU	$41	8%

responsible for PHC; and (ii) produce and publish a consolidated budget execution report covering all income and expenditures for PHC. The FGON will produce and publish a consolidated budget execution report covering all incomes and expenditures for PHC.			
TOTAL		500	100%

Implementation Arrangements: The SOML Program is under the supervision of a steering committee (see chaired by the Honorable Minister of Health and comprising representatives from the States (commissioners of health), development partners, the Federal Ministry of Finance, and various government organizations involved in the health sector.
The SOML-PforR program is placed in the FMOH with a Technical Working Group comprising representatives from various parts of FMOH, namely: Department of Public Health, including , National Malaria Elimination Program (NMEP) and FMOH's AIDS control program (NASCP), Department of Family Health, National Primary Health Care Development Agency (NPHCDA), and the Department of Planning, Research and Statistics.

18. The Program Management Unit (PMU) for SOML will be in charge of the day-to-day implementation of SOML under the PforR.
19. Detailed institutional and implementation arrangements are found in the Program Appraisal Document (PAD), section III A.

2.1 Key Capacity Building and Systems Strengthening Activities

20. Nigeria's health sector is full of potential and this Program aims to support ways at unleashing that potential. As such, a traditional, input-based approach to capacity building is not desirable and, instead support will be provided to states and counterparts to the extent that they are able to shift towards an evidence-based assessment of what is working and what is not in terms of improving sector outcomes.
21. Technical assistance will be deployed where it is needed to ensure a greater focus on results through a performance management approach. In doing so, the Program will support a shift in incentives for key actors (e.g., federal and state health officials) towards rewarding those that make a serious effort to shift away from "business as usual." During project appraisal, the various sources of potential technical assistance will be reviewed and confirmed.

3 Program, Country Context and Key Environmental and Social Issues

3.1 Country Context

22. Nigeria has one of the largest stocks of human resources for health (HRH) in Africa but has experienced limited progress on health services delivery in the last decade and low levels of progress in health, nutrition, and population (HNP) outcomes over the same period. It is important to note that three of the program states, Adamawa, Yobe and Borno, are under state of emergency.

23. Over the last decade, data from the last three Nigeria Demographic and Health Surveys (NDHSs) demonstrates a 36% decline during this period in the under-5 mortality rate (U5MR) and a 31% decline in the infant mortality rate. However the country is still not on track to achieve MDG4. There has been almost no progress on reducing fertility which remains stubbornly high. Childhood malnutrition has actually worsened by some measures (low weight for age has increased by 21% and wasting has increased 64%) and improved only modestly (12%) in terms of stunting (low height for age).
24. Although there have been some improvements, such as in vaccination coverage and use of insecticide treated nets (ITNs), but even these rates remain low. More worrying is the stagnation at low levels seen in services such as family planning and antenatal care and the decline in other services such as skilled birth attendance. The limited coverage of important interventions is further aggravated by poor quality of care. Preliminary results from the Bank-supported Service Delivery Indicators (SDI) Survey indicate than many health workers perform poorly on standardized tests of knowledge and lack the skills to effectively treat common and important ailments in children and mothers.
25. Nigeria's substantial contribution to Under 5 and maternal mortality the world over remains a source of concern to the Federal Government of Nigeria and development partners, and it is believed that Nigeria's ability to address under-5 and maternal mortality will significantly affect global progress towards MDGs 4 and 5. Nigeria contributes 14% of all maternal deaths globally, second only to India at 17%[2]. Similarly, Nigeria accounts for 13% of all under-5 deaths globally, again second only to India at 21%.[3]
26. It is noteworthy that Nigeria has enjoyed vibrant economic growth over the last decade; however, this has obviously not translated it into strong progress on HNP outcomes. The absence of a link between increasing wealth and health status in Nigeria appears partly to be a function of serious inequities. In addition to income inequality, there are also important geographical inequities. The U5MR is 2.5 times higher in the North East compared to the South West (222/1000 and 89/1000 respectively according to the 2008 NDHS) and service delivery is also far behind. For example, immunization coverage (DPT3/Penta3) is 14% and 21% in the Northwest and Northeast respectively compared to 70% in the South South and 80% in the Southeast (NDHS 2013).
27. Against this background, The Federal Government of Nigeria (FGON)'s response to the lack of progress in HNP outcomes is the Saving One Million Lives (SOML) program. SOML is meant to improve HNP outcomes so that they are more in keeping with the country's level of wealth. It also intends for the health sector to contribute to the economic and social development of Nigeria instead of being a drag on growth. The SOML represents a major paradigm shift from focusing on inputs to focusing on results and outcomes and it incorporates innovation as a key enabler of the change in approach to service delivery.

2 WHO, UNICEF, UNFPA and The World Bank, Trends in Maternal Mortality: 1990 to 2013, WHO, Geneva, 2014. - See more at: http://data.unicef.org/maternal-health/maternal-mortality#sthash.a1DshUTs.dpuf

3 United Nations Inter-agency Group for Child Mortality Estimation (IGME), UNICEF: Committing to Child Survival: A promise renewed-Progress report 2014, http://data.unicef.org/child-mortality/under-five

3.2 Key Environmental and Social Risks Identified through the Screening Process

28. The Bank undertook a risk screening process to identify the main environmental and social issues to be addressed by the Program. The assessment looked at several potential issues and then arrived at two or three issues based on their significance and the program's capacity to improve performance. Table 2 provides an overview of the key issues identified; this is followed by a brief introduction to the issues. Detailed background information on the key issues and other non-key issues is provided in Annex 1 and 2.

Table 2: Screening Table

Risk	Assessment
Environmental Risks and Impacts • Potential loss or conversion of natural habitats • Potential pollution or other project externalities • Changes in Land or resources use • Waste management practices	Not applicable – no risk Not applicable – no risk Not applicable – no risk Healthcare waste poses the greatest risk amongst the identified risks and experience has proven that when such wastes are properly managed, generally pose no greater risks than that of properly treated municipal or industrial wastes. Significant risk with following impacts: • **Soil Pollution** There is a high potential for infection and contamination of soil, particularly from liquid wastes flowing into soil. • **Surface and Groundwater Contamination**: There is a high potential for infection and contamination of streams and rivers from effluents from healthcare facilities flowing into drains and run-off from soil during rains following dumping of infectious and chemical wastes. • **Occupational Health and Safety Hazards:** Most waste handlers are unaware of the potential risks involved in handling medical waste; in most cases they do not have adequate protective clothing and disinfectants. • **Air Pollution and Groundwater contamination** Due to Open Burning. Open burning poses significant environmental pollution concerns due to the emission of nitrogen oxides, sulphur oxides, carbon monoxides and suspended particulates matters.
Social Risks and Impacts	

Risk	Assessment
• Involuntary Resettlement and/or Land Requisition	Not applicable – no risk
• Indigenous Peoples	Not applicable – no risk
• Poverty and Equity	Despite economic growth and diversification, Nigeria's poverty rates remain high. Poverty is particularly concentrated in certain regions of the country, most notably in the Northeast and the Northwest. In addition, inequalities remain high, with the Gini coefficient estimated at 0.48 [SOML PAD]. The vibrant economic growth Nigeria has enjoyed over the last decade has not translated into strong progress on HNP outcomes. This has been observed in other African economies with natural resource wealth and suggests that focused attention on improving health is required. The absence of a link between increasing wealth and health status in Nigeria appears partly to be a function of serious inequities. The poorest two income quintiles suffer from similarly poor HNP outcomes and children have nearly a one in five chance of dying before their fifth birthday. The ratio of the poorest to richest quintiles is significantly higher than the average in West Africa.
• Barriers to Utilization of PHC Services	There is a myriad of different utilization barriers in Nigeria. They include practical causes such as transportation and cultural causes such as gender dynamics or social exclusion based on poverty or vulnerability, and sometimes ethnicity. The Program does not have the capacity to address them all. Nevertheless, the focus under this category should be on the link between poverty and equity in the context of utilization of PHC services, including issues related to transportation costs and prices of health services
Other Issues Identified:	
• Cultural barriers	Cultural barriers are significant in many of the PHC catchment areas. Home birth is considered the norm in some communities
• Ethnic Minority Exclusion	In a few areas some health committees do not allow participation of ethnic minorities

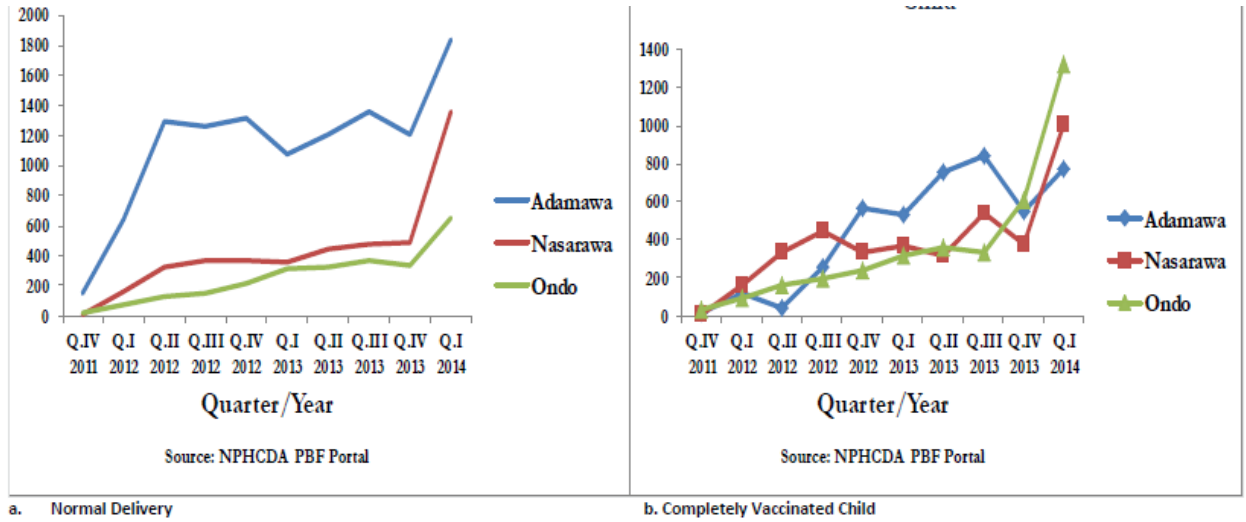
Risk	Assessment
	representatives. In many villages, individuals who are not from the area or are members of a minority ethnic group feel excluded and are hesitant to use certain facilities.
• Use of traditional healers and birth attendants	In some cases, the use of alternative providers is a community/cultural norm. Many health workers and state health officials pointed to the fact that most alternative providers allow payment on a credit system and/or through in-kind payments (e.g., chickens, yams, etc.).
• Gender Dynamics Link to Utilizing Government Health Services	Findings from the 2013 Nigeria Demographic and Health Survey revealed some links between women's ability to earn and control their own finance resources and access to health care Ward Health Committees are meant to enhance community participation in resource allocation, decisions taken at the health facility.
• Low User participation and Government Accountability	Because funding and other resources come from diverse sources, and fund provision is unpredictable and often unrelated to budgets, managers in the PHC system are not held accountable for results. Accountability through Local Government is undermined by the fact that elected local councils are frequently suspended by State Governors

3.3 Potential Environmental Benefits

29. The risk screening suggests that the overall environmental impact of the Program is likely to be positive with potentially significant environmental benefits with medical waste disposal as the main risk to deal with. Clearly, poor management of wastes resulting from healthcare delivery exposes health workers, patients and the public to adverse effects of wastes generated from health establishments. In addition, the evacuation and disposal of these wastes could also lead considerable environmental and social problem if not done properly.
30. The data generated from service delivery in the PBF pilot LGAs indicated that the incentives and accountability mechanisms under the PBF initiatives have led to significant improvement in quality and health outcomes performance in the pilot LGAs shows increased trend in normal delivery in each quarter starting from quarter IV of 2011 to quarter I of 2014. Examples are: Adamawa from 147 to 1837; Nasarawa 8 to 1364 and Ondo 13 to 654 respectively. Similarly the number of children who were

completely vaccinated increased in the same period - Adamawa from11 to 771; Nassarawa 4 to 1001; Ondo 32 to 1320.

Figure 2: Deliveries and Vaccinations in PBF Pilot LGAs



a. Normal Delivery b. Completely Vaccinated Child

31. The improvements may reflect a combination of factors including motivation of workers by performance incentives and better supervision, availability of essential drugs, outstanding improvement in quality of care in the delivery with modern equipment, upgrading of facilities and the working environment that encouraged increased access and utilization. More importantly, the continuous community support and participation in the implementation of PBF initiatives was seen as providing motivation for further progress.

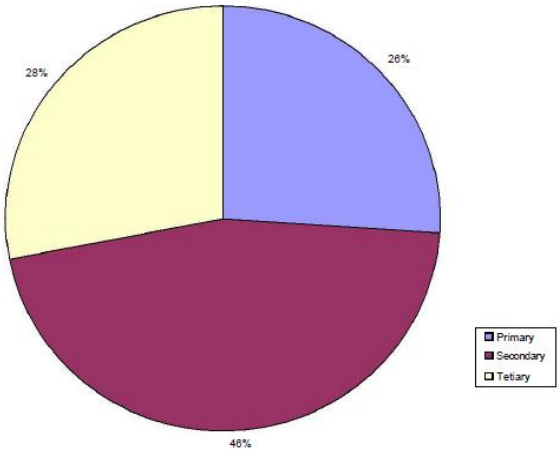
32. Amongst the factors considered to have led to these improvements are availability of essential drugs, upgrading of facilities and the working environment that encouraged increased access and utilization. The increase in vaccinations, essential drugs supply and upgrade of facilities, and so on have implication on the overall environmental management such as increased waste generation. The SOML Program is likely to be positive owing to increasing accountability for results, improved coordination across the health system, as well as strengthening of the health programs. A strong program delivery unit will closely track, troubleshoot, and hold accountable Nigeria's health programs. The performance driven program provides financial rewards for quality and quantity of services rendered which in turn provides further incentives for improvement, monitoring and higher performance.
33. Thus the nature of the program provides opportunities to enhance the sanitation, hygiene and infection control and waste management systems and processes at the health facilities so as to further promote sound public health outcomes, while also ensuring that there are no adverse impacts to the environment.

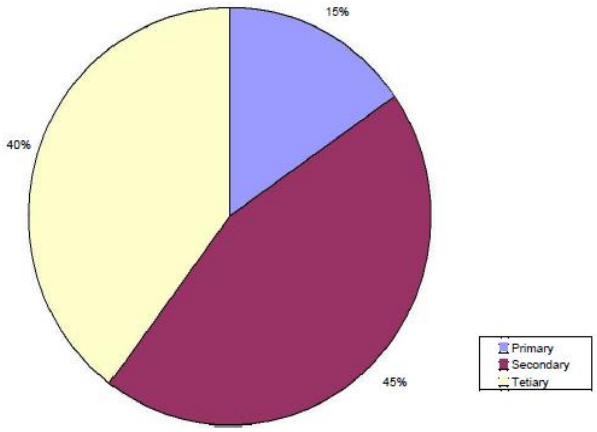
3.4 Potential Adverse Environmental Impacts

34. The environmental impacts of the individual pillars of the SOML program activities are not anticipated to be large scale or irreversible. Activities that would cause any significant adverse effect on the environment are not likely under the program. The results identified in the program do not require any civil works that may have high risks with large scale irreversible impacts on environment. Based on the analysis of the Nigerian regulatory system and previous activities implemented by the FMOH within the WB supported portfolio, the program is not likely to have significant impacts on natural habitats or create environmental pollution, other than the generation of health care waste (medical waste) which is considered a localized impact.
35. Almost every activity carried out at the health facilities lead to waste generation which must be managed. Of significance is the healthcare waste generation which has been described as 'minor' in comparison to such waste generated at the Secondary and Tertiary facilities. Irrespective of the quantity, health care waste is potentially dangerous and hazardous as the composition of the waste is often anatomical laden with materials such as soiled tissues, organs, body parts/fluids and other infectious materials/waste.
36. Thus it is estimated that between 10% and 25% of healthcare waste generated by medical institutions are hazardous in nature. However, this is much higher in Nigeria due to the poor Health Care Waste (HCW) or medical waste management practices (poor segregation at source of generation, poor transportation mechanisms, and poor storage). At Primary Healthcare Centre, 0.05-0.2 kg/bed is the estimated daily waste generated. In most facilities, average generation as revealed by the Nigeria Service Delivery Indicator (SDI) Health Survey (2013) is 20kg/day which is made up of pharmaceutical and medicinal waste, including containers and expired medicines. Healthcare Waste Management Plan for the Nigeria State Health Programmatic Investment Credit (2011) revealed that average medical Waste generation in a day at primary health care facilities in Ondo and Nasarawa States are 17.17kg/day (made up of 0.5kg of sharps and 16.67kg of other hazardous healthcare waste) and 25.5KG/day (made up of 0.5kg of sharps and 25kg of other hazardous waste) respectively.
37. Comparatively, Figure 3 shows that secondary healthcare facilities generates 45% of the total medical waste produced in Nigeria, this is closely followed by the tertiary healthcare facilities (40%). Primary healthcare facilities generate only 15% of the waste. **Error! Reference source not found.** compares the average total waste (general and medical) waste generated by facility type.

Figure 3: Medical Waste Generation by Facility

Figure 4: Medical Waste Generation by Facility





Source: National Medical Waste Management Plan for Avian Influenza Pandemic & Human Preparedness & Response Project (2007)

38. The enhanced sanitation, hygiene and infection control and waste management system at the PBF facilities have provided significant improvements in HCWM showing that the problem is tractable.
39. Vaccination is potentially a significant source of waste generation, especially through expired vaccines due to poor stock management and cold chain. However in the context of Nigeria this is of modest environmental concern since the volume of waste from wasted vaccine vials is small and because they are sterilized vaccines which do not present a public health or environmental risk.
40. Thus the nature of the program provides opportunities to enhance the sanitation, hygiene and infection control and waste management systems and processes at the health facilities so as to further promote sound public health outcomes, while also ensuring that there are no adverse impacts to the environment.

3.4.1 Potential Impacts of Existing Medical Waste Management Practices

41. The anticipated improvement in the quality of services and hygienic conditions and thus more utilization/patronage would result in the increase in both the types and quantity of medical wastes that will be generated by the health care facilities supported by the project. In addition, there would also be need for minor rearrangement/renovation of the existing stores for the health care commodities storage at the commencement of the program.
42. Current management practices constitute both a public health and environmental hazard. Although experience has proven that when healthcare wastes are properly managed, generally they pose no greater risks than that of properly treated municipal or industrial wastes, the lack of awareness of the extant laws and policies, weak capacity for waste segregation, temporary storage, evacuation and final disposal facilities, especially at facility levels result in inadequate waste management and thus poor implementation or utilization of the available instruments.
43. Thus Healthcare waste management in particular poses greatest risk amongst the identified risks with regard to occupational and public health safety and environmental pollution. Though the quantity of health care waste in comparison to other types of

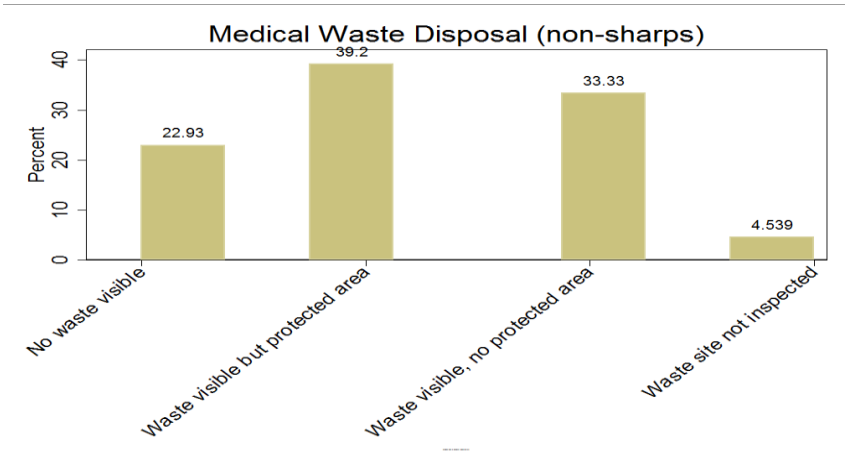
waste is relatively small (about 15% of waste generated in typical health facility), it can pose grave risks if not managed properly. All the medical waste generated (body parts, organs, tissues, blood and body fluids along with soiled linen, cotton, bandage and plaster casts from infected and contaminated areas along with used needles, syringes and other sharps)thus must be properly collected, segregated, stored, transported, treated and disposed of in a safe manner to prevent the spread of infection. Failing to do this might lead to the spread of hazardous infections such as HIV, Hepatitis and other viral or bacterial infections, which pose significant risks to the health of the public, patients, medical professionals and contribute to environmental degradation.

44. In summary, improper occupational practices and unsafe handling of infectious waste potentially expose health care workers, waste handlers, patients and the community to infection and injuries. Open and uncontrolled slow burning of mixed waste which includes plastic waste produces emissions, such as dioxins and furans, which can be potentially hazardous and carcinogenic.
45. As a result of improper management of medical waste the following negative impacts could also result:
    a. **Soil Pollution: There** is a high potential for infection and contamination of soil, particularly from liquid wastes flowing into the soil. The potential of contamination from untreated sharps, anatomical and infectious wastes buried or dumped indiscriminately may lead to the entry of pathogens and chemicals into the food chain.
    b. **Surface and Groundwater Contamination:** There is a high potential for infection and contamination of streams and rivers from effluents from healthcare facilities flowing into drains and run-off from soil during rains following dumping of infectious and chemical wastes. The potential for groundwater contamination from buried infectious wastes, sharps and body parts is also significant.
    c. **Occupational Health and Safety Hazards:** Most waste handlers are unaware of the potential risks involved in handling medical waste; in most cases they do not have adequate protective clothing and disinfectants. They are exposed to a high potential infection following injuries from sharps, handling of infectious materials and human parts.
    d. **Air Pollution and Groundwater contamination Due to Open Burning:** Open burning poses significant environmental pollution concerns due to the emission of nitrogen oxides, sulphur oxides, carbon monoxides and suspended particulates matters. Smoke and dioxin inhalations can pose occupational health hazards. There is the possibility of soil and groundwater contamination from the ash and leachates from open burning when combustion is incomplete and also from burial. Groundwater contamination could result in high levels of ammonia, total dissolved solids (TDS), chloride and biological oxygen demand (BOD), and possibly pathogens.

46. With regard to health care waste disposal, the SDI survey reveals that 39.2% of the facilities dispose waste in locations that are visible but protected while 33.33% dispose in areas that are visible and not protected Fig.5. Fig. 6 indicates the availability of functioning incinerators at health facilities in both urban and rural areas. In a scale rating of 0-2, functional incinerators in the urban areas were found to be 0.177 and in the rural areas, 0.058 (for hospitals) and for health centers and clinics these were found to be 0.013 and 0.032, respectively. Availability of sterilization equipment in the facilities was found to be 0.697 and 0.389 on a scale rating of 0-10 for health centers in the urban and rural areas, respectively. In all health facilities, 70.45% of the

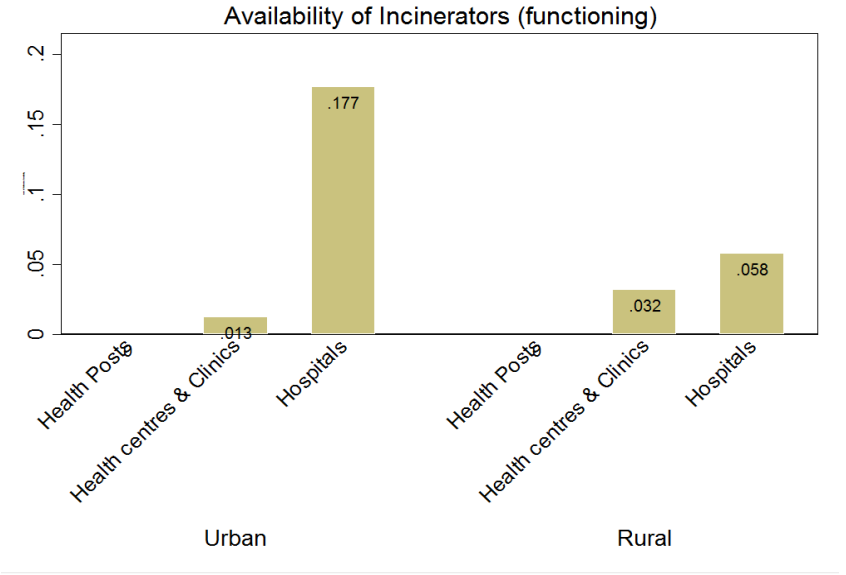
respondents said no to the availability of guidelines on health care waste management (see Table 3).

Figure 5: Medical Waste Disposal



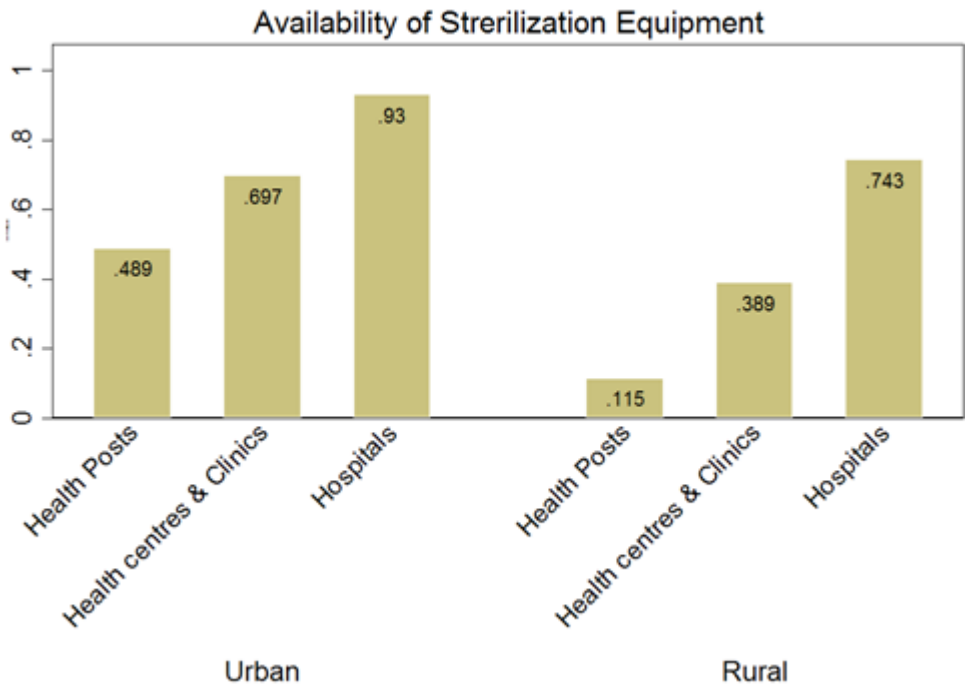
Source: Nigeria Service Delivery Indicator (SDI) Survey -Health Facility Survey – (2013)

Figure 6: Availability of Incinerators



Source: Nigeria Service Delivery Indicator (SDI) Survey -Health Facility Survey – (2013)

Figure 7: Availability of sterilization equipment



Source: Nigeria Service Delivery Indicator (SDI) Survey -Health Facility Survey – (2013)

Table 3: Availability of HCWM Guidelines

Availability of Guidelines on
Health Care Waste Management

% of facilities				
	All facilities	Health Posts	Health Centers	District hospitals (OPD)
Yes - guidelines observed	14.56	8.26	15.62	21.26
Yes - guidelines not observed	14.99	16.89	12.93	29.68
No	70.45	74.84	71.45	49.06
Total	100	100	100	100

Source: Nigeria Service Delivery Indicator (SDI) Survey -Health Facility Survey – (2013)

3.5 Key Social Impacts and Risks

47. The program design will directly address the key social issues identified, below, as the PDO and DLI1 both focus on increasing utilization of high impact maternal and child

health services and progress toward achieving targets against the PDO and DLI1 will be monitored as part of the results framework.

3.5.1 Poverty – and Equity

48. Despite economic growth and diversification, Nigeria's poverty rates remain high. As of 2009-2010, an estimated 46 percent of the population (with adult equivalent correction) was estimated to live below the official poverty line, close to $1.25 a day PPP corrected. [4]Poverty is particularly concentrated in certain regions of the country, most notably in the Northeast and the Northwest. In addition, inequalities remain high, with the Gini coefficient estimated at 0.48 [SOML PAD]. Equity Issues: The vibrant economic growth Nigeria has enjoyed over the last decade has not translated into strong progress on HNP outcomes. This has been observed in other African economies with natural resource wealth and suggests that focused attention on improving health is required. The absence of a link between increasing wealth and health status in Nigeria appears partly to be a function of serious inequities. The poorest two income quintiles suffer from similarly poor HNP outcomes (see Table below) and children have nearly a one in five chance of dying before their fifth birthday. The ratio of the poorest to richest quintiles is significantly higher than the average in West Africa. As can be appreciated in the bottom part of Table 4, the differentials in access to, and utilization of, health services by income quintile are extreme.

Table 4: Health Outcomes and Outputs by Income Quintile Based on 2013 NDHS

Outcome Indicators	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Ratio of Q1 to Q5
Infant mortality rate per 1000	92	94	71	65	48	1.9
Under-five mortality rate per 1000	190	187	127	100	73	2.6
Stunting children under 5 (%)	53.8	46.1	35.1	26.3	18.0	3.0
Underweight children under 5 (%)	41.9	34.8	25.7	22.1	15.6	2.7
Output Indicators						
Fully immunized children (%)	7.0	18.5	39.7	60.0	79.5	11.4
Skilled Birth Attendance (%)	5.7	17.3	39.9	62.1	85.3	15.0
Antenatal care 1+ visits (%)	24.6	44.8	67.8	85.2	94.5	3.8

Source: NDHS 2013 and Staff Calculations.

3.5.2 Barriers to Utilization of PHC Services

49. The following paragraphs explore some of the main barriers to utilization, such as user charges, transportation costs, and poverty.
50. User Charges and Transport Costs: According to the 2013 Demand Side Report, there is a high degree of confusion among community members due to the many schemes underway to improve maternal and child health care. This leads to problems with predictability, particularly over the cost of drugs. For example, one scheme to improve maternal health expired in May, so drugs that were free in April now cost money. Community members do not understand why they have to pay for drugs that their family members and friends did not have to pay for a few months ago. It also appears that there is much confusion among health workers (particularly at low-performing Oworo PBF PHC) about which scheme pays for what service and how money coming

[4] More recent evidence suggests that the poverty rate in Nigeria might actually be significantly lower than this. See World Bank (2014), Nigeria Economic Report #2

to the PBF PHC is supposed to be allocated. State health officials noted the need to better integrate the schemes, particularly with respect to the free maternal and under-5 health care that is supposed to be provided under ABIYE and NHIS schemes and how this conflicts with PBF[2013 Demand Side Report].

51. Transportation and infrastructure barriers are major problems in some States, for example in Ondo East. The extremely poor condition of roads leading to some of the more remote communities in Ondo East LGA interferes with PBF PHC uptake.
52. Cost of transportation is another significant barrier. For some persons in the Owena Tepo catchment zone, an okada ride to the PBF PHC is 400N each way, a significant amount to pay before even receiving care or having to pay for drugs. To pay this transport cost repeatedly over the length of a pregnancy is a significant burden for many families [2013 Demand Side Report]. Although, ostensibly this issue is about transport – fundamentally it is about poverty and the difficulty that low income communities have in physically accessing health services, especially in rural areas.
53. Low utilization and poverty: According to the 2013 Nigeria Demographic and Health Survey women in rural areas are more likely to deliver at home (77 percent) than their urban counterparts (37 percent). The North West has the highest proportion of deliveries at home (88 percent), followed by the North East (79 percent); the South East has the lowest proportion of such deliveries (20 percent), followed closely by the South West (24 percent). Women with higher levels of educational attainment are more likely to deliver in a health facility than women with less or no education. For example, women with more than a secondary education (91 percent) are eight times as likely to deliver in a health facility as women with no education (11 percent). The proportion of births occurring in a health facility increases steadily with increasing wealth quintile, from 6 percent of births in the lowest quintile to 80 percent in the highest quintile. [2013: Nigeria Demographic and Health Survey]
54. On close examination, of these figures a clear storyline of social exclusion, based on poverty, emerges. The North West, which has some of the poorest states, has the highest home deliveries. Women with no or little education are more likely to have home births than their better educated counterparts. Level of education, especially among women, is often used as a proxy indicator of poverty. Meaning that the poorer the woman the lower level of education, potentially, she will obtain. These figures show that even with pro poor health policies some poor women are not accessing primary health care facilities. Table 5 below illustrates some of the different reasons for the lack of equitable access to health care.

Table 5: Problems in Accessing Health Care

Problems In Accessing Health Care					
Zone	Reasons				
	Getting permission for treatment	Getting money for treatment	Distance to health facilities	Not wanting to go alone	At least one problem of access to health care
North Central	4.3	46.6	27.3	13.3	56.0
North East	12.3	44.8	35.3	16.2	58.1
North West	19.9	40.1	35.0	19.8	55.4
South East	9.2	56.6	33.5	17.7	64.0
South South	5.6	46.6	25.6	9.9	54.0

South West	5.9	26.6	11.9	5.9	34.5
Residence					
Urban	7.2	31.9	15.6	9.1	41.7
Rural	14.2	49.4	38.5	18.6	61.7

Source: NDHS 2013.

3.5.3 Other Issues Identified:

55. The above interconnected social issues were categorized as key because of their importance to the SOML program objectives and the ability of the program to provide mechanisms to address some of these issues. However, there are additional social issues that were taken into account but were deemed less critical in the context of the program and the related PDO.
56. Cultural barriers are significant in many of the PHC catchment areas. Home birth is considered the norm in some communities; women and their family members are likely to point to previous successful home births as evidence that there is no need to pay to deliver at the clinic. This is true even for women who faithfully attend antenatal clinics throughout their pregnancies and who bring their children for vaccinations on schedule after delivery [2013 Demand Side Report].
57. Ethnic minority exclusion is another issue. In a few areas some health committees do not allow participation of ethnic minority representatives. In many villages, individuals who are not from the area or are members of a minority ethnic group feel excluded and are hesitant to use certain facilities [2013 Demand Side Report].
58. Use of traditional healers and birth attendants, is a long standing practice, particularly in Epe, although researchers have witnessed this in some other communities. In some cases, the use of alternative providers is a community/cultural norm. Many health workers and state health officials pointed to the fact that most alternative providers allow payment on a credit system and/or through in-kind payments (e.g., chickens, yams, etc.). This means that while community members ultimately pay more for treatment, the ability to spread out payments over time makes the alternative service providers' services more attractive than those of the PHCs. However, there is some anecdotal evidence of individual health facility staff engaging in effective community outreach by working with communities and traditional healers to encourage women to use the government health centers [2013 Demand Side Report].
59. Gender Dynamics Link to Utilizing Government Health Services: Findings from the 2013 Nigeria Demographic and Health Survey revealed some links between women's ability to earn and control their own finance resources and access to health care:
    - Seventy percent of currently married women who earn cash make independent decisions on how to spend their earnings.
    - Only 31 percent of currently married women participate in three specified decisions pertaining to their own health care, major household purchases, and visits to their family or relatives.
    - Access to antenatal care and delivery assistance from a skilled provider increases with women's empowerment.

60. Although, gender dynamics and women's empowerment are not directly part of the SOML remit, it does have implications for achieving the objectives of increasing uptake of government health services among poor and disempowered women. Table 6 below, illustrates the link between child mortality and the mother's education which can be used as a proxy indicator of poverty as mentioned below.

Table 6: Childhood mortality and mother's education

Early childhood mortality rates by mother's education and Income					
Background characteristic	Neonatal mortality (NN)	Post neonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-5 mortality (5q0)
Mother's education					
No education	44	45	89	100	180
Primary	42	33	74	57	128
Secondary	34	24	58	35	91
More than secondary	30	20	50	13	62

Source: NDHS 2013.

61. Low **User participation and Government Accountability:** Low participation in decisions related to health service delivery: While Ward Health Committees are meant to enhance community participation in resource allocation, decisions taken at the health facility and be responsive to community needs, for the most part their performance is uneven, the representativeness limited, and their responsibilities too narrowly defined [2011: ISDS for Nigeria States Health Program Investment].

3.5.4 Potential Social Benefits

62. The program is expected to have significant positive social impact as it will promote improved health outcomes for the citizenry, particularly women and children by strengthening utilization and quality of health care especially for the poorest households in Nigeria.
63. The SOML has a strong focus on poverty and equity which is a key issue in relation to maternal and child health. As indicated in Table 4, maternal and child health outcomes in Nigeria are poor on average and are especially bad for the poorest two income quintiles. The PforR employs a number of mechanisms to strengthen equity:

(i) **SOML Prioritizes Services for Which the Poor are Under-served:** This program focuses on services where the coverage among the poor is particularly low and where the poor would be expected to gain disproportionate benefit. These services include immunization and skilled birth attendance where the coverage among the richest income quintile is more than ten times higher than among the poorest income quintile;

(ii) **SOML Prioritizes Primary Health Care Facilities:** The program will focus greater efforts on strengthening PHC facilities because that is where the most important services can be provided most efficiently and because they are used disproportionately by the poor;

(iii) **Greater Support to the Northeast, Northwest and Lagging States:** For DLIs 1, 3, and 4 there will be greater support for the Northeastern and Northwestern zones where the coverage of key SOML services is the lowest and health outcomes the worst;

(iv) **Investment Grants to Poorly Performing States:** As a prior action, the program will provide larger "investment grants" to the poorest performing states at the beginning of the PforR to allow them to address legacy issues;

(v) **Ensuring Innovation Focuses on the Poor:** Innovations financed under the program will focus on serving the poorest 40% of the population;

(vi) **Rewarding Improvements in Services:** Focusing on improvements in coverage of services rather than absolute levels may give poorly performing states an opportunity earn more in performance grants because they are starting at lower levels of coverage and making improvements should be proportionately easier; and

(vii) **Track Progress by Income Quintile:** The program will carefully measure progress by income quintile so as to facilitate tracking of improvements in the poorest 40% of the population. This will allow regular review of national and zonal level results by income quintile during the annual review process.

4 Description of Program Environmental and Social Management System

4.1 Environmental Management Systems

64. There are a number of relevant Government Policies at Federal and State levels that are related to giving direction towards a safe and healthy environment of which effective management of healthcare waste in the country is critical. These laws emphasize protection, prevention and conservation of the natural resources and general environmental management. Some of these include the Environmental Impact Assessment (EIA) Act No. 86 of 1992, National Healthcare Waste Management Plan (NHCWMP), 2008, National Healthcare Waste Management Guideline (NHCWMG), 2008, and National Healthcare Waste Management (NHCWM) Policy, 2008. National Policy Guidelines on Solid Waste Management, National Environmental Sanitation Policy and National Policy Guidelines on Sanitary Inspection of Premises. In addition, decree No 58, of 1988 as amended by Harmful Wastes Act Cap 165 LFN 1990 and Waste Management Regulations S.I.15 1991 are defective as it did not encapsulate any broad policy framework that has direct influence on medical waste management neither did it take cognizance of the fact the scope of medical waste incineration processes should include monitoring of emissions and standards. Nigeria is a signatory to the Basel Convention on control of Trans-boundary Movements of Hazardous Wastes and Disposal.
65. In spite of the several laws, Nigeria does not have a coordinated healthcare waste management system, especially in the area of segregation, collection, storage, treatment, and disposal. This necessitated the need for a national health waste policy, guideline, and strategic plan. On September 4, 2013, the Nigerian Federal Executive Council (FEC) approved a new National Strategic Healthcare Waste Management policy, including National Strategic Healthcare Waste Management Plan and Guideline for the country. The fact that Ministers of Environment and Health jointly presented the memo seeking Council's approval for the adoption of the National Healthcare Waste Management policy, underscores the high level of the commitment of the Government toward improving the situation of the sector. Annex 3 presents a summary of the new policy context, including applicable plans and guidelines.
66. Generally, Nigeria is considered to have a fairly complete set of regulations and legal instruments however consistent implementation of monitoring and enforcement measures remain a challenge.

4.2 Social Management Systems

67. The social management systems in Nigeria are not as well developed as those for Environmental management except in the context of land acquisition and involuntary resettlement, which are not applicable to this Program. However, this lack of targeted social management provides an opportunity for the Federal, State and local governments and the World Bank via the PforR to establish objectives, systems and management that address the social aspects of health services delivery. The Federal Ministry of Health has the overall responsibility of the SOML program and therefore should also oversee the integration and management of social issues within this program. FMOH departments, such as the Department of Family Health, which is within the Ministry of Health, could as well as government agencies, such as the NPHCDA, have specific responsibilities for developing and executing an action plan to address issues of varied demand, social inclusion and equitable access to health services. The Program Delivery Unity (PDU) financed by the Bill and Melinda Gates Foundation could provide technical support.
68. Although there are no formal systems or required processes such as an EIA for the social elements of health, Nigeria has formulated, in 1988, a national health policy targeted at achieving quality health care for all Nigerians. As a result of emerging issues and the need to focus on realities and trends, a review of the policy became necessary. The new policy, referred to as the Revised National Health Policy and launched in September 2004, outlined the goals, structure, strategy, and policy direction of the health care delivery system in Nigeria (Federal Ministry of Health, 2004). Roles and responsibilities of different tiers of government, including nongovernmental organizations, were clearly defined. The policy's overall long-term goal is to provide adequate access to primary, secondary, and tertiary health care services for the entire Nigerian population through a functional referral system [Nigeria Demographic Survey 2013].
69. The underlying principles and values of the Revised National Health Policy are as follows:
    - Social justice, equity, and the ideals of freedom and opportunity affirmed in the 1999 Constitution of the Federal Republic of Nigeria are basic rights.
    - Health and access to quality and affordable health care are human rights.
    - Equity in health care for all Nigerians will be pursued as a goal.
    - Primary health care (PHC) will remain the basic philosophy and strategy for national health development.
    - Good-quality health care will be assured through cost-effective interventions that are targeted at priority health problems.
    - A high level of efficiency and accountability will be maintained in the development and management of the national health system.
    - Effective partnerships and collaborations between various health sectors will be pursued while safeguarding the identity of each.

70. The overall objective of the Revised National Health Policy is to strengthen the national health system such that it will be able to provide effective, efficient, quality, accessible and affordable health services that will improve the health status of Nigerians through achievement of the health-related Millennium Development Goals (MDGs). The main health policy targets are the following:
    - Reduce the under-5 mortality rate by two-thirds between 1990 and 2015
    - Reduce the maternal mortality rate by three-quarters between 1990 and 2015

- Reduce the spread of HIV/AIDS by 2015
- Reduce the burden of malaria and other major diseases by 2015

71. The national health policy identifies primary health care as the framework to achieve improved health for the population. PHC services include health education; adequate nutrition; safe water and sanitation; reproductive health, including family planning; immunization against five major infectious diseases; provision of essential drugs; and disease control. According to the policy, a comprehensive healthcare system delivered through PHC centers must incorporate maternal and child health care, including family planning services.
72. Nigeria's health sector is characterized by wide regional disparities in status, service delivery, and resource availability. In view of this situation, the government of Nigeria initiated several interventions including the Midwives Service Scheme (MSS); the Subsidy Reinvestment and Empowerment Program, Maternal and Child Health (SURE-P-MCH); and systematic PHC infrastructure upgrades through the Ward Health System.
73. Under the MSS, retired and newly qualified midwives provide services at PHC facilities in underserved communities around the country. The scheme, funded through MDG debt relief gains on a cost-sharing basis among the three tiers of government, has trained and deployed approximately 4,000 midwives and 1,000 community health extension workers (CHEWs) in 1,000 PHC facilities. This has improved access to skilled birth attendants in 375 LGAs across the country. In addition, attention is continuously geared toward full childhood immunization and HIV/AIDS prevention (National Primary Health Care Development Agency [NPHCDA], 2012).
74. The SURE-P-MCH programme, funded through savings derived from the partial removal of the petroleum subsidy, is intended to build and expand on the gains of the MSS. The programme aims to improve both demand and supply components of maternal and child health. As of January 2013, the program had engaged 1,168 midwives and 2,188 community health extension workers in 500 PHC facilities. A total of 3,072 village health workers were also recruited and deployed. In addition, the program is implementing a conditional cash transfer scheme as well as pursuing PHC facility upgrades and community engagement.
75. The Ward Health System (WHS) was initiated in 2000 to improve equitable access to essential health services. The system is premised on the synchronization of PHC services across electoral wards with the construction of model PHC facilities in underserved areas. As of January 2012, the NPHCDA had built1, 156 PHC facilities across the country. This is in addition to 228 maternal health care centers and 10 health training institutions built by the MDG office (Federal Republic of Nigeria, 2010a; NPHCDA, 2012).

5 Program Capacity and Performance Assessment

76. Nigerian's environmental and social management systems that apply to the SOML Program consist of national legal policies and sector guidelines that are broadly consistent with OP/BP 9.00. However, when reviewed separately, individual laws or policies, may not reflect the entirety of OP/BP 9.00 principles.

5.1 Performance with regard to legal and regulatory framework on environmental aspects

77. The following is an assessment of the GON policies on management of environmental and social impacts relevant to the health sector, specifically the SOML program, compared with the principles and elements in World Bank OP/BP 9.00 to be followed for PforR operations. Nigeria's environmental and social management systems that apply to the SOML Program consist of national legal policies and sector guidelines that are broadly consistent with OP/BP 9.00. However, some gaps do exist and some lack in terms of implementation and compliance at health facility level.
78. The Legal and Regulatory framework governing the environmental and the health sector is strong in terms of the provisions enlisted for safeguarding the environment. Thus the Program implementing agencies, especially the FMOH operate within a well-defined regulatory system for safeguarding environmental resources and ecologically significant areas from degradation. The system includes protection of environmental resources, excluding activities that are likely to have significant adverse impacts on eco-sensitive areas, coastal areas and wetlands or degrade the environmental extensively.
79. The implementation of the existing provisions faces challenges because of the gaps that have been identified as follows:
    a. National Policy on Environment policy and its institutional arrangements have not yielded the desired results, principally due to weak enforcement; inadequate manpower in the area of integrated. Strengthening of capacity of the Federal Ministry of Environment EA Department to supporting the program will boost the compliance status of the program
    b. Although a number of relevant Government Policies at Federal and State levels that are related to giving direction towards a safe and healthy environment for effective management of healthcare waste in the country there is no coordinated healthcare waste management system, especially in the area of segregation, collection, storage, treatment and disposal.
    c. The existing legal/regulatory provisions do not make it mandatory that Medical Institutions, Local Government Authorities, as well as State and Federal Government Agencies involved in the generation and management of HCW to ensure a "duty of care" and take precautionary measures to protect Healthcare workers, waste managers, the general public and the environment from adverse effects of improper handling of HCW. 'An essential issue is the clear attribution of responsibility for the handling and disposal of waste. According to the 'polluter pays' principle, the responsibility lies with the waste producer, usually the health-care provider, or the establishment involved in related activities. To achieve the safe and sustainable management of health-care waste, financial analyses should include all the costs of disposal.

80. In recognition of these differences, the supported intervention programs would be made to bridge the identified gaps. This ESSA will serve to guide the SOML Program to managing environmental and social issues in accordance with OP/BP 9.00 principles.

5.1.1 Adequacy of Institutional Organization and Capacity on Environmental aspects under the Program

81. While the overall institutional arrangements and role division is the key strength, institutional capacity poses a challenge. The challenges and capacity building needs of managing environmental aspects related to service delivery have been identified.
82. These interventions present a unique set of potential challenges with respect to environmental management especially with regard to effective use of existing safeguard instruments for best practice. Though the pillars of support have developed the necessary safeguard instruments implementation had been a challenge. For instance, though the need for Environmental and Social Safety Officers had been identified these hardly exist in the programs. Also the capacity to manage waste and follow best practice at the facility levels requires much to be desired.
83. Thus to ensure sustainable implementation of activities under the PforR program, FMOH must ensure a dedicated staff is assigned to serve as an Environmental and Social Safety Officer (EO), The presence of such designated safeguards staff has been a key factor in successful environmental and social risk management under some of the health programs forming the pillars of support.
84. The proposed PforR operation is designed as a programmatic results-based approach in the health sector based on existing pillars of support.

5.2 Social Program capacity and performance assessment

5.2.1 Institutional organization and division of labor

85. The overall design of SOML-PforR is embedded in existing policy and procedures of the FMOH. The program design demonstrates that it is geared toward - enhancing health outcomes for mother and child, particularly in poorer communities, improving information dissemination, increasing utilization of service delivery, and improving good governance. Social impact of the Program is likely to be positive.
86. SOML-PforR program organizational boundaries, roles and responsibilities at the federal, state, and health facility level are clearly defined and delineated (see figure 1, SOML program Boundary, PAD). Further assessments of ongoing and completed Bank financed projects in Nigeria suggest that Nigeria has experience and capacity in implementing and ensuring compliance to social requirements. Sensitivity to poverty related social exclusion needs to be addressed and integrated into the roles and responsibilities of PHC workers. Despite the pro-poor focus, there are still a number of poor women who either cannot or do not want to access the services. This issue of social exclusion is a difficult issue to measure however the SOML includes a regular monitoring process through yearly survey that will provide information pertaining to this issue.

5.2.2 Program System

87. SOML PforR plans to impact health facilities and service delivery by providing technical and capacity building support to the State Primary Health Care Development Agency (SPHCDA). The SPHCDA is responsible for consolidating the management of Primary Health Care (PHC) system at the state level including: i) providing inputs, ii) guiding management processes, iii) directly and more effectively influence health facilities, and iv) providing effective inputs and processes that provide more and better quality services. More importantly, SPHCDA is the principal institution for guiding and implementing community outreach activities and MNCH weeks at state level. These community outreach activities should be strengthened to ensure equity in access to services and explore the reason for inequity and exclusion based on poverty.
88. Given that the role of consolidating the management of PHC is still in progress for many SPHCDAs, the SPHCDAs may not have robust capacity to plan and implement community outreach programs and MNCH weeks. There is need for providing technical and capacity building support to SPHCDAs in order to assist the state agencies in articulating and further incorporating demand side social interventions geared toward reversing socio-cultural barriers limiting the poor and vulnerable women from access health facilities.

5.2.3 Interagency Coordination

89. SOML-PforR program is placed in the FMOH with a Technical Working Group comprising representatives from various parts of FMOH, namely: Department of Public Health, including , National Malaria Elimination Program (NMEP) and FMOH's AIDS control program (NASCP), Department of Family Health, National Primary Health Care Development Agency (NPHCDA), and the Department of Planning, Research and Statistics.
90. The Program Management Unit (PMU) for SOML will be in charge of the day-to-day implementation of SOML and the PforR. The PMU will be responsible for the coordination of SOML activities in the FMOH.
91. In summary, the program has the capacity to tackle the key issues identified namely poverty and equity and barriers to utilization of PHC services. However, performance has been varied. Social issues are more difficult to define than environmental issues. Without this focus the key pro-poor objectives of the program will not be achieved. The gap in access to, and utilization of, health services between the poorest and the richest deserves urgent corrective measure. As discussed in the program's PAD, Nigeria's increasing wealth is not translating into improved health for the poor. The PAD further states that absence of a link between increasing wealth and health status in Nigeria appears partly to be a function of serious inequities.

6 Assessment of Program System

92. Drawing on the information and analysis presented in the preceding sections, including a detailed analysis of the environmental and social benefits and risks associated with the Program, assessment of program capacity and performance with respect to the policy and legal framework, the institutional context, and the existing environment and social management procedures, the analysis presented here on the Program systems' consistency with each of the six Core Principles outlined in OP 9.00 namely:
    - Core Principle 1 – Environmental Legal Framework
    - Core Principle 2 – Environmental Screening
    - Core Principle 3 – Worker Safety
    - Core Principle 4 – Land Acquisition
    - Core Principle 5 – Equitable Access and Vulnerable groups
    - Core Principle 6 – Social Conflict

93. The environmental Core Principles are in Tables 7 and 8 and organized through a synthesis of the main findings using the SWOT (Strengths-Weaknesses-Opportunities-Threats) approach. The SWOT is adapted and applied to the Program and PforR context in the following way:
    i. Strengths of the system, or where it functions effectively and efficiently and is consistent with OP 9.00;
    ii. Gaps in the system with respect to the OP 9.00 principles;
    iii. Opportunities to strengthen the existing system;
    iv. Risks that, if unaddressed, may undermine the effective implementation of the opportunities to strengthen the system.

94. The social core principles assessments are in Table 8 and examine the gaps and areas in need of capacity building.

6.1 Assessment of Environmental Program Systems

Table 7: Environmental Core Principles Assessment

Core Principle 1: General Principle of Environmental and Social Management	
OP 9.00: Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in Program design; (b) avoid, minimize or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program's environmental and social effects. **BP 9.00: Program procedures will:** **Operate within an adequate legal and regulatory framework to guide environmental and social impact assessments at the program level.** Incorporate recognized elements of environmental and social assessment good practice, including (a) early screening of potential effects; (b) consideration of strategic, technical, and site alternatives (including the "no action" alternative); (c) explicit assessment of potential induced, cumulative, and trans-boundary impacts; (d) identification of measures to mitigate adverse environmental or social impacts that cannot be otherwise avoided or minimized; (e) clear articulation of institutional responsibilities and resources to support implementation of plans; and (f) responsiveness and accountability through stakeholder consultation, timely dissemination of program information, and responsive grievance redress measures	
Applicability: Fully applicable The strengthening of the Pillars is likely to increase the level of services which could lead to expansion in the volume of activities and thus varying degree of environmental impacts, requiring mitigation.	
Strength/Current System 1. Informed decision making relating to the environmental issues in the health is evident in the Federal Government policies and programs. 2. There is well-defined legal/regulatory systems for safeguarding the environment and for excluding or mitigating activities that are likely to have significant adverse impacts on eco-sensitive areas 3. The EIA system provides a comprehensive framework for environmental and social impact assessment broadly consistent with the core principles outlined in OP9.0. FMENV and MoE are quite active to ensuring compliance with EIA Procedures 4. National legislation on environmental screening and regulatory oversight exist 5. Draft building Code(2006) exist to provide comprehensive	Gaps: • The implementation of the existing legal/regulatory provisions faces challenges (due to multiple regulations, overstretched regulatory authorities, weak monitoring etc.). • There is need for mainstreaming the approach to sustainability planning with community involvement into all Program schemes. • SOML weak enforcement capacity is a major concern. While there seem to be adequate legal and institutional framework for managing wastes resulting from health care, the ability of the relevant institutions to enforcing the extant laws is rather weak and would require further strengthening. • Poor compliance with local environmental regulations and good practices in waste management such as

standards and guidelines for construction/rehabilitation management 6. EIA capacity training for SOML is likely to be continued 7. Environment management; insufficient political will; inadequate and mismanaged funding; a low degree of public awareness of environmental issues; and a top–down approach to the planning and implementation of environmental programs.	segregation and pre-treatment – this represents a significant risk and should be addressed through the Program Action Plan in adequacy of sanitary land fill sites leads to poor disposal of waste – this represents a substantial risk to the local population, but it can be easily mitigated through application of the existing medical waste management guidelines strengthened through the program • Shortage of environment and social officers at the Health facilities requiring special attention
Opportunities: • The states & FMOH have experience of integrating rules and procedures for environmental and social management in individual projects generally • **The existing system provides guidance on screening for potential environmental impacts and risks –** • **Ongoing performance appraisal and institutional rewards under the SOML Program and use of balanced scorecard approach covering health centers linking performance to rewards.** • **SDI survey for health facility will regularly inform the program managers and policy makers regarding the status of the environmental and social management processes.** • **Proposed health facility surveys for quality of care indicators based on a harmonized SDI-SARA methodology that is being developed at global level.** • **Innovations by regions and facilities to retain health care workers.** • **Implementation of the national policy on health care waste management to strengthen capacity to assess and manage environmental and health impacts.** • **Development of technical guidelines for environmental screening.**	Risks: • Addressing the environmental management needs and challenges depends on capacity building of the key sector organizations both in terms of human resources and training, and strong monitoring. • Poor implementation of the strengthened environmental and social management rules and procedures is a possible risk. • Not strengthening institutional capacity particularly and inability to enforce the current environmental regulations in a timely fashion are the two key risks that could lead to localized environmental issues affecting local population and surrounding. Both risks are deemed moderate to significant given the anticipated scope of the program activities. These risks should be mitigated through a combination of improved compliance with national legislation and existing guidelines; use of guidance outlined in safeguard instruments of the SOML pillar; and implementation of specific actions included in the various project - PforR Program Action Plan, as well as dedicated Bank implementation support. • Not capitalizing the opportunities to address the gaps in a timely fashion will lead to localized environmental health problems among the population and environmental pollution in areas. Both risks are deemed

• **Identification of appropriate temporary storage facilities near health facilities for hazardous waste and transportation to appropriate final disposal sites.**	moderate to significant and should be mitigated through a combination of dedicated enforcement of health facility compliance with national legislation and existing guidelines, application of all provisions of the Pillars of support of SOML program that address the key gaps identified through the ESSA analysis • Specific actions included in the PforR Program Action Plan (e.g., technical guidelines for appropriate storage facilities for hazardous waste and transport to appropriate final disposal sites) as well as dedicated Bank implementation support.

Core Principle 2: Natural Habitats and Physical Cultural Resources
OP 9.00: Environmental and social management procedures and processes are designed to avoid, minimize and mitigate against adverse effects on natural habitats and physical cultural resources resulting from program.
BP 9.00:As relevant, the program to be supported: • Includes appropriate measures for early identification and screening of potentially important biodiversity and cultural resource areas. • Supports and promotes the conservation, maintenance, and rehabilitation of natural habitats; avoids the significant conversion or degradation of critical natural habitats, and if avoiding the significant conversion of natural habitats is not technically feasible, includes measures to mitigate or offset impacts or program activities. • Takes into account potential adverse effects on physical cultural property and, as warranted, provides adequate measures to avoid, minimize, or mitigate such effects.
Applicability: Not applicable SOML activities will likely not generate impact on natural habitats and physical and cultural resources since civil works will only be limited to renovation of existing structure; confined to a small geographical location; and expected to have a small physical footprint. Adverse impacts on natural habitats and any chance finds shall be avoided

Core Principle 3: Public and Worker Safety
OP 9.00: Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with (a) operations of facilities or other operational practices developed or promoted under the program; and (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials.
BP 9.00:

- Promotes community, individual, and worker safety through the safe design, construction, operation, and maintenance of physical infrastructure, or in carrying out activities that may be dependent on such infrastructure with safety measures, inspections, or remedial works incorporated as needed.
- Promotes use of recognized good practice in the production, management, storage, transport, and disposal of hazardous materials generated through program construction or operations; and promotes use of integrated pest management practices to manage or reduce pests or disease vectors; and provides training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions.
- Includes measures to avoid, minimize, or mitigate community, individual, and worker risks when program activities are located within areas prone to natural hazards such as floods, or other severe weather or climate events.

- Applicability: Applicable

Use of chemicals could expose the general public to air pollution, water pollution, solid waste and toxic or hazardous materials at sites

Strength/Current System:	Gaps:
• The legal/regulatory system in the state includes provisions for safeguarding people and environment and is thus applicable to regulating the disposal of toxic chemicals, hazardous wastes, etc. • There are national policies and guidelines addressing public and worker safety. These cover a range of important aspects including environmental pollution control; labor laws; occupational health safety regulations; and standards for workplace environmental emissions and discharges • The national EIA system does not comprehensively encompass aspects of public and worker safety • There is general lack of awareness on public health and safety issues, particularly in relation to exposure to hazardous chemicals; workplace safety aspects in hazard prone areas etc.	• Implementation capacities need to be strengthened for areas relevant staff to appreciate the need to ensure occupational health and safety • Waste management – inappropriate e methods need to be strengthened with the provision of non-polluting source of health care waste management. • The national EIA system does not comprehensively encompass aspects of public and worker safety. • Site selection criteria issued by the FMOH for health centers may not incorporate government guidance on avoiding hazard prone areas. • Health workers are prone to occupational hazards such as needle pricks. • Poor compliance with health care waste management practices, especially segregation and pre-treatment • Exist with inadequate oversight over health facilities and suppliers who dispose expired medicines improperly. Pesticides and other hazardous material used for vector control are not collected and disposed properly – also impact public and worker safety considerations

Opportunities:	Risks:
• The site specific waste management plan developed and integrated into Program Operational Manual, roll out through the Program, should include references to technical guidelines on public and worker safety relevant to SOML • The annual SDI Survey allow the FMOH to monitor compliance with all recommended public and worker safety measures already embedded in the Program's design.	• Systematic implementation of these provisions requires enhancing awareness in the key sector organizations and strengthened monitoring. • Inability to ensure public and worker safety can result in spread of communicable diseases and may cause physical injuries to the public seeking health services and to health care workers at public health facilities. Though these are avoidable accidents and fatalities could lead to loss of productive days and life. These risks are deemed to be moderate to significant. • Waste management etc. requires better attention to implementation of occupation health and safety issues with regard to service delivery of SOML activities. The waste management issues can be treated, operation phase risks can be mitigated through existing measures in place in the SOML Program. All such measures need to be adopted by the program and monitored closely to ensure compliance and completion of the listed actions.

6.2 Assessment of Social Program Systems

95. Table 8 presents the social aspects of the core principles assessment of the P4R principles

Table 8: Social Core Principles Assessment

Core Principle 4: Land Acquisition
OP 9.00Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement and affected people are able to at least restore, their livelihoods and living standards to pre-project levels.
BP 9.00 • Avoids or minimizes land acquisition and related adverse impacts;

- _ Identifies and addresses economic and social impacts caused by land acquisition or loss of access to natural resources, including those affecting people who may lack full legal rights to assets or resources they use or occupy;
- _ Provides compensation sufficient to purchase replacement assets of equivalent value and to meet any necessary transitional expenses, paid prior to taking of land or restricting access;
- _ Provides supplemental livelihood improvement or restoration measures if taking of land causes loss of income-generating opportunity (e.g., loss of crop production or employment); and
- _ Restores or replaces public infrastructure and community services that may be adversely affected.

Applicability – Not Applicable – There will be no activities that induce land acquisition or involuntary resettlement

Core Principle 5: Cultural Appropriateness and Equitable Access to Program Benefits

OP 9.00 Cultural appropriateness and equitable access to program benefits giving special attention to rights and interests of local communities and to the needs or concerns of vulnerable groups.

Applicability: - Applicable except for the interests of indigenous as there are no indigenous people in Nigeria.

BP 9.00 Due consideration is given to cultural appropriateness of, and equitable access to, program benefits giving special attention to rights and interests of Indigenous Peoples and to the needs or concerns of vulnerable groups. This principle embraces the Program's objectives to reduce inequity based on poverty and to increase the utilization rate of the services among poor and vulnerable women and families.

OP 9.00 Undertakes free, prior, and informed consultations if Indigenous Peoples are potentially affected (positively or negatively) to determine whether there is broad community support for the program _ Ensures that Indigenous Peoples can participate in devising opportunities to benefit from exploitation of customary resources or indigenous knowledge, the latter (indigenous knowledge) to include the consent of the Indigenous Peoples. _ Gives attention to groups vulnerable to hardship or disadvantage, including as relevant the poor, the disabled, women and children, the elderly, or marginalized ethnic groups. If necessary, special measures are taken to promote equitable access to program benefits.

Strengths/Current System:	Gaps:
• There is a commitment at the Federal level to reduce inequity and to improve utilization of PHC services by poor women and their families which is accompanied by adequate funding. • There are discrete examples of good outreach work by health center staff developing programs or initiatives to increase utilization • There is a good system of data gathering and analysis disaggregated by income quintile	Lack of one all-embracing social system which encompasses the identification of the issues, the mitigation and the execution and management of the mitigation to manage these issues in relation to the Program's objectives • Commitment to inequity reduction not always articulated in management systems and staff training • No Annual monitoring system to measure progress

Opportunities: • Development of robust stakeholder management strategy as part of the current outreach program to strengthen and systematize targeting poor women and identifying problems at source. • Improved staff training in social exclusion issues and methodology for improved outreach work • Better alignment between Federal objectives and state and local activities • There are disparities between the poor and rich in health care utilization. SOML-PforR provides an opportunity to address some of these disparities by improving utilization of PHC where the poorest 40% access health services. • Improved staff management and training	Risks • Lack of clarity and consistency regarding payment systems for health services – could drive poor and vulnerable women away from the PHC services • There are still barriers to utilization of PHC services, including cultural, ethnic and gender that hinder progress towards achieving the objective of increased equity.
Core Principle 6 Avoid social conflict,	
BP 9.00 Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.	
OP 9.00 Considers conflict risks, including distributional equity and cultural sensitivities.	
Strengths/Current System • There is a state of emergency in Adamawa, Borno and Yobe. • The incidences of violence associated with Boko Haram and/or pastoralist conflict is likely to divert political attention from other policy issues.	Gaps • It is not known if the state of emergency makes provisions and contingencies for the delivery of PHC health services. • Avoiding social conflict and being cognizant of cultural sensitivities are not embedded in the management of PHC services or systems or the training of staff. • There needs to be some clarity as to how services should be delivered in conflict states.
Opportunities • An ongoing analysis is examining predictors of success but the wide variation in performance itself suggests that state governments can influence key PHC service delivery even in the current context. As there are examples of conflict prone states performing very well such as Adamawa.	Risks • Delivering contraceptive and vaccination services in some conflict/fragile states could exacerbate conflict between those trying to utilize services and those who believe that these types of services should not be delivered. • Within the state of emergency states SOML delivery could be very challenging.

7 Environmental and Social Risk Ratings

96. Overall, the ESSA shows that the Environmental and Social systems are adequate for the Program implementation, with implementation of actions to address the gaps and to enhance performance during implementation. As identified in the identified environmental and social risks range from low to moderate. Table 9 below outlines the main environmental and social risks, their assessment and risk level.

Table 9: Program Environmental and Social Risks Ratings

Associated or Likely Social and Environmental Effects (This section describes the potential benefits, impacts and risks that are likely) Environmental Impact: 1. Potential loss or conversion of natural habitats? 2. Potential pollution or other project externalities? 3. Changes in land or resource use?	**Assessment** The program provides tremendous opportunities to enhance the waste management systems and processes at the health facilities so as to further promote sound public health outcomes, while also ensuring that there are no adverse impacts to the environment. Potential environmental and social impacts are rather small in scope, site specific, not cumulative and relatively easy to remediate. The identified environmental risks are typical of the nature of the SOML pillars. They are manageable, and can be mitigated through strengthening implementation of existing legal/regulatory provisions and Program procedures, sound technical design and operational practice, supported by enhanced capacity. Healthcare waste poses greatest risk amongst the identified risks and experience has proven that when such wastes are properly managed, generally pose no greater risks than that of properly treated municipal or industrial wastes. **Risk Assessment:** Moderate.
Social effects: • Nature/scale of involuntary resettlement or land acquisition required? • Poverty and Equity including Potential Impacts on vulnerable communities	There will be no land acquisition or involuntary resettlement. **Risk Assessment:** None This is a pro-poor program that aims to have a good impact on vulnerable communities. It could potentially significantly improve the lives of vulnerable people. However, the mechanisms to realize this goal will have to be strengthened and monitored carefully with the correct tools.

• Are Indigenous people affected?	**Risk Assessment:** Low to Moderate There are no Indigenous Peoples in the program area. **Risk Assessment:** None
Environmental and Social Context (This section describes the geographical coverage and scope of the Program and environmental and social conditions in the Program area that may have significance for Program design and implementation.) Environment: 1. Does the environmental setting of Program pose any special challenges that need to be taken into account? 2. Program activities in or near sensitive habitat areas? 3. Potential cumulative or induced effects?	**Environment**: Based on the experience within the existing WB supported portfolio and Nigerian legislative framework, the SOML activities are not likely to affect sensitive natural habitats, such as national parks and other protected areas. At the same time, the program needs to ensure the investments are selected and implemented to ensure that (1) ecologically sensitive sites are not negatively affected; (2) to the program activities are designed taking into account potential cumulative negative impacts on the environment. **Risk Assessment: Low**.
Social Other issues identified – avoiding social conflict	The program operates in three conflict-prone states, Adamawa, Yobe and Borno emergencies areas. Therefore there is a significant risk to the effectiveness of the program as it may not be able to deliver any services in some of the states. However, SOML cannot mitigate against this and does not have the remit to do so. Delivery of services in these areas will be challenging. Risk Assessment: High

7.1 Actions to address identified environmental risks and gaps

7.1.1 Summary of key environmental impacts, risks and gaps:

97. The key environmental impacts, risks and gaps identified in the preceding sections are summarized below:
    (i) Challenges in implementation of the existing legal/regulatory provisions due to poor implementation and lack of awareness, etc., requiring strengthening of the capacity of the implementing agencies to comply with the relevant regulations and stronger monitoring of the implementation of procedures at the Local, State & Federal Level.
    (ii) Need to strengthen the existing waste management and monitoring system at facility level
    (iii) occupational health and public safety risks

98. Monitoring arrangements on environmental management that include internal and third-party monitoring of the environmental performance of the Program (with additional emphasis on the identified environmental hotspots) will include an annual assessment to ensure regular tracking of environmental and social performance.

99. The environmental laws and regulations will apply to the entire SOML program of the FGON and commence as part of program preparation or development.

7.2 Capacity building of sector institutions on Environmental Management

100. This includes capacity building and technical assistance on environmental management through strengthening of human resources, and through training.
101. Human resources: The human resources to be positioned in the Environmental Management function needs to be incorporated at the PMU level.

102. Actions to address identified social risks and gaps
103. Key Social Issues Identified are:
    i. Poverty and Equity
    ii. Barriers to Utilization of PHC services including user charges and transport costs
    iii. Other issues identified in section 3

7.3 Social Actions to Address Gaps Identified

104. As described in previous sections, the issues of poverty and equity and utilization barriers require mitigation and technical support. What follows is some of the specific actions needed to enhance the Program's current work and address current gaps related to poverty and equity, and utilization barriers.
    - Technical support to develop and monitor a stakeholder/community engagement strategy
    - Agree on multi-stakeholder consultation framework: a) timeline, b) participating states, c) input to community outreach and MNCH weeks, d) type of stakeholders to be targeted,

- Identify and agree of the role of None-State Actors (CBOs, CSOs, traditional institutions and medical practitioners) with particular focus to - information sharing, and social accountability aspects of the program.

105. The ESSA highlights opportunities available to government to strengthen existing environmental and social management systems applied to the programs supported by the PforR. World Bank Implementation Support (IS) will periodically monitor that no changes have taken place that would reduce the effectiveness of the overall systems as assessed in the ESSA. In addition, World Bank IS will monitor the implementation of the activities outlined in the PAP. An annual assessment of social performance against these objectives will be conducted.

8 Action Plan Inputs

106. The Table below outlines the Action plan for 2015 -2019 for improving regulatory framework and building capacity.

Table 10: Action Plan Inputs

Issues and risks	Actions	Responsibility	Timeframe	Costs (USD)	Indicator
Weak Monitoring and Evaluation of environmental and social systems	Monitoring and evaluation arrangements established and assessment conducted on the performance of the environment and social interventions under SOML program.	FMOH	Annually	Within the existing budget.	Yes/No
Capacity for environmental and social management	Training on environmental and social management.	FMOH	Annually	Within the existing budget	Yes/No

Annex 1: Environmental Administrative Framework - The Regulators

The National Policy on Environment, 1989 (revised 1999), provides for "*a viable national mechanism for cooperation, coordination and regular consultation, as well as harmonious management of the policy formulation and implementation process which requires the establishment of effective institutions and linkages within and among the various tiers of government – Federal, State and Local Government*".

National Level Institutions

1. National Council on Environment

- This is the apex policy making organ on environment.
  - Participates in the formulation, coordination, harmonization and implementation of national sustainable development policies and measures for broad national development.
- The Council consists of the Minister of Environment, Minister of State for Environment, and State Commissioners of Environment, and meets regularly to
  - consider and receive States' reports on environmental management;
  - consider national environmental priorities and action plans as it affects Federal and State governments;
- The Federal Ministry of Environment gives financial and technical assistance to States having problems in implementing environmental policies.

2. Federal Ministry of Environment (FMENV)

- Set up by Presidential Directive No. Ref. No. SGF.6/S.221 of October 12, 1999 and empowered to regulate all environmental matters in order to protect enhance and preserve the Nigerian environment
- Carries out the Federal Executive Council decisions on environmental matters.
- Forms the focal point and designated National Authority for the implementation of various international laws on environmental protection/conservation.
- Mandated to co-ordinate the environmental protection and conservation of natural resources for sustainable development in Nigeria some of which are:
  - monitor and enforce environmental protection measures;
  - enforce international laws, conventions, protocols and treaties on the environment;
  - prescribe standards and make regulations on air quality, water quality, pollution and effluent limitations, the atmosphere and ozone layer protection, control of toxic and hazardous substances; and
  - Promote cooperation with similar bodies in other countries and international agencies connected with environmental protection.

In response to its mandate the Ministry has developed far reaching legal reference instruments for achieving environmentally sound management of resources and sustainable development across all major sectors of the economy.

Agencies/Parastatal Under the Federal Ministry of Environment
The Ministry is supervising the activities of Five Agencies with only two relevant to the program, namely:

a. **National Environmental Standards and Regulations Enforcement Agency (NESREA)**

National Environmental Standards and Regulations Enforcement Agency (NESREA) [with Gazette No. 92, Vol. 94 of 31st July, 2007 with responsibility for the protection and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology, including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations, rules, laws, policies and guidelines.

b. Environmental Health Officers' Registration Council of Nigeria (EHORECON) Established by Act 11 of 2002

3. State Level Institutions

Each State of the Federation has an Environment Ministry/EPA that is charged with the responsibility of providing decent, orderly and reasonable conducive environment for habitable society, as contained in the assignments of Ministerial responsibilities.
Inter alia, the Ministry is empowered to give direction to all issues concerning the environment; monitor and control pollution and the disposal of solid, gaseous and liquid wastes generated by various facilities in the state.

Some of the functions of the State Ministry of Environment include:

(i) Liaising with the Federal Ministry of Environment (FMENV) to achieve a healthy or better management of the environment via development of National Policy on Environment
(ii) Co-operating with FMENV and other National Directorates/Agencies in the performance of environmental functions including environmental education/awareness to the citizenry
(iii) Responsibility for monitoring waste management standards,
(iv) Responsibility for general environmental matters in the State, and
(v) Monitoring the implementation of EIA studies and other environmental studies for all development projects in the State.

4. Legal and Administrative Structure at Local Government Level

The Local Government Councils in Nigeria, without any specific laws on environmental management are charged with the following responsibilities, inter alia:

- Co-ordinating the activities of Local Government Council;
- Maintenance of Law and Order in collaboration with Law Enforcement Agencies;
- Collection of taxes and fees;
- Establishment and maintenance of cemeteries, burial grounds and homes for the destitute or infirm
- Establishment, maintenance and regulation of markets, motor parks and public conveniences;
- Construction and maintenance of roads, streets, drains and other public highways, parks, and open spaces;
- Naming of roads and streets and numbering of houses;
- Provision and maintenance of public transportation and refuse disposal;
- Registration of births, deaths and marriages;

5. Relevant Regulatory Instruments

Generally, duty and responsibility for environmental protection and management related to the various sectors of Nigerian economy are mandated under:

- Current Federal, State and Local and relevant acts, rules, regulations and standards, and the common law of the Federal Republic of Nigeria (FRN)
- International environmental agreements and treaties ratified by the Federal Republic of Nigeria

An outline of the relevant instruments for health institutions is given below in relation to the various levels:

Federal Policy/Legislations

The Nigeria Constitution and National Policy on Environment

1. Constitution of the Federal Republic of Nigeria (1999)

This forms the basic foundation for the laws and regulations that affect healthcare waste management in Nigeria. This serves as the national legal order which recognizes the importance of improving and protecting the environment and makes provision for it.

- Section 20 makes it an objective of the Nigerian State to improve and protect the air, land, water, forest and wildlife of Nigeria.
- Section 12 establishes, though impliedly, that international treaties (including environmental treaties) ratified by the National Assembly should be implemented as law in Nigeria.
- Section 33 and 34 which guarantee fundamental human rights to life and human dignity respectively, have also being argued to be linked to the need for a healthy and safe environment to give these rights effect.

2. The National Policy on Environment

The purpose of the National Policy on the Environment is to define a framework for environmental governance in Nigeria. The National Policy on Environment, 1989 (revised 1999), provides for "a viable national mechanism for cooperation, coordination and regular consultation, as well as harmonious management of the policy formulation and implementation process which requires the establishment of effective institutions and linkages within and among the various tiers of government – federal, state and local government". Prior to the launching of this policy, there was no unified coordination of activities of the 3 tiers of government responsible for the environment.

The thrust of the policy is the achievement of sustainable development in Nigeria. Guidelines and strategies are therefore defined for:

- ✓ Securing for all Nigerians a quality of environment adequate for their health and well-being;
- ✓ Conserving and using the natural resources for the benefit of present and future generations;
- ✓ Restoring, maintaining and enhancing the ecosystem and ecological processes essential for the preservation of biological diversity;
- ✓ Raising public awareness and promoting the understanding of essential linkages between the environment, resources and development; and
- ✓ Cooperation with other countries, international organizations and agencies

Further, the defined guidelines and strategies provide for the effective management of the environment in the following 14 major areas: Human population; Land use and soil conservation; Water resources management; Forestry, wildlife and protected areas; Marine and coastal area

resources; Toxic and hazardous substances; Energy production and use; Air pollution; Noise pollution; Working environment (occupational health and safety); and Settlements, recreational space, greenbelts monuments and cultural property.

3. Some Thematic (Area) Policies on Environment-

In addition to the National Policy on Environment, there are other policy documents on some thematic areas of the Ministry's mandate. These include:

i. **Environmental Enforcement Policy:**
This policy aims at providing actions to take in enforcing environmental legislation, standards, regulations and guidelines fairly and appropriately in a manner that will protect environmental quality and safeguard public health.

ii. **National Environmental Sanitation Policy:**
This policy seeks to stimulate, promote and strengthen all government regulations concerned with housing and urban development, food security water supply, sanitation related endemic diseases and illnesses, flood and erosion control, drought control, school health services and environmental education.

iii. **National Policy Guidelines on Sanitary Inspection of Premises:** This policy seeks to promote clean and healthy environment for the populace.

iv. **National Policy Guidelines on Solid Waste Management:**
The aim of this policy is to improve and safeguard public health and welfare through efficient sanitary Solid Waste Management methods that will be economical, sustainable and guarantee sound environmental health.

v. **National Policy Guidelines on Pest and Vector Control:**
This policy is to establish and strengthen pest and vector control units at the three tiers of government.

vi. **National Policy Guidelines on Food Sanitation:**
The main objective of the policy is to enhance food security, public health and quality of life through the promotion of sound food sanitation practices in all food premises in the country.

vii. **National Environnemental Sanitation Action Plan:**
This plan is aimed at increasing National productivity and foster Economic Development through improved Environmental sanitation practices.

4. Environmental Laws/Acts

1. Environmental Impact Assessment (EIA) Act No. 86 of 1992

This act stipulates that the public or private sector of the economy shall not undertake or embark or authorize projects of activities without prior consideration at an early stage, of their environmental effects. It also makes it a mandatory requirement for all existing industries to carry out an Environmental Audit once in three years after the initial Environmental Impact Assessment (EIA).

2. Guidelines on Environmental Audit (1999 updated in 2010)

This made it mandatory for existing industries to carry out environmental audit that involves systematic, documented, periodic and objective evaluation of how an existing industrial facility with its management and equipment are complying with regulatory standards.

3. The Harmful Waste (Special Criminal Provision Etc.) Act 1988

The Act was enacted with the specific object of prohibiting the carrying, depositing and dumping of hazardous wastes on any land, territorial waters and matters relating thereto. This Act is essentially a penal legislation. The offences are constituted as doing any of the act or omission stated in the section 12 of the act. The jurisdiction of the Act is far reaching as it sought to remove any immunity conferred by diplomatic immunities and privileges Act on any offender for the purpose of criminal prosecution. Section 6 of the Act provides a very stringent sentence of life imprisonment and in addition the forfeiture of any aircraft, vehicle or land connected with or involved with the violation.

4. Criminal Code

The Nigerian Criminal Code makes it an offence punishable with up to 6 month imprisonment for any person who:

a. Violates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carry on business in the neighborhood, or passing along a public way: or
b. Does any act which is, and which he knows or has reason to believe to be likely to spread the infection of any disease dangerous to life, whether human or animal.

5. National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007

This Act established NESREA and charged it with the responsibility of protecting and developing the environment in Nigeria, as well as enforcing all environmental laws, regulations, standards, policies, guidelines and conventions on the environment to which Nigeria is a signatory. By the NESREA Act, the Federal Environmental Protection Agency Act Cap F 10 LFN 2004 was repealed.

The Act also enables Agency to also:

- Prohibit process and use of equipment or technology that undermine environmental quality;
- Conduct field follow-up of compliance with set standards and take procedures prescribed by law against any violator;

6. Nuclear Safety and Radiation Protection Act No. 19 of 1995 (**CAP N142, LFN 2004)**

- Concerned with the regulation of the use of radioactive substances and equipment emitting and generating ionizing radiation
- **Section 4** provides authority to make regulations for the protection of the environment from the harmful effects of ionizing radiation.
- **Section 15 and 16** makes registration of premises and the restriction of ionizing radiation sources to those premises mandatory.
- **Section 37 (1) (b)** allows an inspector verify records of activities that pertain to the environment.

- **Section 40** clarifies that the same regulations guiding the transportation of dangerous goods by air, land or water should also apply to the transportation of radioactive substances.
- Regulate the introduction of radioactive sources, equipment or practices and of existing sources, equipment and practices involving exposure of workers and the general public to ionizing radiation.

Environmental Regulations

Many laws and regulatory measures have been put in place to promote sustainable environmental management in many sectors of the economy. Some of the critical acts include:

1. **National Environmental** (**Sanitation and Wastes Control) Regulations, S. I. No. 28 of 2009**:
   The purpose of this Regulation is to provide the legal framework for the adoption of sustainable and environment friendly practices in environmental sanitation and waste management to minimize pollution.
2. **National Environmental (Permitting and Licensing System) Regulations, S. I. No. 29 of 2009**:
   The provisions of this Regulation enable consistent application of environmental laws, regulations and standards in all sectors of the economy and geographical region.
3. **National Environmental (Ozone Layer Protection) Regulations, S. I. No. 32 of 2009:**
   The provisions of this Regulation seek to prohibit the importation, manufacture, sale and the use of ozone-depleting substances.
4. **National Environnemental (Noise Standards and Control) Régulations, S. I. No. 35 of 2009**:
   The main objective of the provisions of this Regulation is to ensure tranquility of the human environment or surrounding and their psychological well-being by regulating noise levels.
5. **National Environmental** (**Control of Bush/Forest Fire and Open Burning) Regulations, S. I. No. 15 of 2011**:
   The principal thrust of this Regulation is to prevent and minimize the destruction of ecosystem through fire outbreak and burning of any material that may affect the health of the ecosystem through the emission of hazardous air pollutants.
6. **National Environmental** (**Construction Sector) Regulations, S. I. No. 19 of 2011**:
   The purpose of this Regulation is to prevent and minimize pollution of the Nigerian Environment from the impacting activities of Construction, Decommission and Demolition.
7. **National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, S. I. No. 20 of 2011**:
   The purpose of this Regulation is to safeguard the Nigerian environment against pollutants from vehicular emission.
8. **National Environmental** (**Surface and Groundwater Quality Control) Regulations, S. I. No. 22 of 2011:**
   The purpose of this Regulation is to restore, enhance and preserve the physical, chemical and biological integrity of the nation's surface waters, and to maintain existing water uses.

Environmental Guidelines

Some of the National guidelines that have been put in place by Government include:

- National Environmental Health Practice Regulations 2007 regulates environmental health practice.
- Guidelines on Hazardous Chemicals Management;
- Guidelines on Pesticides Management;
- National Chemical Management Profile to assess chemicals management infrastructure;
- National Implementation Strategy for Chemicals Hazard Communication;
- The National Implementation Plan for Persistent Organic Pollutants; and
- National Environmental Health Practice Regulations, 2007.

Federal Ministry of Environment Initiated Bills

The Ministry has initiated numerous Bills. Some are before the National Assembly. There are those that have been forwarded to the Federal Ministry of Justice for processing while others are at the levels of preparation within the Ministry:

1. **Bills before the National Assembly**
   a. Response, Compensation and Liability for Environmental Damage (RECLED) Bill

2. **Bills at the Federal Ministry of Justice for processing**
   a. Climate Change Agency Bill
   b. Forestry Bill
   c. Domestication of the Kyoto Protocol Bill.
   d. Review of the Ozone Depleting Substances (ODS) Bill

3. **Bills Being Prepared at the Ministerial Level**
   a. National Biodiversity Conservation Agency Bill;
   b. National Environmental Management Bill;
   c. Chemicals Management Bill.

4. **Draft Policies Being Prepared at the Ministerial Level**
   a. The National Globally Harmonized System (GHS) Implementation Strategy (NIS);
   b. Guideline for proper disposal of Impounded/Seized goods;
   c. The National Biosafety Policy;
   d. NESREA Strategic Action Plan;
   e. Review of the National Oil Spill Contingency Plan;
   f. Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants (POPs) for Nigeria;
   g. Classification Of The National Park Service As A Para-Military Organization;
   h. Climate Change Action Plan;
   i. National Policy on Climate Change;
   j. Revised National Policy on Environment

Relevant Regulations - list of HCWM legal documents

	FEDERAL LEGISLATIONS	AREAS COVERED

1	Constitution of the Federal Republic of Nigeria 1999	Good governance and welfare of all persons in Nigeria
2	National Policy on Environment	Environmental conservation and restoration in cases where degradation has occurred
3	National Master plan for Public awareness (PA) on Environment and Natural Resources conservation in Nigeria	Geared towards ensuring sustainable development through proper environmental management
4	Federal Environmental Protection Agency Act	The agency is the predecessor of the Federal Ministry of Environment
5.	Appendix 2. Federal Environmental Protection Agency Decree No 58 of 30th Dec. 1988	Protection of Environment within Nigeria borders
6.	Harmful Waste (Special Criminal Provisions Decree)	Penalties for deposition of harmful wastes
7.	Environmental Impact Assessment Act (Decree No. 86) 1992	Solid waste, effluent discharge and atmospheric emission
8.	Workmen compensation Act 1987 (Laws of the Federation of Nigeria, 1990)	Occupational health and safety
9.	Nigerian Urban and Regional Planning Decree No 88 of 1992	Planned development of urban areas (to include and manage waste sites)
	STATE LEGISLATIONS (These are common to most states of the Federation	AREAS COVERED
1	Environmental Sanitation edicts, laws and enforcement agencies	General environmental health and sanitation. Enforcing necessary laws
2.	Public Health Law	Covering public health matters
3.	State waste management laws (Lagos State, Bayelsa state etc.)	Ensure proper disposal of waste and clearing of wastes
4.	Private hospitals registration edicts	Ensures proper record keeping of available private health establishments
5.	Building line laws	To ensure proper building plans within stipulated areas.
6	Prohibition of indiscriminate dumping of refuse acts	To prevent indiscriminate dumping
7.	Environmental pollution control and compensation laws and edicts	Control pollution and ensure compensation as necessary
8.	State Waste Disposal Edicts	To ensure proper disposal of waste

Annex 2: Overview of the Nigeria Health Care Waste Management Policy, Plan and Guidelines:

The implementation of safe practice of Healthcare Waste Management (HCWM) in public and private medical institutions is a priority issue which the Federal Ministry of Environment in collaboration with Federal Ministry of Health and other stakeholders have decided to address.

The Nigeria EIA Act 92 of 1986 and Decree No 58, of 1988 as amended by Harmful Wastes Act Cap 165 LFN 1990 and Waste Management Regulations S.I.15 1991 are defective as they did not encapsulate any broad policy framework that has direct influence on Health care waste management neither did they take cognizance of the fact the scope of Health care waste incineration processes should include monitoring of emissions and standards.

Though the EIA Act No 86 of 1992, categorized health programs, family planning programs, and nutritional programs as Category 3 it noted that in the event that the project location involves physical interventions in the environment the project is categorized as 2 requiring an EIA study.
The Revised National policy on Environment (1999, FMEnv), the National Policy on Injection safety and HCWM (2007, FMOH), though did not specifically address healthcare waste management in its entirety, provides the basis for the development of a National HCWM Policy in Nigeria. Although Nigeria has ratified some international Conventions such as the Basel Convention, there is currently no specific framework, legislation, regulations or by-laws for healthcare waste management practices in Nigeria. In spite of existing different legal edits, bye-laws referencing healthcare waste management in Nigeria, safe HCWM is far from being achieved.

It is important to note that neither the National Healthcare bill nor National Environmental Management Bill before the National Assembly make specific and detailed provisions for HCWM in Nigeria.

In view of the challenges presented by healthcare waste and its management in Nigeria, the Federal Ministry of Health in collaboration with the Federal Ministry of Environment instituted the National Healthcare Waste Management (NHCWM) Working Committee for the development of a National Healthcare Waste Management Policy, Guidelines and Plan of actions.

These documents which are standalone but complementary were validated by stakeholders at the National Stakeholders forum and are intended to address environmental and health problems associated with poor management of healthcare wastes. They provide the roadmap to introducing Safe Healthcare Waste Management (HCWM) practices to all Healthcare facilities in Nigeria. The development of this policy will set out clear guidelines for the national framework on HCWM in the country. The implementation of the Policy follows the existing governance and healthcare delivery system structures in the country. The operation of the HCWM plan and guideline covers activities at the national, state and local government levels. Both the public and private medical institutions in the country are expected to set up their HCWM plans following the guidelines provided and in line with national policy.

A brief highlight of the intended objectives of the three instruments designed to standardizing Healthcare Wastes Management (HCWM) practices in Nigeria is presented below

National Healthcare Waste Management Policy, 2013

The HCWM Policy subscribes to the vision, goals and principles and the regulatory approach set out in the National Environmental Policy.

The policy applies to both public and private medical/health institutions in Nigeria, and at the national, state and local Government levels. The healthcare waste management policy is expected to be implemented in a holistic manner in the generation, storage, collection, transportation, treatment, the final disposal of the waste, and after care of the disposal site. The Policy also serves as statement of intent by the Government of Nigeria on how to manage and minimize waste generated from both the public and private health institutions, in a way that takes cognizance of the health of those handling the healthcare waste, the environment and the community so affected.

The goal of the Policy is to create an enabling environment that contributes to effective and efficient healthcare waste management practices with minimal harmful environmental impact.

This policy which seeks to hold every Health Care facility accountable for the safe handling and disposal of health care waste it generates has specific objectives as follow:

- To promote best practices in healthcare waste management in all Health Care institutions in Nigeria
- To institute mechanisms for effective and sustainable healthcare waste management practices at all levels in Nigeria
- To promote the development of institutional and human capacities for effective implementation of healthcare waste management activities in all medical institutions in Nigeria.
- To provide a mechanism, for effective coordination of healthcare waste management activities in all medical establishments in Nigeria.
- To mobilize resources for effective and sustainable implementation of healthcare waste management activities in all medical institutions in Nigeria.
- To set standard of healthcare waste management practices that meet international requirements.
- To promote partnership among various key players involved in environmental protection/conservation efforts
- To promote/support operational research in healthcare waste management practices and their impact on environment/community.

The main features of the policy include: Justification for the HCWM Policy, Purpose of the HCWM Policy, Policy Goal & Objectives, Guiding Principles, Policy Statement, Safe Healthcare Waste Management Practices, Protection of Staff, Patients and Environment from risks associated with Healthcare Waste, Institutional Framework for Policy Implementation (Operational Guidelines), Setting up of Infection Prevention and Control committees with Health Care Waste Management Committees as subset in all Health Care Facilities (HCFs), Infrastructural & Human Capacities Development, Resource Mobilization, Public-Private Partnership (PPP), The Greenhouse Effect, Research, Monitoring & Evaluation and Legislation.

National Healthcare Waste Management Strategic Plan (2013-2017)

The National Healthcare Waste Management Plan (NHCWMP) is a five-year implementation plan for healthcare waste management in the country designed to provide an approach to the management of healthcare waste that is safe for HCFs, waste handlers, the public and the environment as well as being cost effective and practical.

The plan contains the following main parts or features situational analysis, organization of health system in Nigeria, legal and regulatory HCWM frameworks, characterization of HCW production in Nigeria, characterization of HCW practices in Nigeria, appraisal of the institutional capacities of the health system and recommendations for HCWM at all levels with national action plan *strategy and implementation, estimations of cost for NHCWMP and a* five-year calendar of activities

The NHCWMP objectives include:

- Develop and implement a *National Action Plan* based on the analysis of current HCW management and disposal practices;
- Develop standardized and simple HCWM procedures in the HCFs of the country and provide appropriate treatment and disposal technologies, taking into consideration the financial and institutional capacities of local, regional institutions;
- Develop a strategy for the implementation of the national HCWM Plan in Nigeria.

The implementation of the objectives contained in the *National HCWM Plan* requires the development of specific actions included in the *National Action Plan* (NAP) which is recommended for periodic monitoring and review with a typical timeframe of around 5 years.

The NHCWM Plan recommends the establishment of a NHCWM steering committee, to ensure the coordination and supervision of the NHCWM Plan at the National level and State and LGA HCWM steering committees.

The Plan strongly recommended the following levels of supervision and coordination:

- At National level, the NSCHCWM is in charge of the monitoring and supervision of the National HCWM Plan. The PC is in charge of its implementation and supervises the activities of the Work Groups;
- At State level, the SSCHCWM is in charge of the monitoring and supervision of the HCWM plan. They nominate a state Coordinator who is responsible for the smooth implementation of the HCWM plans at state level. He/she reports to the PC and the SSC;
- At Facility level, Hospital Management is administratively responsible for the implementation of a HCWM plan within the institution. The Hospital Management nominates the HCWMO, who shall be a licensed Environmental Health Officer who has the entire responsibility with the HCWMC/IPCC to set-up Hospital HCWM Plans.

National HealthCare Waste Management Guidelines, 2013

The National HCWM Guidelines are intended to identify appropriate HCWM methods that can be applied to both public and private health care facilities in Nigeria. The guidelines are designed to provide better knowledge of the fundamentals of HCWM systems and planning, including a better understanding of the risks associated with health care waste.

Specifically, they are designed to:

1) Identify HCWM procedures and plans that are protective for both human health and the environment, in compliance with current and pending environmental and health legislation in Nigeria and taking into consideration the characteristics of each health facility.
2) Set priority actions in order to tackle the most sensitive problems related to HCWM (e.g. disposal of sharps).
3) Review appropriate and sustainable technologies to treat and dispose of health care waste (HCW).

4) Facilitate the analysis of HCWM problems and develop strategies for safe management of HCW at all levels

The National Health Care Waste Management Guidelines is designed to be implemented in all the medical institutions of Nigeria. The National HCWM Guidelines are intended for:

- Medical staff having "duty of care" at all levels of both private and public health facilities, namely: Directors, hospital heads of department, Chief Executive Officers of Tertiary health facilities, administrators, doctors, matrons, infection control officers, pharmacists, laboratory scientists, environmental health officers and waste handlers.
- Policy makers in charge of developing, implementing, and evaluating HCWM plans at Federal state and Local Government levels as well as Environmental Health Officers in charge of implementation and monitoring of HCWM plans.
- Teaching hospitals, schools of nursing and midwifery, schools of health technology and schools of hygiene.
- International Organizations, NGOs, and all Stakeholders in HCWM in Nigeria.

Essentially the guideline contained the following main features: The audience, definitions of health care waste in Nigeria, risks associated with health care waste principles of safe health care waste management, collection, storage, and transportation of HCW, health care waste treatment and disposal options in Nigeria, accidents and spillage, development and implementation of HCWM plans in HCF.

10. Annex 3: Health Care Waste Management options applicable (for both primary and secondary healthcare facilities based on Healthcare Waste Management Plan for the Nigeria State Health Programmatic Investment Credit, 2011).

HCWM minimization

To reduce the amount of hazardous HCW generated at Primary and Secondary healthcare facilities in Nigeria;

- The use of recyclable materials and products should be encouraged;
- Encourage a preference for oral alternatives in place of injections in treatment when appropriate;
- ensure good management and control practices especially in the purchase and use of pharmaceuticals; and,
- enforce a rigorous and careful segregation of HCW at source.

Segregation

Correct waste segregation is the fundamental first step for efficiently and effectively managing HCW. Proper segregation of waste at source will also reduce the quantity of waste requiring treatment prior to final disposal.

SEGREGATION OF MEDICAL WASTE

Courtesy: JSI/MMIS

Infectious and other hazardous waste must be segregated at source and put in appropriate color–coded containers/bags as recommended by the National HCWM Guidelines. In particular, sharps must be segregated from other HCW at their point of generation.

Important elements specific to the segregation of sharps include:

1. Sharps boxes, should be used strictly for sharps. Where there is a difficulty in getting sharps boxes, the use of recycled cardboard boxes is acceptable if it is puncture resistant, securely in place, easy to insert sharps, contains sharps without risk of spillage, and is well labelled.
2. No healthcare waste other than sharps should be deposited in sharps containers. When a disposable syringe is used, the packaging should be placed in the general waste bin and the used syringe in the sharps container.
3. Syringes and needles must be discarded of immediately following use without needles being removed from syringe, recapped, bent or broken before disposal (except where the healthcare facility has appropriate needle cutters/removers in place).
4. The whole combination must be inserted into the safety box directly after use. If removal of the needle is required, special care must be taken.

Color Coding

The color coding system for HCW as recommended by the Nigeria National Healthcare Wastes Management Guidelines document is black, yellow and red in primary healthcare facilities, and black, yellow, red, and brown in secondary and tertiary healthcare facilities, and is one of the efficient ways of achieving segregation of waste and for sorting out items such as paper, plastic, glass and metal for recycling.

- Color coding for plastic bags should correspond or match whenever possible the waste containers.

Recommended segregation and color coding system in Nigeria

It is essential that clinical and related wastes are properly segregated, packaged, labelled, handled and transported to minimize risk to waste handlers and the community, such as needle stick injuries and transmission of infectious diseases.

Recommended color coding system for primary HCFs in Nigeria

Black	Yellow
• non-risk waste of category	• infectious waste and highly infectious waste • sharps collected in yellow, puncture-proof containers

Recommended color coding system for secondary HCF in Nigeria

Black	Yellow	Red	Brown
• non-risk(domestic) waste	• infectious waste • sharps collected in yellow, puncture-proof containers	• highly infectious waste	• pharmaceutical waste, some chemical waste, heavy metal wastes

Class	Labelling	International symbols
2	« Danger! Hazardous infectious waste »	
3	« Danger! Contaminated sharps, do not open »	
4	« Danger! Anatomical waste, to be incinerated or deeply buried »	
5	« Danger! To be discarded by authorized staff only »	
6	« Danger! Highly infectious waste, to be pre-treated »	
7	« Danger! Radioactive waste »	

Courtesy: Draft National Healthcare Waste Management Guidelines for Nigeria

- All waste bags or containers should be labelled with basic information in English and the local language of the area where the HCF is located. Basic label information should include type of waste in the container; name of the ward/facility, date of collection and, warning of hazardous nature.
- Provide Color-coded refuse bags & bins (Black, yellow and red for the primary healthcare facilities) and (black, yellow, brown and red for the General Hospitals.

- Ensure the provision of Sharps boxes to the healthcare facilities, and these must be available at the points of wastes generation.
- Introduce segregation code of practice to be followed in each hospital.
- Training - Continuous training of staff.
- Reinforce on-job training and supervision.

HCW Collection

After proper segregation is performed, it is important that routine collection of waste is conducted. Health care waste collection must be performed on a regular schedule by designated personnel and carried out along well-defined routes within the HCF.

- When full, all health care waste containers must be sealed to prevent spilling during handling and transportation
- Bins/boxes and collection receptacles must not be overfilled and must be transported in carts well fitted to prevent spillages.

Courtesy: JSI/MMIS

- Sanitary staff and cleaners should always wear Personal Protective Equipment (PPE) including, as a minimum, overalls or industrial aprons, nose mask, heavy duty gloves, and safety boots.
- Regulations and supervisory arrangements must be set in-place to ensure that personnel utilize PPE when on duty.
- No bags should be removed unless they are labelled with their point of production (hospital and ward or department) and contents.
- The bags or containers should be replaced immediately with new ones of the same type.
- A supply of fresh collection bags or containers should be readily available at all locations where waste is produced.
- Containers for waste collection should meet the following requirements:
    - Non-transparent;
    - Impervious to moisture;
    - Sufficient strength to prevent easy damage during handling or use;
    - Leak resistant;
    - Close-fitted lids;
    - Fitted with handles for easy manipulation;
    - Light weight and convenient;
    - Designed to minimize physical contact.
- Nursing and other clinical staff should ensure that waste bags are tightly sealed when three-quarters full by tying the neck or sealing tag. Bags should not be closed by stapling.
- Sealed sharps containers should be placed in a labelled, yellow infectious health-care waste bag before removal from the hospital ward or department.
- Wastes should not be allowed to accumulate at the point of production.
- Routine programs for waste collection should be established as part of the hospital's waste management plan (daily or as frequently as is necessary) and should be transported to a central storage site or treatment site.

- Collection carts should be easy to load and unload, have no sharp edges that could damage waste bags or containers, and be easy to clean.
- Water and hand-wash materials must be readily available for healthcare waste handlers to wash their hands after handling HCW.

7.3 HCW Waste Storage

Storage is the time lapse between the productions of the waste until collection for final disposal. Consideration for storage must be based on the classification or type of waste being dealt with and the potential risk of infection to health-care workers, waste disposal staff, and the public. The following rules should be observed for proper storage of HCW in Nigeria:

- Initial packaging should take place where HCW is generated.
- Non-risk HCW should always be stored in a separate location from the infectious / hazardous HCW in order to avoid cross-contamination.

The Nigeria National Guidelines for HCWM recommends the under-listed characteristics for infectious and hazardous waste storage facilities for health-care waste:

- Impermeable, hard-standing floor with good drainage;
- easy to clean and disinfect, with a water supply;
- easy access for staff in charge of handling the waste;
- locked to prevent access by unauthorized persons;
- easy access for waste-collection vehicles;
- protected from the sun;
- for storage periods more than 24 hours, temperature must not exceed +10 degrees Celsius. (The storage of biological waste might require much lower temperatures);
- inaccessible for animals, insects, and birds;
- good lighting and at least passive ventilation;
- outside the proximity of fresh food stores or food preparation areas; and,
- Convenient to a supply of cleaning equipment, protective clothing, and waste bags or containers.
- Provide secured storage with adequate chambers for infectious, non-infectious, and food waste

7.4 HCW Waste Handling/Internal Transport

Health-care waste should be transported by the quickest possible route, which should be planned before the journey begins.

- Every effort should be made to avoid unnecessary handling of HCW;
- Hazardous HCW must be packaged in a closed yellow or red bag, tied and placed into sturdy container
- Waste that has the potential to leak must be double bagged
- all waste bags should be in-place and intact at the end of transportation;
- Provide dedicated trolleys/ trolley bins for on-site transport.
- Personnel handling/transporting HCW must wear PPE (i.e. gloves, lab coat, etc.)
- Have spill clean-up material available or, at minimum, know where it is (i.e. absorbent pads, bleach solution, etc.)

Off-site Transport

When transporting waste off-site, it is important that:

- Vehicles should be kept locked at all times, except when loading or unloading;
- when transporting hazardous waste, vehicles and containers must be cleaned and disinfected daily with an appropriate disinfectant;

- waste bags should be placed in containers (e.g. cardboard boxes or wheeled, rigid, lidded plastic or galvanized bins), before being placed directly into the transportation vehicle;
- any vehicle used to transport health care waste should fulfil the following design criteria:
    - Suitable size for the amount of waste;
    - designed such that the load is retained even if the vehicle is involved in a collision;
    - include a system for securing the load during transport;
    - possess a separate compartment in the vehicle for spare plastic bags, suitable protective clothing, cleaning equipment, tools, disinfectant, and "spill," and,
    - able to be easily cleaned and have no sharp edges to damage waste containers.
- Provide securely designed transport vessel for off-site transport

7.5 HCW Waste Treatment

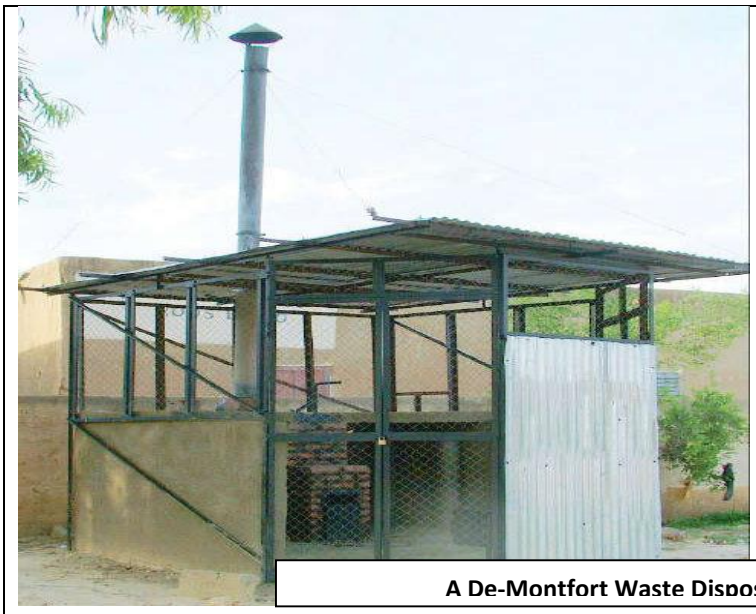
Proper treatment and disposal of healthcare waste is necessary to ensure that its impact on the environment and human health is minimized or eliminated. Unfortunately, environmental-friendly, safe and affordable options for treatment and disposal are not readily available for every situation in Nigeria.

The first step in HCWM is to ensure that all non-risk (general) waste is safely sent to the municipal waste management system. The remaining fraction of hazardous and highly hazardous health care waste should be treated and disposed appropriately to meet the following objectives:

- ✓ destruction of viable infectious organisms
- ✓ destruction/transformation of used or expired pharmaceuticals and chemicals
- ✓ destruction of sharps and other materials capable of causing physical injuries
- ✓ decomposition of radioactive waste materials
- ✓ final disposal / destruction of body parts, tissues, blood and other organic material
- ✓ avoidance or minimization of secondary impacts from the disposal system

Decisions regarding treatment technology should be made at hospital level; however responsible personnel for waste management in the hospital should be in close contact with the regulatory/supervisory authority.

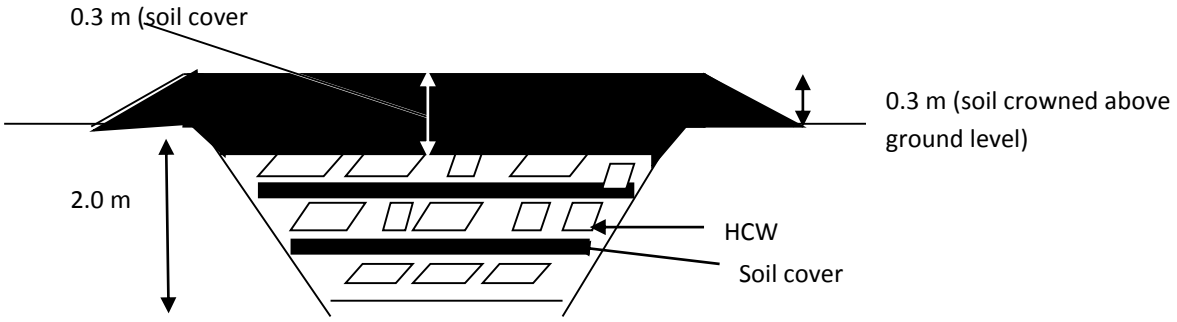
- All non-hazardous HCW not designated for recycling should be collected and managed with the general *municipal waste.*
- Burning in low temperature incinerators, preferably a well designed, constructed and managed **De-Montfort Waste Disposal Unit (DWDU)** –is satisfactory whenever this can be made available for a primary health center and even for some secondary healthcare facilities. However, this option is not satisfactory environmentally, and should only be considered a short-term solution to HCW treatment.



A De-Montfort Waste Disposal Unit

Disposal in Burial Pit

101 *Burying HCW in spec*ially constructed pits (lined with impermeable materials such as clay) is for the present moment probably the most affordable and acceptable options for Primary HC facilities. This option has the advantage that it can be made available immediately, is cheap to provide, and the personnel can be easily trained on how to manage it in an environmentally sound manner. Of course it has its drawbacks – pollution of air, soil and water; spread of diseases by rodents and insect vectors (when soil-cover is not appropriately utilized); trespass by human beings and animals. A guideline on the safe construction and operation of a HCW burial pit (as designed by the consultant) has been added as an appendix to this HCWM plan document.



Centralized Incineration

– Treatment in a centralized Rotary Kiln Incinerator with good emissions management system, situate in a Tertiary or big secondary healthcare facility (or run by a private waste management firm/Public-Private partnership arrangement) in the region; with HCW collection by a HCWM contractor or public collection system in the opinion of the Consultant, would be the ideal option for the management of HCW from primary and

secondary healthcare facilities in Nigeria. This approach would reduce health and environmental pollution risks that would arise from several inefficiently managed and run incinerators or burning pits/burials pits. The major drawback of this approach is that it will take some time to put in place, is expensive to set-up, and will require a transportation infrastructure that is well organized. But once the initial problems associated with setting up the system are overcome, it should run smoothly, especially if a public-private arrangement for the management of the incinerator is achieved

Waste Treatment in Secondary Healthcare Facilities:

Treatment in a Centralized Incinerator

- As with primary healthcare facilities above, sending the HCW from a secondary healthcare facility for treatment in a centralized dual chamber, semi-pyrolytic (preferably a rotary kiln) incinerator, operating at temperatures above 1000°C in the primary chamber and 1200°C in the secondary chamber and incorporating a good emissions management system, situate in a Tertiary or big secondary healthcare facility (or run by a private waste management firm/Public-Private partnership arrangement) in the region would be the ideal option.

The advantages in choosing off-site centralized HCW treatment solutions are:

a) **financial:** greater cost-effectiveness can be achieved in larger units unless the running costs for waste collection and transportation remain too expensive;
b) **technical:** efficient operation and maintenance of units is easier to ensure in a centralized facility than in several plants where financial and human resources may not be readily available;
c) **legal compliance:** conformance to environmental norms are easier to achieve, thanks to the use of more sophisticated/ expensive technology and by the reduced number of facilities that need to be monitored by environmental surveillance authorities.

Treatment in an On-site Incinerator

- Waste treatment in an on-site, high temperature, dual chamber, semi-pyrolytic incinerator– (which operate at temperatures of over 800°C in the primary chamber, and 1000°C in the secondary chamber), with a good emissions management system is recommended for lager secondary healthcare facilities that is in a region where there is no secondary or tertiary healthcare facility with a good quality incinerator installed. This incinerator should be used to manage HCW from other healthcare facilities in the region, especially by utilizing specialized private HCW managers for waste collection, and whose standards of operation would be supervised by the relevant environmental regulatory authorities.

Note: An Environmental & Social Impact Assessment (ESIA) would be carried out prior to the installation of incinerators in line with the existing laws in Nigeria and World Bank safeguards Policies.

Treatment in a De-Montfort WDU

- As with the primary healthcare facilities, burning in low temperature incinerators, such as a well designed, constructed and managed **De-Montfort Waste Disposal Unit (DWDU)** –would be satisfactory. However, as noted above, this option is not satisfactory

environmentally, and should only be considered a short-term solution to HCW treatment in a secondary healthcare facility.

Treatment in a Burial Pit

- Burying of the HCW in *spec*ially constructed pits (lined with impermeable materials such as clay) as described above for treatment of HCW in primary healthcare facilities would be acceptable for use in secondary healthcare facilities where incinerators are unavailable.

Final Disposal of HCW

To fulfil Best Environmental Practices (BEP), an Environmental and Social Impact Assessment (ESIA) will precede commencement of any civil works aimed at installation of incinerators in both primary and secondary healthcare facilities.

7.6 Disposal Procedural Steps

- Provide secured appropriately lined pits for final disposal of incineration ash.
- Transportation of incineration ash and non-hazardous and treated hazardous waste (that has been rendered non-infectious) to engineered designated (sanitary) land fill sites.

7.7 Resources & Human Capacity Development

- Ensuring mandatory budgeting for HCWM by Healthcare Facilities
- Development of the capacity of healthcare personnel, HCW waste handlers, and HCW waste treatment personnel to appropriately manage HCWM
- Regular trainings and re-trainings of personnel on HCWM techniques
- Provision of awareness materials on HCWM in healthcare facilities and ensuring that they are put in strategic locations in the healthcare facility, and at the points of HCW generation.
- Ensuring that HCWM Committees are setup in healthcare facilities and that they carry out their functions effectively (the Chief Medical Officer of the facility must be the leader of this committee)
- Ensuring that all healthcare facilities appoint/designate a specific officer to be in-charge of HCWM
- Development of supervisory capacity and monitoring mechanism for the implementation of a well-developed HCWM Plan for healthcare facilities (including records keeping mechanisms)
- Awareness creation and capacity development in the communities on the dangers associated with improper HCW handling and disposal
- Support and development of mechanisms for private institutions to be involved in HCW collection, transport, treatment and disposal process
- Standardization of transport facilities for the management of HCW

Recordkeeping

- The HCWM Officer must have a fully completed internal HCW manifest ready before transporting the waste to the designated disposal location.
- All details (type, weight, quantity, etc.) of the HCW must be filled prior to movement of the wastes for disposal
- A copy of the HCW manifest must be kept at the HCF a copy by the HCW Officer.

- **Spillages**

Spills should be cleaned-up if:

- The supplies to absorb and bag the spilled material is available
- Use Bleach, diluted to 1:10 with water: to decontaminate the spill area and to clean/decontaminate equipment used in spill response. Cover the spilled area with absorbent pad or paper towels and then pour diluted bleach over the towels; let to stand for 30 minutes and the clean-off
- To reduce the number of employees at risk of exposure: Restrict access to the area of the spill; Provide warnings of hazards and advice about special requirements
- Proper PPE must be worn whilst cleaning spills

Procedures for Clean-up of Mercury Spillages

- Contain the area to prevent spreading the mercury.
- Evacuate the room or affected area immediately. Open exterior windows to ventilate the room. Keep people and animals away to prevent tracking.
- Shut down any ventilation system that would spread mercury vapor to other areas. Lower the temperature if possible because this lowers the amount of mercury that can vaporize. Cover the mercury with plastic to reduce evaporation into indoor air if the mercury is not going to be cleaned up immediately and is confined to a small area.
- Keep anyone who may have been contaminated in a separate room until they can change their clothing and shoes, and remove other articles such as watches or jewelry. If possible, have people shower or at least wash thoroughly before changing into fresh clothes. This protects other people from mercury contamination and prevents the mercury from spreading further.
- Double bag, label and secure these broken containers or items as hazardous waste until proper cleaning or disposal/recycling can be arranged.
- Close the doors and ventilate to the outside by opening windows and activating any existing exhaust fan that vents to the outside.
- **Never use a vacuum cleaner, mop or broom to clean up a mercury spill!** Heat from the vacuum's motor will increase the amount of mercury vapor in the air. Mops and brooms will spread the mercury, making proper cleanup more difficult and costly. The vacuum cleaner, mop or broom will become contaminated and require disposal as hazardous waste.
- Never pour mercury down a floor drain or any other drain because the mercury may get trapped in the plumbing and continue to vaporize.

Procedures for Reporting and Tracking Spillages

- Inform the immediate supervisor of the unit if any personnel are involved in a spill or cleanup.
- The supervisor must immediately maintain restriction to the area of the accident.
- Information of the spill should be passed to all personnel in a calm and organized manner.
- Personnel of the unit in which the accident occurred should implement appropriate clean-up. It is recommended that health care facilities be provided with US EPA Mercury Clean-up Kits (one of the most effective mercury clean-up kits; containing procedures for best handling of spills and environmentally sound disposal of broken chemical containers).

- The incident should be finally communicated to the records department of the health facility for documentation and lessons learned.

Note: If it is a larger chemical or non-chemical spill there will be a required increase in personnel assistance for clean-up and a more organized clean-up approach.

Prevention of Spillage
Containers and items should be placed in secure areas and marked “breakable handle with care” behavioral patterns are a factor of good or ineffective safety practices. Personnel need hospital chemical safety trainings and educated on the use of material safety data sheets (MSDS) for the identification of chemical in their facilities.