WHITE PAPER ON SUSTAINABLE CLOSURE AND DECOMMISSIONING OF OIL AND GAS ASSETS IN NIGERIA
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We have more than 10-years of experience developing solutions for deep-rooted environmental, social, security and economic challenges in the Niger Delta. Our team includes experts in qualitative and quantitative research as well as strategists from the world of development, politics, environmental management, communications and economics.

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INTRODUCTION

Oil and gas fields have a finite lifespan for a number of reasons, including depletion of accessible resources or commercial viability of continued operation. As the guardian of these resources and the wellbeing of the population, the Federal Government needs to play an active role to ensure that closure and post-closure activities are conducted effectively and mitigate the risk of negative environmental, social and economic impacts following conclusion of commercial exploitation.

Failure to do so effectively can result in legal and financial burdens for the local populations once exploitation ends, for which the liability will fall on the Federal Government. In this scenario, associated costs will spiral out of control and schedules will become elongated. Therefore, a thorough Decommissioning and Rehabilitation Plan (DRP) is required of operators to ensure the process is planned in accordance with the highest standards to minimise environmental, social, and health and safety risks and liabilities.

To be effective, it is important that operators begin to plan for the closure, decommissioning and relinquishment in advance. Regulation should therefore require decommissioning as an integrated phase of an asset’s life, with ongoing review and adaption throughout operation to ensure operators are fully prepared for closure.

This will also demand active government involvement as partners in decommissioning projects and as counterparts improving policies and enforcing standards. Throughout operation, it will require strategic management of tax and royalties to prepare for the period following closure. A stable environment for operators where standards are enforced transparently, consistently and fairly – across all operational scales – will improve investor consciousness and confidence.

This white paper analyses the current provisions for decommissioning in Nigeria, and provides a set of guidelines and actions that would assist the establishment and enactment of an effective regulatory framework that results in sustainable decommissioning and closure practices in the oil and gas sectors. The guidance provided builds on existing Nigerian legislation, and draws from best management practices that have been effective in a range of international jurisdictions and operations.
Decommissioning is the process whereby abandoned oil and gas fields are made safe and the land or sea are reclaimed as much as possible to their original situation, so that they can be used for other purposes.

Agreement that former oil and gas producing sites should be decommissioned is virtually universal in all oil producing states. There are several reasons for this:

a) Abandoned oil and gas facilities are unsafe. No matter how depleted an oil or gas field maybe, there will always be residual hydrocarbons left below the surface. Unless secured underground such products may leach out of the ground, polluting the surrounding environment and water sources. Such pollutants may not just be oil and methane, but include a variety of other materials notably toxic gases such as hydrogen sulphide, which are dangerous to human health.

b) Drilling for oil and gas invariably produces considerable quantities of industrial waste, notably drilling fluids, “cuttings” and other solid wastes that may remain on site. Some of this waste may be polluting and should be removed and disposed of in an approved manner.

c) Abandoned oil and gas infrastructure may get in the way of any alternative use for the land. Storage tanks, pipelines, buildings and roads may take up considerable space for no good reason and should be removed. Tanks, if left to themselves, may rust down leaving many potential safety concerns. Pipelines may present a hazard to future developments, particularly if their existence is forgotten and they are not completely cleaned or vented. Such infrastructure may take up a lot of space, which could be returned to local communities.

d) The potential hazards of abandoned offshore platforms are obvious in terms of both shipping and fishing. After abandonment and going ‘dark’ such structures present obvious navigational hazards. Undersea pipelines present a significant hazard to fishing nets and anchors. In addition, oil platforms contain a wide variety of serious potential pollutants that, if left to rot down will leach into the sea causing serious pollution.

e) Both onshore and offshore oil and gas installations contain large quantities of recyclable material, from high grade steel and other metals to pumps and other machinery. This may not just be “scrap”. The “top sides” of offshore platforms may be taken off complete and large parts reused on other facilities. Much of this material will need to be cleaned and decontaminated, but it is likely to be highly valuable if well maintained. Unless this process is done in an orderly manner with expertise, it may be removed, piece by piece, by host communities that may not be aware of its hazardous nature.
The enabling law governing the process of oil and gas extraction in Nigeria dates back to the Petroleum Act of 1969, enacted ten years after oil was first produced in the country. This law contained seven subsidiary sets of regulation, only one of which pertained directly to decommissioning.

This was the Petroleum (Drilling and Production) Regulations (L.N.69 OF 1969), which refers to the removal of oil equipment and the plugging of oil wells. However, as it was written right at the beginning of the development of the oil industry it was not specific regarding rules of procedure or liability. It did not demand any specific decommissioning plan, or detail requirements for the condition of land, as the priority concern at the time was the prevention of premature abandonment of wells.

This situation improved with the arrival of the Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN) in 1991, and its 2002 revision. This clearly defined the requirement for decommissioning for the first time. In relation to offshore structures, EGASPIN demands that all abandoned installations standing in less than 100 metres of water and weighing less than 400 tonnes (without superstructure) be removed entirely. The process of removal shall avoid any significant adverse effects on navigation or the environment. Furthermore, after January 2003 no installation can be placed on the Nigerian seabed unless it is designed so that total removal is possible.

In terms of onshore and near-shore decommissioning, EGASPIN outlines a variety of specific activities that must take place to gain the required approvals from the Department of Petroleum Resources (DPR): Isolation of wells from the surface, plugging with surface cement plugs and various other matters relating the wells themselves. Processing equipment and facilities require appropriate decontamination, demolition and removal, and the avoidance of conflict with existing land use is clearly specified.

Pipelines have to be decontaminated, excavated or plugged if left on site, while surface facilities should be removed. EGASPIN demands that this should all be done within a year of the facilities being abandoned. While EGASPIN is a considerable improvement on previous regulation, it is still a vague guide with outstanding issues around enforcement and liability.

The Environmental Impact Assessment (EIA) Act of 1992 stipulates that projects over a certain magnitude in Nigeria require an EIA, which will be reviewed by the EIA Department of the Federal Ministry of Environment prior to approval.
GAPS IN NIGERIAN LAW AND PRACTICE

Nigeria is certainly not alone in experiencing a developing problem with decommissioning of oil and gas assets. Major offshore facilities in the North Sea and elsewhere are nearing the end of their life and the lack of planning and capacity for implementing decommissioning programmes have highlighted the issue. As noted, Nigeria’s primary legislation was largely designed to prevent the premature closure of wells and relates largely to the expiry of leases, so the regulation falls short of being an effective tool for the sector, with the following notable gaps:

(A) Many facilities have no decommissioning plan

Many smaller facilities were built prior to the EGASPIN and EIA rules and thus have no inbuilt plan for decommissioning. In Alberta, Canada, and the United States of America (USA), where the number of non-producing wells that have been abandoned but not decommissioned is very large, at least the relevant authorities have a clear idea of their number and location. If Nigeria is to avoid such a situation, it needs better knowledge of the number and location of its non-producing wells.

Moreover, the EIA act of 1992 makes no reference to decommissioning of oil and gas assets. All mention to facilities for the petroleum industry relates to ‘construction’, this is also the case for general infrastructure and waste treatment projects. In practice, the EIA department will consider whether the ‘decommissioning-phase activities [are] described, quantified and located on an appropriately-scaled map’ (NACGOND, 2014), yet there are no set standards or categories. Therefore the very legislation and government department responsible for overseeing the process does not have the legal backing to require operators to consider environmental and social impacts of their projects during operation, decommissioning or post-closure.

(B) The timing of decommissioning is left to the companies

Secondly, the timing of the start of the decommissioning process has to be more explicitly defined. A significant part of the problem with facilities left without decommissioning is that companies are effectively allowed to leave such facilities until the end of the lease, regardless of whether they are producing. The decision on the timing of decommissioning thus seems to be left to the company’s discretion, usually until the end of the lease. Ideally companies should be required to report idle installations to the regulator.

The EGASPIN demands that decommissioning should be done within a year of abandonment, but there is no apparent requirement for the companies to report when a field has been abandoned or ceased production.
(C) Financial liability for decommissioning is unclear

The EGASPIN does not seem to require any estimate of the potential cost of decommissioning, within the plan, or require concessionaires to provide proof that they can provide it. Moreover, there is no system to accumulate such costs while the facility is producing oil or gas.

Nor, if the facility is sold to another operator does there seem to be a mechanism for the first operator to take its share of the decommissioning liabilities. The danger here, as in other jurisdictions, is that if the facility is left for long periods after it has ceased production then there will be no money available for decommissioning.

(D) The system currently lacks a specific decommissioning process

Other jurisdictions, notably Thailand and Mozambique, set out a series of stages that define the obligatory process of decommissioning. EGASPIN by comparison is not prescriptive. Licensees are “requested to provide” environment evaluation or a plan if they have not included one in the original project. In effect companies can produce whatever they originally put in the construction plans, which will have been already approved. This makes no allowance for any changed circumstances during the life of the facility.

Elsewhere decommissioning is a process that includes consultation with interested parties in stages, and plans are modified as a result. The decommissioning plan requirements are frequently defined as “at minimum”. Much of the technical requirements are outlined by EGASPIN, but not the process whereby the regulator checks that these have been followed. The EIA Act is not specific enough about the review process of EIAs submitted by prospective operators, nor does it cover post-closure assessments which are a vital part of sustainable decommissioning.

(E) Recycling, disposal and remediation are omitted

The law specifies a general remediation of the land in vague terms. This uses the phrase “as far as possible to the original condition”, which needs much greater definition. Disposal and decontamination – where safety is a major issue – seems largely left to the company’s discretion.
(F) Unclear provisions for consultation with interested parties

EGASPIN does suggest consultations with host communities, but it is not clear who should do this or how. This is a major problem because such consultations could be instrumental in improving the current bad relationship between host communities and the oil producers. Certainly, the host communities should have some say in how far facilities like roads and buildings should be demolished and removed. Meanwhile, the scrap value of some redundant materials, or the materials themselves, could be dispersed locally, not least because it might prevent amateur “decommissioning” by the community.

(G) No post-decommissioning monitoring or evaluation

As things stand, there is little provision for monitoring the well sites for escaped gas or other pollution after the decommissioning process. There is also no defined process which an operator must satisfy in order to relinquish liability for the field.
STAKEHOLDERS CAN BE BLOCKED FROM CONSULTATIONS

THE SYSTEM CURRENTLY LACKS A SPECIFIC DECOMMISSIONING PROCESS

NO POST-DECOMMISSIONING MONITORING AND EVALUATION

THE TIMING OF DECOMMISSIONING IS LEFT TO THE COMPANIES

MANY FACILITIES HAVE NO DECOMMISSIONING PLAN

THE FINANCIAL LIABILITY FOR DECOMMISSIONING IS UNCLEAR

NO LAWS FOR RECYCLING, SAFE DISPOSAL OR REMEDIATION

GAPS IN NIGERIAN LAW AND PRACTICE
International best practice on oil field decommissioning is fairly straight forward with regard to offshore fields, and is required by the UN Convention on the Law of the Sea, to which Nigeria is a signatory. The United Kingdom, Norway and the USA all have well established domestic regulations governed under their respective Federal or national regulatory agencies (see bibliography). The process generally has several stages requiring a detailed plan, widespread consultations with stakeholders and a formal approval process.

**In contrast to offshore decommissioning, there are no major international treaties distinctly outlining the requirements for onshore decommissioning. It is largely controlled within oil production licensing agreements and host country environmental or planning law.**

This does not mean that rules relating to onshore are less important than those for offshore. Onshore decommissioning is poorly regulated worldwide, partly because it has largely been left to local government authorities, with much less defined regulation. This has led to significant problems in both Canada and the USA. Currently Alberta has some 83,000 inactive wells, many not officially abandoned, and none yet decommissioned. Known as orphan wells, in many cases the original owners have disappeared and liability for clearing the land is unclear.

To counteract this problem, the industry has set up a not-for-profit organization – the Orphan Well Association – to decommission these wells with money given by the industry. Meanwhile, the Alberta Energy Regulator has introduced a levy on existing producers – the Licensee Liability Rating (LLR) – to help fund existing companies with their decommissioning costs.

A similar situation exists in many states in the USA, with thousands of wells left without decommissioning or removal. In some states, the state agencies responsible have set up state funds to fund the removal of these wells sites. Some have a levy on the industry to do so, while others demand insurance from the companies concerned.

This external experience illustrates that unless detailed regulation and planning is in place, the problem will accelerate and leave the State with a significant financial and social cost, and many areas blighted with abandoned industrial waste unsuitable for future use.

The Federal government therefore has the opportunity to avoid this by articulating a pioneering decommissioning strategy that builds on the lessons of international regulation in offshore facilities, and experience and practice in onshore facilities. It is not in a position to follow International practice and push the responsibility to local government, as the capacity is simply not there in Nigeria. The first step is to outline the regulatory requirements for operators, and the process of planning, submitting and reviewing a Decommissioning and Rehabilitation Plan (DRP). The remainder of this document intends to support that process.
KEY PRINCIPLES OF SUSTAINABLE DECOMMISSIONING PLANNING

A number of key points have been raised that should guide the process of closure and decommissioning. The following principles should be articulated as minimum standards by the EIA department and the regulator of decommissioning. Prospective operators should be able to illustrate that their decommissioning will satisfy the principles in the submission of an initial decommissioning plan prior to receiving an operator licence.

Increasing operator self-regulation of operations throughout project life-cycles is a vital step towards improving industry procedures in Nigeria, while making sure that the process of regulation, or the impacts of closure and post-closure are not borne solely by the Federal Government.

Improving corporate social responsibility and social license to operate of oil and gas companies will require better closure and decommissioning procedures that have a broader focus than profit, and demand a better relationship with the communities which they operate within.

Reducing the environmental and social impact of closure and decommissioning will require thorough planning over many years, verified by experts and the regulator, consultation with communities and stakeholders.

Reclamation and recycling of materials can be maximised with forward planning, which in turn will reduce the cost of decommissioning and closure.

Removal of hazardous waste and materials that have accumulated in the region through years of operational negligence can reduce exposure to harmful substances.

Rehabilitation of areas affected during operation can be carried out during decommissioning to start the process of returning the environment to its natural state and remove the barriers to thriving biodiversity and local livelihoods.
Financial assurance for decommissioning is an area that needs immediate clarification to ensure that the cost of implementing activities are known in advance and that funds are available to execute.

Iterative process of learning and development for both operators, regulators, civil society and government through the establishment and review of a national decommissioning framework and regulatory regime will strengthen institutional capacity in Nigeria.

Monitoring and enforcement of legislation to protect the social, economic and environmental wellbeing of the Federation in a uniform way across the oil and gas sector can only be done when supported by a fair and uniform process, defined by the Federal Government.
KEY PRINCIPLES OF SUSTAINABLE DECOMMISSIONING PLANNING

- Removal of hazardous waste and materials
- Improving corporate social responsibility and social license to operate
- Key principles of sustainable decommissioning planning
- Iterative process of learning and development
- Financial assurance
- Increasing operator self-regulation
- Rehabilitation of areas affected during operation
- Reducing the environmental and social impact
- Reclamation and recycling of materials
- Monitoring and enforcement
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1. Integrating Decommissioning into Project Life-Cycles

1.1 Decommissioning plans should be integrated into project life-cycles by operators, prepared for from project feasibility stage, and be interlinked with the remaining life of field (LoF) or asset so that suitable preparations can be made.

1.2 Designs for new production facilities should include features and characteristics to support and simplify decommissioning and closure to significantly reduce financial, environmental, social, health and safety impacts. Favourable tax benefits would incentivise development and adoption of better technologies.

1.3 No operation should start without the development of a conceptual Decommissioning and Rehabilitation Plan (DRP), drafted at the design, pre-feasibility and construction phases.

1.4 The conceptual DRP should become more detailed as the project moves into operation, and as there is a greater understanding of logistical and contextual issues. There should therefore be a pre-set timetable for periodic review and updating of the DRP, typically every three years. This should be resubmitted to the regulator for review and approval. The regulator would retain the right to delay operations if the DRP update is not submitted or not adequate.

1.5 The requirement for an updated and detailed final DRP is deferred until at the earliest five years and at the latest two years before expected termination of the facility (or expiration of the license, whichever comes earliest). It is therefore important that the plan is well articulated, prior to closure date or LoF becoming apparent.

1.6 The development of a final DRP takes several years and must prepare for different scenarios depending on the factors particular to the specific field. These scenarios should take into account the dynamics outlined in Environmental Impact Assessments (EIAs) and risk assessments prepared for the field, and the expectations of stakeholders. As operations enter the final five to two years (depending on notification of field closure), the operator must give prior notice to the regulatory body, who will arrange for DRP review to be put on an annual or biannual schedule, depending on the complexity of the project.
2. Removal of Infrastructure

2.1 The DRP should outline a schedule for activities to remove equipment, plans for plugging and abandonment of production wells, a description of the equipment needed, and an inventory of hazardous material and chemicals existent in facilities or required for decommissioning, and plans for their removal.

2.2 Operators and owners should be required to maintain a decommissioned register for the field, to track the status of assets and their decommissioning. This should be subject to regular audits to ensure it remains up-to-date and reflects the current state of the plant. The register should be communicated to the regulator on an annual basis to enable central mapping and tracking of assets.

2.3 No equipment or ancillary structures should be left abandoned at the site without the explicit approval of the regulatory authority, affected landholders and local communities. Applications should be submitted no later than one year before closure accompanied with full testimonies and supporting documentation from community members, and be reviewed on a case-by-case basis and agreed with the regulatory body. This will require ongoing consultation and review of EIAs throughout operations.

2.4 Where consultation concludes that there is local value in remaining infrastructure and/or facilities, and/or it is judged pertinent for the development of the area, it may be left in-situ. Responsibility must be formally transferred to third parties. This should follow a thorough due diligence process to ensure maintenance and operation liabilities are endowed with appropriate parties and mitigates local conflicting interests. Under these circumstances, all remaining structures must be emptied and cleaned.

3. Disposal of Equipment and Wastes

3.1 A DRP should identify suitable disposal sites for the equipment and materials. Where dismantling is not possible at site, the logistics of transporting the equipment should be made explicit in the DRP.

3.2 Operators should illustrate that recycling has been considered to the maximum extent possible, and that dismantling and recycling prioritises the use of local labour.

3.3 Liquids and wastes must be removed and disposed in a responsible manner. The types and volumes of liquids and wastes (whether hazardous or not) must be identified in the DRP, with plans and methods for removal, treatment and disposal outlined for approval.

3.4 The DRP should identify as early as possible any equipment that can be used beyond service and identify a potential buyer or market, and suitable interim storage facilities.
4. Restoration and Rehabilitation

4.1 Before decommissioning activities commence, a contaminated land assessment should be conducted to assess the toxicity of the land – including soil, air and water pollution – to inform the extent of remediation that is required.

4.2 There should be a reduction of in situ toxicity levels within three to six months of starting activities. This may require biostimulation followed by bioaugmentation to restore the nutrient content of soil and groundwater, and promote microbial activity, in an appropriate ratio based on EIAs and scientific studies for optimum performance of the said habitat. Only approved bioaugments listed by the regulator should be used for bioaugmentation.

4.3 The final land should be shaped and contoured as far as possible to recreate the original landscape through the reintroduction of reserves of surface soil amassed during operation and decommissioning to the cleaned area in the correct order. Where the resources do not permit soil contouring, artificial banks and energy dissipating structures will be required to mitigate erosion and flooding.

4.4 Advice from hydrologists and surface water ecologists should be sought on the development and implementation of DRPs to ensure that the proposed rehabilitation and restoration activities are sensitive to the predating landscape and water patterns.

4.5 Hydrological restoration should be employed to establish natural water flows to support regeneration or revival of mangrove forests.

4.6 Selected boreholes may be exempt from plugging if suitably prepared for future use as monitoring points for ground water toxicity post-decommissioning. Local authorities must be formally notified.

4.7 The process of rehabilitating vegetation and biodiversity should commence no later than six months after detoxification to the site and removal of infrastructure, and be concluded within 5 years.

4.8 Where the primary succession has been disrupted or destroyed due to operational or decommissioning disturbance, a process of re-vegetation should be promoted through the encouragement of a natural secondary succession process to replace the previous community of plants and animals.

4.9 Areas that have become flattened or compacted either through operations or decommissioning activities – such as access roads or location of equipment - should be ploughed and scarified to enable vegetation to naturally establish.
4.10 The emphasis for species selections should be on naturally occurring indigenous species of high economic value that will help restore local livelihood options, such as Hibiscus cannabinus, Manihot Esculenta (cassava), Medicago Sativa (alfalfa), and Alanblackia.

4.11 All alien vegetation that has taken root during operation or decommissioning period should be removed, and the indigenous mix of vegetation should be restored to the pre-operation levels outlined in the EIA.

4.12 To support a self-sustaining rehabilitation programme in the long-term, DRPs should contain activities to build the capacity for local production of vegetation in nurseries for seedlings and other related activities that will support the ongoing process.

4.13 Owing to the threats to livelihoods, remediation in water bodies should be rapid, followed by rapid deployment of strategies outlined in the DRP to re-stock fisheries and resuscitate livelihoods.

4.14 The restoration and rehabilitation must illustrate that the best available scientific information and experience has been consulted during the development of EIA and DRP.

5. Contracting

5.1 The contracting process for the DRP should follow the national tendering and procurement procedures. This includes a forensic due diligence test of the applicants prior to any contractual agreements.

5.2 The regulatory body should endeavour to develop a proven supply chain and advertise this to operators so that decommissioning programmes can be supported with best practice procedures and contract terms and conditions. This channel will be used by the regulatory body whenever the need for a compulsory relinquishment shall arise.

5.3 It is the sole responsibility of the operator to ensure that no contractors listed on the regulatory body’s ‘black list’ should be involved in the process of decommissioning.
6. Stakeholder Engagement

6.1 A comprehensive Environmental, Social, Health and Safety Impact Assessment (ESHSIA) should be mandatory within submission of the first DRP to establish an understanding of social context prior to the process. This should be reviewed and updated as part of the schedule to inform the risk level associated with decommissioning and closure.

6.2 Operators should develop their decommissioning and closure plans with extensive stakeholder engagement at the design, planning and implementation stages for decommissioning and closure. Local buy-in and participation in process will ensure successful legacy.

6.3 Throughout operations, there should be a continuous process of community interactions that inter alia acts as a consultation process for review and feedback on DRPs. This process should build on the existing oil and gas operator approach that uses a Global Memorandum of Understanding (GMOU) as a vehicle for effective community participation.

6.4 Operators should encourage the establishment of a community committee to engage with throughout the process of closure, decommissioning and monitoring. This approach must be sensitive to existing community governance structures, local power and authority hierarchies, while illustrating efforts to be gender-sensitive and include vulnerable groups.

6.5 An allocation of decommissioning funding should be assigned locally to community-based organisations to develop the resources required for remediation and rehabilitation, such as seedling nurseries and replacement soils, thus stimulating local livelihood opportunities. This should emphasise prioritisation of indigenous species and environmental management methods.

6.6 Labour-intensive remediation activities should, wherever possible, aim to create employment opportunities locally for those whose livelihoods have been disrupted by operation and decommissioning.

6.7 Throughout the process of DRP development and implementation, open and regular updates should be communicated to the affected communities and other stakeholders to inform them on what is required to achieve a positive post-closure environment and manage expectations.

6.8 As part of the DRP, the operator should outline any areas where nearby communities and other stakeholders have become dependent on their activities or support – such as financing for local services and other CSR activities. This should be accompanied with a clear exit strategy that explains how these relationships will be managed following closure.
6.9 Operators should have protocol for negotiation and alternative dispute resolution to manage grievances as and when they should arise at the community level. Local non-governmental organisations can play a key role in this process where required.

6.10 The stakeholder engagement should encourage reporting into a regulatory feedback mechanism so that communities can document environmental or human rights violations, and be used as the basis for improving the process or prosecuting liable parties.

7. Relinquishment

7.1 Operators should submit a close-out review of all decommissioning activities to the regulator within four months of the completion, with details of performance targets that meet the protocol developed for final site inspection, prior to relinquishment. This will include a detailed physical examination of the site against the EIA and socioeconomic plan, and other commitments pertaining to the DRP.

7.2 Operators – or other liable parties – should not be relinquished from liabilities until the objectives, targets and indicators outlined in the DRP have been met and maintained. This includes progressive rehabilitation.

7.3 A final sign-off process should be introduced to assess performance targets three years after remediation, which ensures that residues of chemicals have reduced to the required levels, infrastructure has been removed, land has been returned to the natural state, and that there clear evidence of a return of previous biodiversity and ecosystem function in line with the EIA and DRP.

7.4 An independent third party should be commissioned to complete a final audit evaluating performance in relation to the targets outlined in the DRP, which should be submitted to the regulator for evaluation prior to final relinquishment. The regulator should retain the right to withhold relinquishment of liability until it is satisfied that expected milestones and commitments outlined in the DRP have been met.

7.5 The independent third party should be able to verify that there is no immediate or future direct, secondary or cumulative threat to the environment, ecological integrity, social, public health or safety, and where such a threat is envisaged that appropriate mitigation measures will be instituted.
7.6 Owing to the threats to livelihoods, the operator should be responsible for ensuring that land farming processes and fishing activities do not resume until after detoxification and/or an increase in bioavailability has been confirmed in a toxicity test.

7.7 Where decommissioning activities have not commenced within two years of the end of operation, or been completed within ten, the regulator should reserve the right to issue a Compulsory Relinquishment Order for the field. In this scenario, the field owner would forfeit all rights of ownership to the regulatory body. The regulatory body then undertakes the responsibility of decommissioning, restoration and rehabilitation, which it can charge to the liable party.

8. Post-Relinquishment Monitoring, Auditing and Reporting

8.1 A suitable long-term monitoring and evaluation program should be developed and submitted to the regulatory body with the final DRP for approval. This should be conducted annually for at least three years post-relinquishment to ensure that rehabilitation has been progressive and there is no longer a threat to the surrounding environment, biodiversity or communities.

8.2 To strengthen self-regulation, the burden of monitoring should be vested with the operator and affiliated third parties and reports will be evaluated and audited by the regulator for effectiveness and verification of activities and progress.

8.3 Operators must explain how they intend to monitor the environmental impacts of operations and decommissioning post-relinquishment, such as surface water, groundwater, oxygen levels in subsurface zones, presence of hydrocarbons, vegetation growth, species abundance and diversity, basal or canopy cover (whichever is more appropriate), surface erosion, biomass yield, and fertility status of rehabilitated land.

8.4 Reporting should contain a systematic index of plant species diversity and coverage, supported by a photo register, to document the rehabilitation of the plant community.

8.5 Socioeconomic impact of rehabilitation should be submitted to the regulator to illustrate that the activities have avoided negative impact on surrounding communities and that the rehabilitation undertaken has had a net positive effect and is now supporting sustainable livelihood options locally beyond closure.
8.6 All reporting and documentation pertaining to decommissioning, including monitoring of rehabilitation, should be released following relinquishment of the license to enable communities and other interested operators to take an informed view about the potential for future (re)development of the area.

8.7 The community committee or representatives engaged throughout operation should be made part of the monitoring process to ensure that the reporting is inclusive and valid.

9. Forums on Improving Decommissioning

9.1 Operators and associated stakeholders should be encouraged to participate in an annual national decommissioning conference, facilitated by the Federal Ministry of Environment. This forum would give counterparts a platform to refine the optimal legal, technical, financial, environmental and social arrangements related to closure and decommissioning of assets in Nigeria.

9.2 External actors – such as non-governmental organisations and academic institutions – should be encouraged to participate in the conferences. Integrating input from other stakeholders will continually improve decommissioning practices.

9.3 The conferences should serve as a place to discuss and encourage the adoption of voluntary international practices, such as the Global Reporting Initiative (GRI), and showcase the Nigerian example to international governments.
10. Managing Uncertainty

10.1 Due to the cyclic nature of the oil and gas industries, fluctuations in commodity prices and other exogenous economic factors, activities necessary to mitigate negative impacts should be made for temporary shutdowns and be covered in the DRP. This includes securing the well head, ensuring that all hazardous materials are removed from the site, and secured enclosures surrounding the facilities are adequate to restrict trespassing.

10.2 Where future field activity can be demonstrated to be feasible, for example with less extraction undertaken by a smaller company, the DRP should demonstrate that necessary planning has been made to enable exploration.

10.3 Where ownership of a field is transferred through a merger or acquisition before the LoF has been reached, closure agreements should be transferred to the new operator. There should be an initial period in which the new operator can update the plan in line with their capacity, and resubmit to the regulator for approval. They should then take on the responsibility to schedule frequent updates.
Prospective operators explore and prepare for decommissioning.

Applications to operate accompanied by conceptual DRP.

Facilities designed with features to simplify decommissioning.

EIA and Social Impact assessments.

Release of DRP for public consultation period.

Submission of final DRP 2-5 years before cessation of production.

Community consultation.

Pre-Feasibility Phase

Periodic review and updating of DRP on 3-year schedule:
- EIA
- Risk Assessment
- Community Consultation
- Decommissioning register of assets.

Annual/biannual review of final DRP.

Contaminated land assessment 1

Contaminated land assessment 2

Contaminated land assessment 3

Tendering and procurement for decommissioning works.

Independent EIA and Physical Examination report submitted no later than 4 months after DRP completion.

Independent EIA and Physical Examination report submitted to illustrate DRP completion.

Release all decommissioning monitoring and certification documentation.

Local activities permitted to resume following toxicity certification.

Release of DRP for public consultation period.

Deadline to get permission for leaving infrastructure is 1-year before cessation

Recycling, reuse and disposal of materials and liquids.

Commence rehabilitation within 1 year of decontamination.

Regulator audit of DRP performance and final sign-off.

APPROVAL OF RELINQUISHMENT

APPROVAL OF DRP

T IMELINE

Annual monitoring and evaluation reporting for a minimum of three-years following DRP.

Completion of Decommissioning and Rehabilitation

If not done within 10 years then possession passes to the regulator and cost is charged to operator.

Contaminated land assessment 1

Contaminated land assessment 2

Contaminated land assessment 3

Recycling, reuse and disposal of materials and liquids.

Independent EIA and Physical Examination report submitted no later than 4 months after DRP completion.

Independent EIA and Physical Examination report submitted to illustrate DRP completion.

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Basic High-Level Structure of a Decommissioning and Closure Plan

The following is an outline of the minimum requirements that could be requested within the final DRP for review. Following consultation it should be developed into a blank template and made available to operators. Best practice would dictate that following submission it should be made available to the public on via an online forum to enable consultation prior to approval.
1. Executive Summary
   1.1 Non-technical executive summary in respect of the main issues considered, conclusions and proposals

2 Introduction and background
   2.1 Requirement for decommissioning programme(s), including applicable standards, regulations and policies
   2.2 Overview of Installation(s)/Pipeline(s) being decommissioned
   2.3 Summary of proposed decommissioning programme(s)
   2.4 Field location including field layout and adjacent facilities
   2.5 Industrial implications
   2.6 Description of the areas of influence

3. Description of items to be decommissioned
   3.1 Installations: Surface facilities
   3.2 Installations: Subterranean/aquatic facilities
   3.3 Pipelines, including stabilisation features
   3.4 Wells and boreholes
   3.5 Inventory estimates
   3.6 Ancillary infrastructure

4. Removal and Disposal Methods
   4.1 Extraction infrastructure
   4.2 Hazardous materials
   4.3 Wells
   4.4 Waste streams
   4.5 Pipelines

5. Environmental, Social and Health and Safety Impact Assessment
   5.1 Environmental sensitivities
   5.2 Potential environmental and social impacts of removal, collection, disposal and decommissioning activities and their management
   5.3 Measures for preventing hazards to human life, the marine environment and ecosystem
   5.4 Identification of the environmental consultant for planning, programme management and execution
   5.5 Preparation for cessation of any social, economic or environmental programmes tied to operations

6. Restoration and Rehabilitation Plan
   6.1 Identification of baseline conditions and aspects requiring protection and enhancement
      a. Environmental
      b. Socioeconomic
      c. Regional development context and land use
6.2 Measures adopted to rehabilitate the area to a healthy, clean, safe and productive state
   a. Environmental measures
      i. Site Reclamation
      ii. Grading and surface reclamation
      iii. Re-vegetation
      iv. Water quality
      v. Other
   b. Socioeconomic measures
      i. Community health and safety
      ii. Training and capacity building
      iii. Social investment
      iv. Compensation
      v. Other

7. Interested Party Consultations
   7.1 Stakeholder Mapping
   7.2 Identification of key consultative forum/actors
   7.3 Strategic engagement and involvement

8. Programme Management
   8.1 Decommissioning principles, goals and continuous improvement strategy
   8.2 Project Management and Verification
   8.3 Post-decommissioning debris clearance and verification
   8.4 Schedule
   8.5 Costs
   8.6 Close-Out
   8.7 Post-decommissioning monitoring and evaluation
   8.8 Liability guarantee

9. Early Closure Contingency Plan
   9.1 Risk evaluation
   9.2 Overview of scenario planning
   9.3 Liability guarantee

10. Roles and Responsibilities
    10.1 Operator roles
    10.2 Community roles
    10.3 Consultants to oversee process

11. Supporting Documents

12. Partner Letter(s) of Support
    (From equity holders in the field)
AREAS FOR FURTHER RESEARCH

Funding Decommissioning

While it is beyond the scope of this guidance to outline how decommissioning is to be funded, it is important that the basic tenets are established as it outlines a significant area where future work is required.

Firstly, operators and the regulator should be fully aware of the estimated cost of decommissioning activities at each of the fields in production, as this should be a mandatory requirement of the DRP. Estimates should be linked specifically to assumptions outlined in the scheduled reviews. This process will avoid hidden costs as each scenario will be planned in line with environmental and social expectations and risks as defined by the EIA and community consultations.

Secondly, while decommissioning and closure can entail significant levels of funding, it must be fair to both the host country and the oil company if it is to be sustainable. This raises the question of liability. Oil blocks in Nigeria are currently undergoing a high rate of sales and acquisitions, with long-term operators selling to new market participants. With this in mind, clarity is needed on historic operator liability versus current operator liability for decommissioning.

The structure of production contracts in Nigeria further complicates the question of liability. Oil companies are under obligation to enter a joint venture (JV) agreements with the national oil company for the duration of a production lease, where it takes the majority stake. Under a production sharing contract (PSC), the assets are usually returned to the national oil company upon cessation of production. Therefore it is not made explicitly clear where liability lies, it is likely to be borne solely by the national oil company.

As there are many fields in Nigeria that either immediately require decommissioning or that are nearing closure and will need decommissioning soon, the Federal Government must make it clear where the financial liability lies and commit the liable party to invest in the activities required.

Going forward, a designated funding mechanism should be established to ensure funding for activities are available at all times, and draw a clear line denoting liability among partners. This must be designed with the Ministry of Finance to avoid clashes with existing financial regulations.
There are various options that should be considered, including:

1. The national oil company could provide the funding for decommissioning solely from its take of production during operation. This would cover the cost of decommissioning in cases where the LoF exceeds life of the contract and all assets are returned to the national oil company.

2. A reserve trust fund could be established for decommissioning funded by a fraction of the revenue received or profit made for each barrel of oil produced at each field. This would accumulate over time and be available for decommissioning activities when closure approaches. This would ensure security of decommissioning funding in cases where ownership changes during the life of the asset, and spread the cost burden across all fields and operators.

The Petroleum Industry Bill (2012) stated that the Petroleum Profits Tax would be replaced, and that funds would be set aside for decommissioning and abandonment expenditure through the imposition of the Nigerian Hydrocarbon Tax (s299-352). Filed as an operational cost, activities are explicitly tax-deductible/recoverable, while also avoiding bank fees.

This fund could be made available to the regulator in scenarios where an operator fails to adequately meet the requirements outlined in the decommissioning plan, where compulsory relinquishment is required. The activities could be undertaken by the regulator, with the costs and associated penalties billed submitted to the operator for payment. It could also fund emergency measures where there is a risk to environment or social wellbeing.

3. The cost of decommissioning could be borne solely by the operator through amortisation. The operator would either have to deposit the whole amount into an abandonment fund over the LoF, or have to demonstrate financial security or substantial liquidity to cover all costs of the DRP, preferably guaranteed by a Letter of Credit from the company’s bank. The latter is the standard procedure in the United Kingdom, where operators are encouraged to enter a Decommissioning Security Agreement (DSA). For companies with a long-standing UK tax history, decommissioning costs are deductible against tax up to a maximum of 50% of tax liabilities, with those above applied retrospectively (i.e. the UK government funds a substantial proportion). This is guaranteed in a deed to protect the operator against changing government policy.

4. A unit of production method would recover the estimated future decommissioning costs by the licensee gradually, either throughout the oil field’s life or from a trigger point onwards, typically when a considerable portion of the reserves – somewhere between 50-80% depending on the size of the field - have been exploited.
Roles and Responsibilities

Given the scale of the decommissioning and closure activity required, a specific division in taking the lead on decommissioning is warranted. Responsibility for managing the decommissioning process in Nigeria currently lies under the Environmental Impact Assessment Department of the Federal Ministry of Environment. This is a sensible place for it to be housed. There is however no designated division nor personnel for decommissioning within the EIA department.

A specific division would be a receptacle for knowledge accumulation on decommissioning, which would be a huge asset to the Ministry of Environment. Clear designation would give operators a direct point of contact, and avoid bureaucracy. The responsibility for policy and coordination would be retained at the Ministry-level to ensure legislative power to enforce and prosecute. Oversight from an independent regulator, such as NOSDRA, would ensure the agency is accountable and operations are compliant with environmental and social standards. An independent environmental consultant will be needed on all projects, and a national certification system should be explored.

Clean-up standards

There are no set standards that the regulator can refer to, or that operators can work towards. The reference is usually to a “natural” or “healthy” state. To hold operators accountable for their rehabilitation activities the Ministry must develop a standard. This could then be used for general remediation activities, such as in the incident of oil spills.
The following international decommissioning laws, regulations and strategy documents have been used to develop this guidance note and ancillary template for Nigeria:

**Domestic Legislation:**


The Canada Oil and Gas Operations Act (1985).

The Canada Petroleum Resources Act (1986).

Nigerian Environmental Impact Assessment Act (1992)


Mozambique Petroleum Law (Law no.21/2014).

Mozambique Environmental Regulations for Petroleum Operations (Decree no.56/2010)


**International Conventions:**


Guidelines:


Her Majesty’s Treasury. (2012). Decommissioning Relief Deeds: increasing tax certainty for oil and gas investment in the UK Continental Shelf.


