



The State of Digital IA Practice
Webinar Series

Webinar 6

Global Launch Event:
Enabling Digital Environmental Impact
Assessment (EIA) in Nigeria

Structure

- Digital IA context
 - Basis & approach to the Research
 - The Report and its Key Findings
 - Case Example & Progress Update: Digital EIA in Nigeria
- **Panellist's Perspectives**
- **Q&A**



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Digital Impact Assessment in Context

Josh Fothergill



Tobias image, sourced from www.unsplash.com

Global Digital IA Report (Dec 2021):

*****.fothergilltc.com/digital

IAIA Digital IA webinar series:

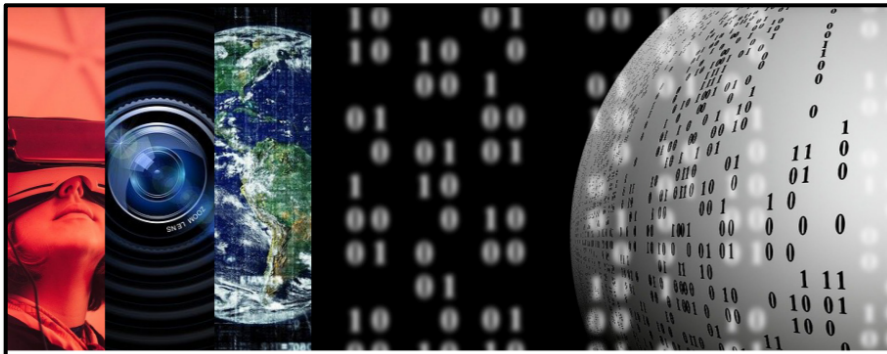
2022:

- Digital IA workspaces
- Western Australia Big Data & Systems – Example
- Artificial Intelligence – The IFC's MALENA

2023:

- Integrated digital design and IA
- DREAMS – Danish collaborative digital EIA – Example

Many papers + much discussion @ IAIA annual conferences since IAIA15 whose theme focussed on Digital IA.



The State of Digital Impact Assessment Practice

A global review of the uptake of digital technologies and approaches within impact assessment practice



Defining Digital IA...

- Not formally defined in national IA laws / financial institution standards.
- Lots of different views of what is / is not within the scope of Digital IA - based on differing experiences and perspective on practice.
- IAIA Innovation Grant funded a project to help frame the subject, which led to the following broad definition:

“The use of advances in digital technologies and their applications in the pursuit of enabling more effective IA practice”

Fothergill & Murphy , 2021

The State of Digital IA Practice identifies **10 Elements** of Digital IA Practice

Digital Impact Assessment	
Digital Approaches & Technologies enabling progress in Digital IA	Digital Transformation within Aspects of the IA process
Inter-IA and online environmental and social management systems	Digital screening tools
Digital baseline data capture devices	Digital IA platform / workspace
Artificial intelligence (AI) in IA	Digital stakeholder engagement
IA and virtual, augmented & mixed realities	Digital EIS and web-based reporting
Online learning and capacity building	Digital follow-up: monitoring and auditing

Transformations to Digital IA are progressing across global practice

North America:

- Canada, Environmental database management system
- IFC, Artificial Intelligence, and data innovation for social license

Europe

- Iceland, Early example of the potential of digital EIS
- Netherlands, Digital EIS, diagnostic tool country ESIA systems
- Serbia, Envigo digital IA platform

Asia

- China (Hong Kong), Virtual and hybrid reality systems
- Singapore, Autonomous vehicles + automated decision support systems
- Nepal, drones + digital air quality devices



South America

- Chile, Remote sensing and live database EIA follow-up
- Guyana, Imagery + GIS to map coastal ecosystem services, with in-field verification.

Africa

- Kenya, Drones surveys
- Nigeria, Developing digital EIA project + drone surveys
- South Africa, digital screening platform

Australasia

- Australia, digital EIA studies, reports and monitoring system.

Digital IA

Key Areas of Change Requiring Management

Data

Access, Integration
and Trust

Quality & Costs

More effective
practices / loss
skilled humans in
IA?

Engagement

Equity, Inclusion +
Reach: *Digital
Divide*

Safety, Privacy + Security

Basis & approach to researching digital EIA in Nigeria

Etia Ndarake



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Photo: Abuja City Gate, Nigeria
Sourced from: *****experiencingnaija.com

Research Report

Enabling Digital Environmental Impact Assessment (EIA) in Nigeria



Report Launch

- A Willend Associates Ltd review of digital approaches to EIA in Nigeria, undertaken through research led by our partners at **Fothergill Training & Consulting Ltd.**

Download your free copy of the report:

*****.paperturn-view.com/?pid=ODc8778619&v=1.1

The study would not have been possible without the collaborative engagement of the Nigeria Government and other participants:



FEDERAL MINISTRY OF ENVIRONMENT
OFFICE OF ENVIRONMENTAL
ASSESSMENT DEPARTMENT



And the financial support of UK Government and Willend:



Department for
International Trade



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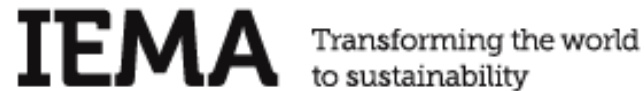
Research Report

Enabling Digital Environmental Impact Assessment (EIA) in Nigeria



Report Launch

The study recognises the collaborative engagement of the following organisations that either helped shape the ideas behind the research or contributed during the study itself:



Context and Basis of the Research Report

2020	Concept feasibility Study by University of Uyo for Willend - Waste Facility in Nigeria – <u>Challenges with obtaining data</u> (COVID made situation worse)	Problem ↓
2021	Scotland's EIA Conference 2021 Session 3: Digital Transformation & EIA	Ideas ↓
	<ul style="list-style-type: none"> • Willend organised a webinar hosted by IEMA - presentation by FMENv and NCEA, over 500 registered from Ghana, Nigeria, Qatar, UK etc • Willend engages in FothergillITC global digital IA work (grant funded by IAIA) 	Consolidation of ideas ↓
2022	Willend secures matching grant from UK government for the research	Problem and Implementation ideas ↓
	EIA for Willend Waste Facility in Nigeria by Earth Pulse Consult <ul style="list-style-type: none"> • <u>Challenges with obtaining baseline EIA data</u> • Engagement with FMEnv and Earth Pulse to undertake Pilot Digital EIA concurrently with traditional EIA 	
2022	Willend and Fothergill agreed to collaborate on the Digital EIA research project	Find Solution to Problems ↓

Context and Basis of the Research Report

2022	<ul style="list-style-type: none">• Willend secured approval for the research from the senior officials (Minister of Environment and Director General of NOSDRA)• Engagement with research participants• Willend and FothergillTC - define and agree scope of research, research commenced	Approvals Engagement ↓ Participation
2023	Research completed	Research Report could be used as Blueprint / Framework for EIA Digitisation in Nigeria
2024	Willend and Fothergill open to opportunities to collaborate with key stakeholders / partners in implementing the research report findings	

The Report and its Key Findings

Josh Fothergill



Research Report

Enabling Digital Environmental Impact Assessment (EIA) in Nigeria



Government action on EIA related Digital approaches



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- Significant digital archive of EIA documents exists, the result of past ICT related investments.
- EIA Portal Phase 1: Online Registration of a developer's EIA.
- GIS investment – building upon skills and interest of existing EIA officers.
- **Planning** - Further EIA Portal developments: Sect 57(1) archive, management of live steps throughout the EIA process.



- Digital approaches more integrated in staffing and approach.
- Greater application of digital data + GIS systems to coalesce oil spills data.

Developers & Consultants: Digital EIA

Progress

- Considerable increase over last decade in adoption of digital technologies to drive efficiency:
 - **Drones**: improving efficiency, accessible areas, consultant H+S (but some challenges)
 - **GIS**: where digital data sets already exist / are generated by the project
 - **Digital over paper-copy reports**: submission of EIA Report via online Portal is tangible next step
- Feeling of “*unmet potential*” due to a limitations in availability of digital environmental data, and lack of coordinated progress across *data holders*.
- Use of satellite derived data is beginning to gain pace, but more opportunities exist and application and exploration via university research appears ahead of practice.
- There is appetite and active exploration of far greater Digital EIA approaches for developments – see **Etia’s Case study**.

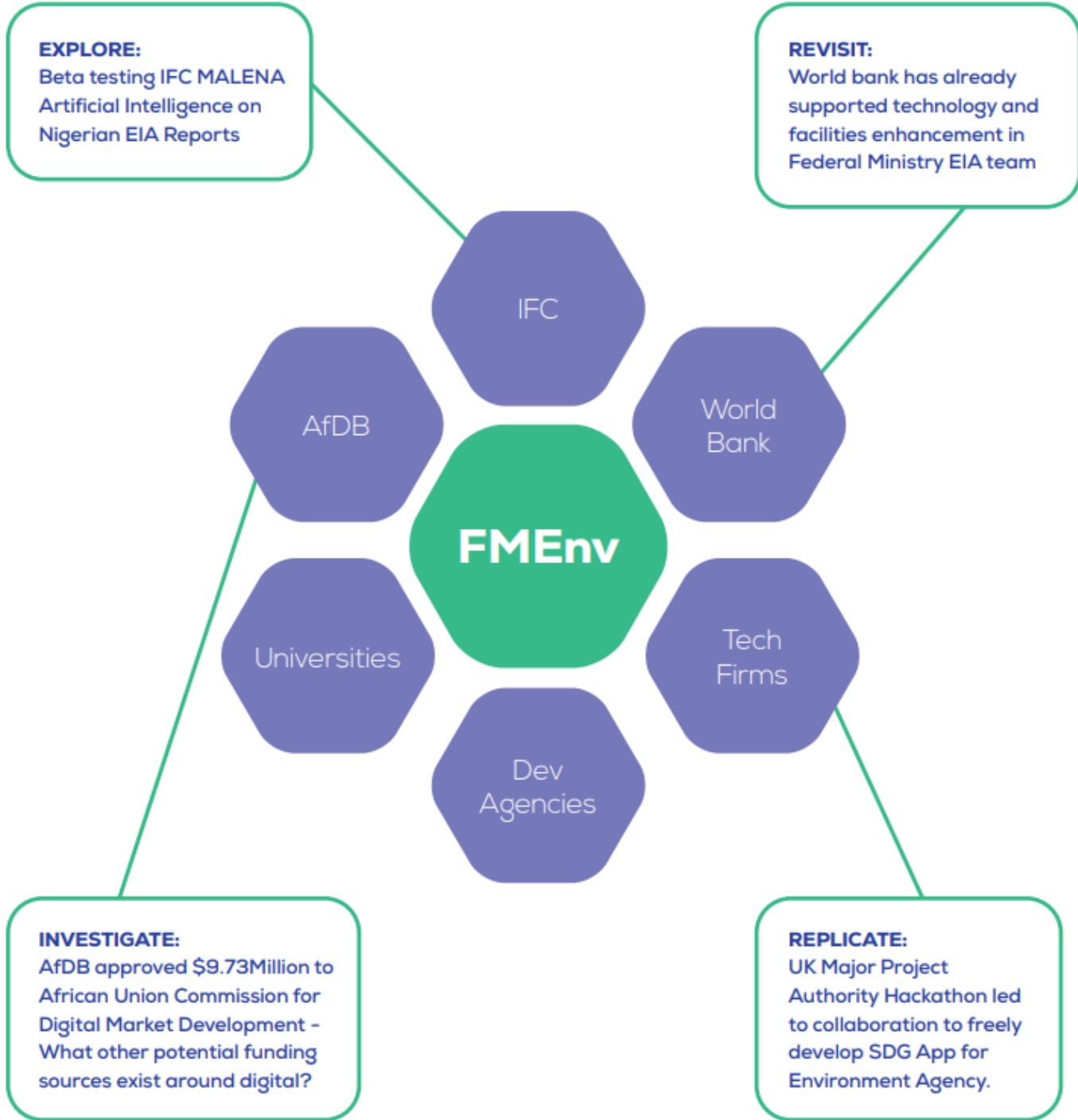
Barriers exist to rapid broad scale Digital EIA

- **Commitment to Digitisation of EIA** - direction for success vs incremental steps.
- **Lack of Digital environmental and community Data** – considerable limitations exist on what environmental data is gathered, stored and available digitally.
- **Capacity challenges skills + systems** – within Government the need for ICT skills not previously recognized and EIA recruitment not caught up, thus current approach is build-up from within staff.
- **Co-ordination across Government bodies and systems** – Linked to digital data is the multiple organisations and limited coordination on environmental data between + across levels of Government.
- **Learning from previous investments** - budget to upgrade / replace, risks in contracting 3rd party ICT support.
- **Moving from adopting Digital Technology to Digital Systems** – Government and Practice making clear progress with specific digital EIA technology advances, but meeting **ambitions** will require more systematic change. |
- **FUNDING...** - Budgets are limited and multiple linked focussed investments are required, additional sources are likely to be needed to untap the potential.

Significant Ambitions and Appetite for Digital EIA

Characterizing Nigeria's Digital EIA

- *Nigerian EIA practice is recognized as a leader in the adoption and deployment of digital EIA approaches, both locally and internationally.*
- *Advancing digital EIA approaches is achieved through collaborative partnerships with the joint aim of enhancing environmental performance and the delivery of sustainable development.*
- *Government understanding of digital approaches and the use of technology in EIA is ahead of that commonly held by proponents and their consultants.*
- *FMEnv has a strategy to further upgrade its approach, legislation, officers and equipment / technology to enable it to effectively adopt and deploy digital approaches across the EIA process.*
- *Future EIA related capacity building activities take account of how digital systems can play in supporting the delivery of more effective and efficient EIA.*



Progressing Digital IA requires collaboration

Our study identified multiple potential partners that could enable the FMEnv to advance the potential for digital EIA approaches in Nigeria.

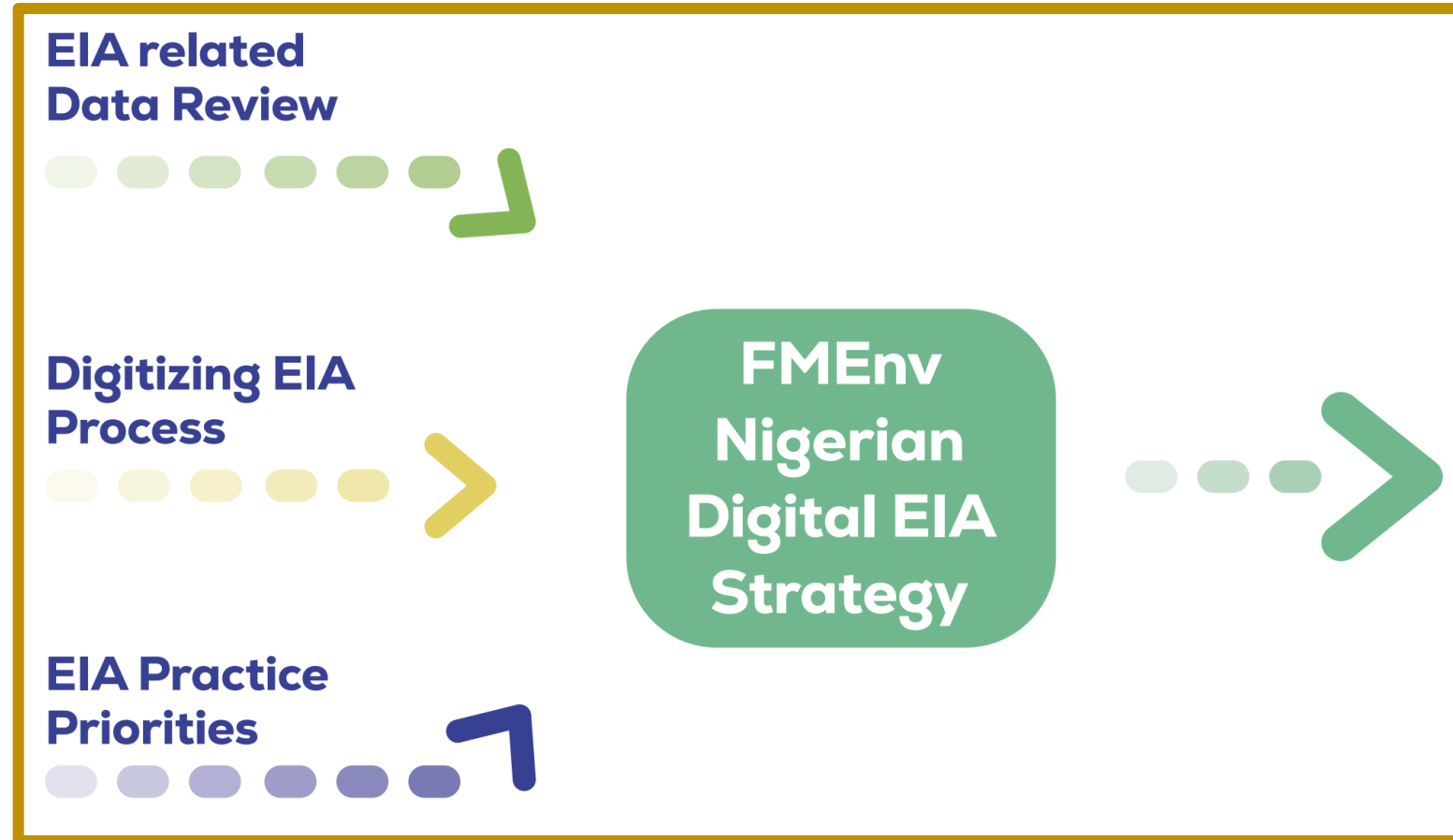


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Opportunities beyond FMEnv's *EIA Portal*

Enabling a *Nigerian Digital EIA Strategy*



Case Example &
Progress Update:
**Applying digital approaches to
EIA in Nigeria**

Etia Ndarake

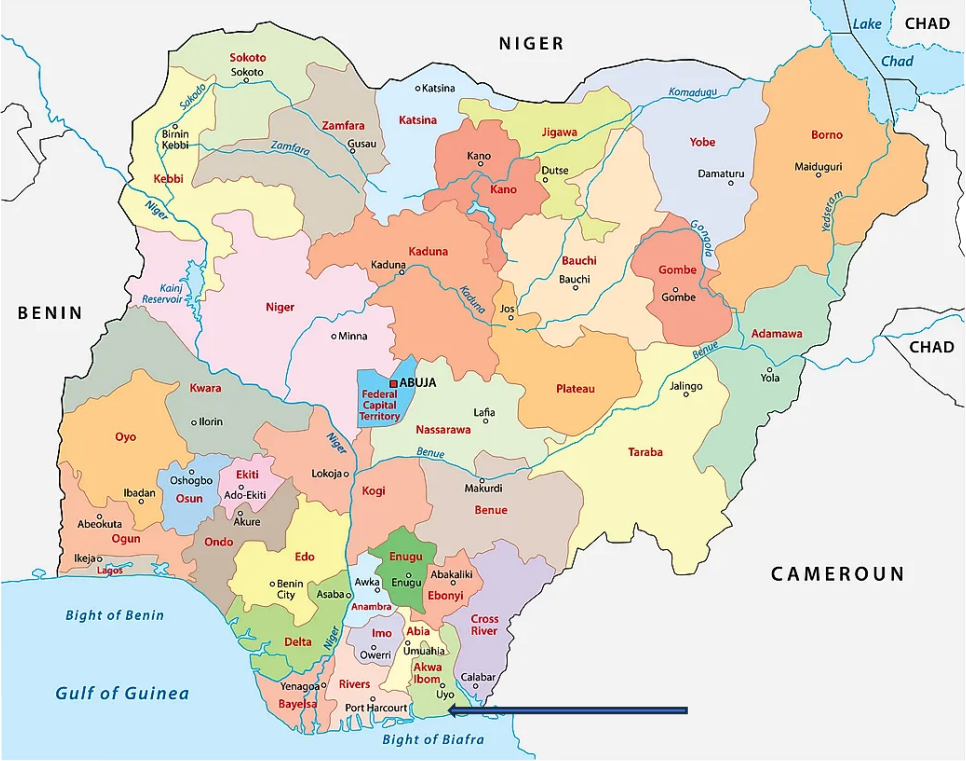


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Case Example & Progress Update: Digital EIA in Nigeria

Nigerian EIA
Process Flowchart



Map of Nigeria / Case example location
*****.worldatlas.com/maps/nigeria

Case Example & Progress Update: Digital EIA in Nigeria

Willend Integrated Waste Management Facility, located in Akwa Ibom State

Digital approaches considered on the Proposed Project

Digital Impact Assessment	
Digital Approaches & Technologies enabling progress in Digital IA	Digital Transformation within Aspects of the IA process
Inter-IA and online environmental and social management systems	Digital screening tools
→ Digital baseline data capture devices	→ Digital IA platform / workspace
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Online learning and capacity building	Digital follow-up: monitoring and auditing

Case Example: Digital EIA in Nigeria

Willend Integrated Waste Facility - EIA Digitisation Approach

Data collection	<ul style="list-style-type: none">• Drones for aerial surveys, land use, cumulative impacts• Air quality sampling
Data reporting / presentation	<ul style="list-style-type: none">• Geospatial data created on Mangomap (temporary) included sample collection points, parameters (temperature, humidity, surface water, ground water, soil, air quality, noise)• Mangomap link shared with FMEnv and EIA technical review panel <i>*****mangomap.com/wacuc0/maps/133338/Environmental-Sample-Points?preview=true# NO LONGER ACTIVE</i>• Online shared drive for review of EIA report, drone footage with EIA Consultant• EIA report to be hosted on project website (ArcGIS Story Map being considered)
Data analysis	<ul style="list-style-type: none">• Sentiment analysis IFC Malena software



Drone aerial photographs during EIA baseline data collection / site verification



Progress Update: Collaboration with IFC on Artificial Intelligence (AI)

FothergillTC introduced Willend to IFC and subsequently Willend facilitated the **Signing of Agreement** between FMEnv and IFC for deployment of MALENA-Machine Learning Environment Sustainability Governance Analyst (software).

Scope of the collaboration

- Beta test IFC's AI-powered solution MALENA on the FMEnv archive of historical Nigerian ESIA reports.
- Extract insights and benchmark data from the historical ESIA documents.
- Identify ways to make the FMEnv's review of reports faster and more efficient, enabling more comprehensive reviews and quicker project approvals.



Photograph of some attendees at the MALENA Design Thinking Workshop on December 6th, 2023, World Bank office, Abuja, Nigeria

E&S Insights screen

Company Name : Integrated Waste Management Project at Mkpanak

More Actions

E&S Insights | CG Insights | 11 Documents

Regions: All | Country: All | Sectors: All | Performance Standards: All | Topics: All | Risk Terms: All | Sentiment: All | Source: All | Date Range: 3/31/2023 - 3/31/2023

Summary | Details | Benchmark | Advanced Analytics

Company Profile

Integrated Waste Management Project at Mkpanak

The general objective of the Environmental and Social Impact Assessment of the proposed Integrated Waste Management Project at Mkpanak is to establish a baseline inventory repres...

E&S Sentiment



Positive: **696** | Negative: **210** | High Risk: **7**

[Learn More](#)

Top Topics

Name	Pos(+)	Neg(-)	%Neg
Resource Efficiency	0	3	100%
Contribution to Health Impacts Upon a Community	1	8	89%
Water Pollution	1	5	83%
Impacts to IUCN Vulnerable (VU), Endangered (EN) and Critically Endangered (CR) Species and Habitats	1	4	80%
Impacts to Water Sources	16	42	72%
Air Pollution	7	14	67%
Occupational Health	10	19	66%

Performance Standards

Name	Pos(+)	Neg(-)	%Neg
Biodiversity Conservation	13	7	35%
Community Health, Safety & Security	30	8	21%
ESG Risk Management	273	26	9%
Indigenous Peoples	1	0	
Labor & Working Conditions	115	36	24%
Land Acquisition & Resettlement	1	0	

Top 15 Risk Terms

Waste	Community	Imple...	Impa...	Grou...
	44			
139	E&S Managemen...	27	24	22
	Safety	22		
	Emergency			
50	Waste Management	31		
	Contamination	19	18	17
		18		16

MALENA ANALYSIS OF WILLEND PROPOSED WASTE FACILITY ESIA REPORT (DRAFT)

Documents screen

Document Name	Document Type	Pos(+)	Neg(-)	Date
Bibliography and Glossary of Terms.docx	ESIA/EIA	0	4	3/31/2023
Chapter 1 - Introduction.docx	ESIA/EIA	90	11	3/31/2023
Chapter 2 - Project Justification.docx	ESIA/EIA	68	4	3/31/2023
Chapter 3 - Project and Process Description.docx	ESIA/EIA	73	14	3/31/2023
Chapter 4 - Description of the Environment.docx	ESIA/EIA	40	42	3/31/2023
Chapter 5 - Associated & Potential Impacts.docx	ESIA/EIA	30	92	3/31/2023
Chapter 6 - Impacts Mitigation Measures (1).docx	ESIA/EIA	144	5	3/31/2023
Chapter 7 - Environmental and Social Management Plan.docx	ESIA/EIA	120	1	3/31/2023
Chapter 8 - Conclusion and Recommendation.docx	ESIA/EIA	22	0	3/31/2023
EXECUTIVE SUMMARY.docx	ESIA/EIA	108	37	3/31/2023
Table of Content IWMP.docx	ESIA/EIA	1	0	3/31/2023

Word Cloud



Loss of vegetation, and migration of wildlife species

The proposed IWMP area has been left fallow without significant activities for some time. Consequently trees, shrubs and herbs cover parts of the proposed project area. The vegetation of the site will be removed (lost) to give way to the office and ancillary facilities. The vegetation covers also serve as habitats for wildlife species such as birds, rodents, reptiles, etc. The removal of the vegetation will lead to the loss of the habitat, expose the wildlife to poaching.

Progress Update: What Next

- Continue to facilitate the MALENA Beta testing between IFC and FMEnv
- Willend Research Report to be presented at IAIA 2024 Conference in Dublin
- EIA report to be hosted
- **Willend and FothergillTC open to opportunities to collaborate**

Summary

Research Report

Enabling Digital Environmental Impact Assessment (EIA) in Nigeria



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IS
GREAT**

Digital EIA *Perspectives from key Participants* in the research study

1. **Dr Abbas Suleiman** - Director Environmental Assessment Department - FMEnv



2. **Mrs Margaret Adesida** - Director GIS / ICT Department - NORSDA



3. **Dr Andrews Aboje** - EIA Consultant

Q&A - Discussion

**Global Launch - Enabling
Digital Environmental Impact
Assessment (EIA) in Nigeria**

ANY
QUESTIONS
?



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Get in touch:
endarake@will-end.com

josh@fothergilltc.com