









# THE COMPANY

# OUR VISION

To be the preferred provider of Sustainable Development Consulting and Management Services in Nigeria.

## OUR MISSION

To provide services that articulate and win support for Sustainable Development options by deploying available local and international human and material resources that assure our promise of quality. Safe practices, innovation, consultation, adaptive management and client feedback shall guide all our operations. Environmental Resources Managers Limited (ERML) is a multidisciplinary sustainable development consultancy company established in 1994, with 100% Nigerian ownership.

ERML is served by skilled and experienced scientists, engineers and administrators and retains close professional links with universities and institutes in Nigeria and abroad.

Our head office is located in Lagos, Nigeria, and our field office/laboratory is in Warri, the heart of the Niger Delta.

We are recognized locally and internationally as an established provider of sustainable development services. Our understanding of development environment interactions is well established, while our knowledge of national and international environmental and social safeguard requirements such as those of the World Bank/IFC equip us to provide services across various industrial sectors and international borders. We have provided sustainable development consulting services across other African countries, including Ghana, Togo, Benin, Senegal, Liberia, Ivory Coast, Gambia and Mauritania.

# OUR DIRECTORS

Anthony M. Imevbore

Chairman

Retired Professor of Zoology, renowned Environmentalist and consultant to a number of United Nations Agencies.

# Victor O.

(B.Sc. MSc, - FIEMA, CEnv) Managing Director

A Petroleum Engineer whose vision and drive have ensured the steady growth of the company.

### Opral M. Benson (M.A.) Director

An opinion leader on social issues in Nigeria and internationally.

# MANAGEMENT STAFF

Victor Imevbore, BSc, MSc - Managing Director/CEO Emeka Erondu BA, MBA – Chief Admin Officer Gbenga Odetokun, BSc (ACA) – Chief Accounting Officer Alexander Adesuyi, BSc, MSc, PhD – Head, Environmental and Social Studies Department Abubakar Abdulmumin, BSc, MSc – Head, Environmental Monitoring Department Mary Akano, BSc, MSc PhD (in View) – Head Laboratory

The company is a leader in the field of industrial environmental services, with proven competence in:

- General Environmental Management
   Consulting
- Geographic Information Systems (GIS) Services
- Environmental Evaluation Studies/Reports (EES/EER)
- Post Impact Assessments (PIA)
- Environmental Impact Assessment (EIA)
- Environmental Sensitivity Indexing (ESI)
- Environmental, Social and Governance (ESG Consulting
- Environmental and Social Due Diligence (ESDD)
- · Remediation of Impacted Sites
- Environmental and Social Risk Management
  Systems

- Project Economic and Alternatives Analyses
- Biodiversity Studies
- Digital Mapping
- Land Use Planning
- Environmental and Socio-economic Baseline Surveys
- Social Impact Assessment (SIA) Studies
- Community Needs Assessments
- Regulatory Affairs
- Training on Sustainable Development and Environmental Management Tools
- Waste Management Solutions
- ESG Services



# OUR ORGANIZATION

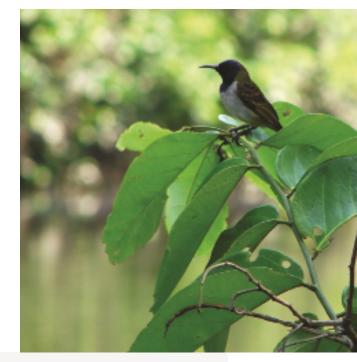
ERML is divided into distinct departments, and each department is guided by a departmental Standard Operating Procedure (SOP). ERML is also currently undergoing ISO certification.

# 1. The Environmental and Social Studies (ESS)

The ESS Department at ERML provides in-depth pre- and post-activity assessment of environment/activity interactions to identify and articulate issues, and to recommend practical and fit-for-purpose mitigative and corrective actions as necessary.

Specific functions include:

- Environmental Impact Assessments (EIAs)
- Social and Health Impact Assessments
- Environmental Evaluation Studies/Reports
   (EES/EER)
- Waste Management and Social Impact
   Studies
- Environmental Health Studies, Audits and Due Diligence Studies
- Regulatory Advice and Social Action Plans
- Corporate Social Responsibility Strategies
- Community Relations/Engagement/ Development Plans
- Community Development Interventions –
   Design, Planning and implementation





# 2. The Environmental Information Systems (EIS) Department

#### The EIS Department functions include:

- GIS Applications and Training
- GPS Applications
- Database Development
- Digital Cartography and Mapping
- Remote Sensing Interpretation and Application
- Reprographic Services
- Environmental Modeling

A few specific areas of expertise:

- Environmental Sensitivity Index Mapping (ESI)
- Facility Management
- Land use mapping
- Habitat change detection
- Base maps for vehicular tracking





The Environmental Monitoring Department

3.

Environmental Monitoring requires skilled staff, special training and appropriate tools.

The EM Department provides the following services:

- Environmental Baseline Surveys (Offshore and Onshore)
- Ambient Air Quality Sampling
- Ecotoxicology Assessments
- Degraded Ecosystem Restoration
- Implementation of Environmental Monitoring Plans
- Socio-economic baseline Surveys
- Pollution Monitoring
- Oil Spill Response

5

# 4. The Oil Spill Response and Waste Management Department

The department focuses on:

- Oil Spill Response Services, Exercises and Drills
- Preparation of oil spill contingency plans
- Oil impacted site investigation and monitoring
- Remediation and Ecological Rehabilitation
   of impacted sites
- Design and implementation of innovative municipal and industrial waste handling options



5. Environmental, Social and Governance (ESG) Services

The department focuses on:

- Development of ESG Policies
- Environmental, Social and Governance
   Due Diligence
- ESG Training, Performance Evaluation and Benchmarking









Over the last 20 years, ERML has invested in the analytical capabilities of the Department, and is one of the bestequipped private laboratories in Nigeria.

The laboratory is sectionalized into:

- Water Chemistry laboratory
- Soil laboratory
- Microbiology laboratory
- Toxicity laboratory
- nstrument laboratory
- Extraction laboratory

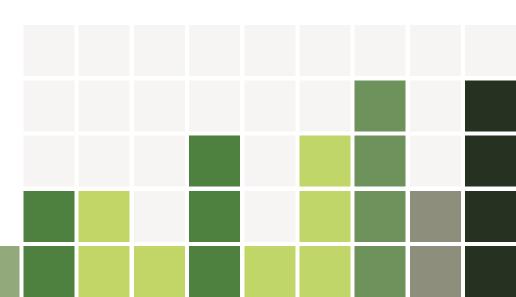
Equipment and Standard Operating Procedures (SOP) used in the laboratory are in line with Nigerian regulatory recommendations and internationally accepted practices. The laboratory also provides human and equipment resources for environmental field sampling.



7. The Admin and Finance Department

Our seasoned administrators and chartered accountants ensure that business objectives and client expectations are not hampered by administrative or financial bottlenecks.





# **RELEVANT EXPERIENCE**

ERML has extensive experience dealing with the Nigerian upstream oil environmental and social challenges, and other industrial sectors within and outside Nigeria.

### **1**. The Environmental and Social Studies (ESS) Department

Most recent EIA Studies (spanning the past 5 years) include:

- Environmental, Social and Health Impact Assessment for the Olokola LNG Project (onshore and offshore components) (2016)
- Environmental Impact Assessment of the Udele/Ofrima Field Development Programme
  Offshore Nigeria for Addax Petroleum (2016)
- Environmental and Social Impact Assessment of the LNG plant to be situated at Rumuji Community in Rivers State by Greenville Oil and Gas Company Limited (2015)
- Environmental Impact Assessment (Update 2) of the Brass LNG Project (Onshore and Offshore) (2015)
- Environmental and Social Impact Assessment 3D Seismic Data Gathering in in OPL Blocks 311, 214 and 322 for Harvex Geosolutions Limited (2018)
- Update of Environmental and Social Impact Assessment of Additional Well Drilling and Water Flood Rerouting in the Bonga Field for Shell Nigeria Exploration and Production Company Limited (2018)
- Environmental and Social Impact Assessment of the Alternative Crude Oil Evacuation System from OML 18 in Rivers State for Energy Link Infrastructure (ELI) (2019)
- Environmental and Social Impact Assessment of the Tubu Field Development Program for AMNI International Petroleum Company Limited (2017)
- Environmental and Social Impact Assessment of the East-West Offshore Gas Gathering System by Dangote (2019)

### A record of work predating 2016 is available upon request.

### 2. Environmental Monitoring/Baseline/Post Impact

Our experience in the area of environmental monitoring covers compliance monitoring, environmental baseline surveys required to support EIA studies, post impact studies and others.

Completed studies/projects in this area over the past 5 years are :

- · Environmental sampling for all EIA studies earlier listed
- Post Drill Seabed Survey in Okoro Field for AMNI International Petroleum Development Company (2017)
- Biomonitoring of Produced Water Discharge from Bonga Field for Shell
- Nigeria Exploration and Production Company Limited (2018)
- Biomonitoring of Produced Water Discharge from Okoto Field for AMNI International Petroleum Development Company (2018)
- Two-Season Biophysical and Social Baseline Studies for ESIA of Kwale Industrial Park (2020) for Gas Invest Limited
- Hydrology and Hydrogeology Studies of the Lekki Lagoon to support environmental and social management of the Dangote Refinery and Petrochemical Plants, Lekki, Lagos (2020)
- Two-Season Biophyisical and Social Baseline Studies for ESIA of Ogini Refinery for Montserrado Limited (2021)
- Two-Season Biophysical and Social Baseline Studies for ESIA and Environmental Evaluation Studies (EES) of OML 42 for Neconde Energy Limited (2021)

A record of work predating 2016 is available upon request.



#### Experience spanning the past 5 years includes:

- Environmental and Social Due Diligence and Advisory Services to Major African Private Equity Firms for Investments in:
  - o RMG Holdings Limited (Ivory Coast and Ghana)
  - o Protea Select Hotel, Ikeja, Nigeria
  - o Protea Select Hotel, Takoradi, Ghana
  - o Protea Select Hotel, Benin Nigeria
  - o Fountain Spring Estate, Lagos
  - o Union Bank Nigeria PLC
  - o Bankers Warehouse Limited
  - o Drill Corp Sahara Drilling Company, Mauritania
  - o Satrec Milk Processing Company, Senegal
  - o Primewater View Estate, Lagos Nigeria
  - o Elton Company, Senegal

- o Primrose Property Development Company, Accra, Ghana
- o Mouka Foam, Nigeria Limited
- o Film House Nigeria Limited
- o Wakanow Nigeria Limited
- o Onitsha Mall, Nigeria
- o Gas Train Nigeria Limited
- o Festival Mall, Lagos Nigeria
- o Metro City Estate Development, Abuja Nigeria
- o Protea Hotels, Lagos, Benin, Nigeria
- o Cornerstone Insurance Nigeria PLC
- o Nigerian German Chemicals
- o 9Mobile Telecommunications
- Environmental and Social Due Diligence of the Shiroro Hydropower Plant for A Financial Institution (2018)
- Environmental and Social Due Diligence and Safety Audit of Oil and Gas Facilities in OML 30, Western Niger Delta (2018)
- Update of Environmental and Social Due Diligence of OML 18 in Eastern Niger Delta (2017)
- Environmental and Social Due Diligence of 9Mobile Telecommunications (2019)
- Environmental and Social due Diligence of African Natural Resources and Mines Limited (2021)
- Environmental and Social Due Diligence of Axxela Group of Gas Companies (2021)

#### A record of work predating 2016 is available upon request.

### 3.2. ESG Policy Development and Training

- Environmental and Social Risk Management Advisory Services to African Capital Alliance
   (Nigeria's foremost Private Equity Firm
  - o Development of ESG Policies and Guidance Notes for E&S and Governance Assessment
  - o ESG Training
- Fidelity Bank PLC
  - o Development of E&S Policies
  - o Training on Sustainability and E&S Risk Management
- Infrastructure Guarantee Company Limited (InfraCredit)
  - o Preparation and production of E&S Policies
  - o Preparation and Production of Development Impact Implementation Framework
  - o E&S Risk Management
- African Investment Group (AFIG), Senegal
  - o Environmental and Social Risk Management Advisory Services

10

### **4.** Bioassays

ERML's laboratory has over the years conducted toxicity testing to determine LC50 of over 100 oil industry chemicals and Produced Water. Test procedures have been in accordance with Nigerian

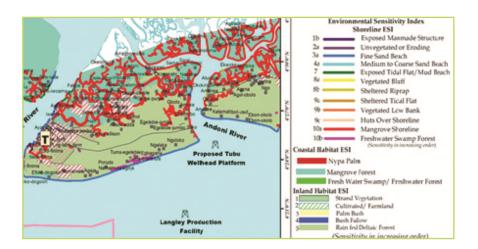
regulatory requirements and on occasion, other standards. We have also conducted bioaccumulation studies on a number of chemicals and industrial effluents.

# **5.** Environmental Sensitivity Index (ESI) Mapping and Geographical Information Systems (GIS) Applications

Specific projects implemented in this area are:

- Environmental Sensitivity Index Mapping (ESI) of Nigeria's outer coastline (1:50,000)
- Environmental Sensitivity Index (ESI) Mapping to support operations Texaco Overseas Petroleum Company of Nigeria (TOPCON) (1:50,000)
- Implementation of GIS and Remote Sensing Systems to support Environmental Management in Shell Petroleum Development Company of Nigeria (SPDC) HSE-ENV
- Development of ESI Standards and Protocols Development for the Oil Producers Trade Section of the Lagos Chamber of Commerce (OPTS)
- Design and implementation of Geographic Information System (GIS) for VNL (now Airtel) in Nigeria
- Preparation of ESI Maps (1:25,000) and implementation of GIS Environmental Database to support operations of Shell Nigeria Exploration and Production Company (SNEPCO) offshore Nigeria
- Preparation of ESI Maps (1:25,0000 to support operations of AFREN Energy Resources offshore Nigeria
- Preparation of ESI Maps for Tubu Field Development for AMNI International Petroleum Development Company
- Preprataion of ESI Maps for the Alternative Crude Oil Evacuation System for OML 18 for Energy
  Link Infrastruture

### A record of work predating 2016 is available upon request.





### 6. Social Impact and Community Relations/Development

- Socio economic baseline surveys
- Social Action Plans
- Needs Assessments
- Development Interventions

A selected list of social impact and or community relations/development studies or other programmes we have implemented:

- Socio economic baseline survey and social impact assessment for development of Allied Energy oil field in shallow offshore waters
- Socio economic baseline survey and social impact assessment for the first deepwater oilfield development in Nigeria (Bonga field) by Shell Nigeria Exploration and Production Company
- Socio economic impacts of the oil spill at Chevron's Utonana field in the Western Niger Delta
- Social Action Plan for Chevron's Escravos Gas To Liquid (EGTL) Project
- Social Action Plan for Chevron's Escravos Gas Plant Phase 3
- Socio economic baseline survey, Community needs assessment, and Strategic social impact assessment for ALL Chevron operations in the Niger Delta
- Socio economic impact assessment for Ugborodo New Town Development for Chevron Nigeria Limited
- Socio economic baseline surveys and social impact assessment of dredging of the Escravos
  River for Chevron Nigeria Limited
- Socio economic baseline surveys to support Environmental Index mapping for Shell Petroleum Development Company of Nigeria locations in the eastern Niger Delta
- Socio economic baseline surveys and social impact assessment to support consolidated oil field development in the eastern Niger Delta
- Design and implementation of a Lagos State Fishery Demonstration project
- Social impact assessment of the proposed Floating Liquefied Natural Gas plant for Statoil
   Nigeria Limited
- Socio economic baseline survey and social impact assessment for Abo field development for Nigerian Agip Energy







- Human Development Report and Agenda for the Niger Delta for the UNDP
- Assessment of social, cultural and economic impacts of proposed supply base and fabrication site activities of deepwater Agbami field for Star Deepwater Limited
- Assessment of the social and economic impacts of the Escravos River dredging and sand filling of the Escravos Gas to Liquids Project forChevron Nigeria Limited.
- Identification and Scoping of Community Development Needs for PR Oil and Gas Resources/ Yinka Folawiyo.
- Fisheries Economic Displacement Study and Resettlement Action Plan (FED—RAP) for the Brass LNG Project
- Resettlement Action Plan Input Studies for Olokola LNG Project
- Resettlement Policy Framework for ACE Cable Project in Liberia
- Resettlement Policy Framework for Ikot Abasi Power Project
- Social Impact Analysis of the Aje Field Development Programme
- Development of Social Intervention Programmes for Greenville Oil and Gas Company in Rumuji Community of Rivers State
- Environmental and Social due Diligence of African Natural Resources and Mines Limited
- Environmental and Social Due Diligence of Axxela Group of Gas Companies

### 7. Regulatory Affairs, Standards and Safeguard Requirements

ERML has provided the following services on regulatory support, standards and safeguard requirements to the listed clients.

- Development of A Biodegradation Protocol for Nigeria, for the Department of Petroleum Resources (DPR)
- Environmental Social Risk Management Advisory Services to Fidelity Bank of Nigeria includes development of Sustainable Banking Policy and Guidance Notes, Training and implementation support
- Development of Health Safety and Environment Management Systems for:
  - o Yinka Folawiyo Petroleum
  - o Greenville Oil and Gas Company Limited
- Permitting Services we have worked with the following clients to ensure understanding and
  - prompt compliance with permits relevant to their projects:
    - o Yinka Folawiyo Petroleum
    - o Eroton Exploration and Production Company Limited
    - o Energy Link Infrastructure
    - o Greenville LNG
    - o Neconde Energy Company



Over the past 20 years, ERML has been retained to conduct other special environmental and social studies or investigations to support environmental management of various industrial activities. Examples of such special studies include:

- Environmental Impact Assessment, Risk Analysis and Hazard Assessment for Texaco Nigeria Plc.
- Remediation of Niger Delta Environmental Survey (NDES) Preliminary
- Report Phase 1
- Mangrove Restoration in the Niger Delta for Chevron Nigeria Limited
- Hydrography and Bathymetry Survey for Chevron Nigeria Limited
- Chemical Investigation of Land Farming of Drill Cuttings for the Escravos
- Gas to Liquid Project
- Environmental and Social Management Framework for World Bank/Infrastructure Concession
  and Regulatory Commission of Nigeria
- Specialist Opinion on Environmental and Social Issues associated with the Eko Atlantic Project
- Environmental and Social Management Framework for the ACE Cable Project in Liberia
- Environmental Assessment of alleged polluted waters to support court defence of Coca Cola Nigeria Biomonitoring of Produced Water Discharge from AMNI Petroleum operations in Ima and Okoro Fields
- Biomonitoring of Produced Water Discharge from Mobil Producing Nigeria (MPN) operations in Qua Ibo Terminal (QIT), offshore Akwa Ibom State.
- Shoreline Change Assessment along Lagos Outer Coast near Dangote Refinery Site.
- Desktop Review of Produced Water/Biomonitoring Studies for Oil Producers Trade Section (OPTS) of Lagos State Chamber of Commerce and Industry
- Gas Development Project Experience
  - o Due Diligence of Brass LNG Project
  - o Economic Analysis of LNG vs other fuels for Greenville LNG Limited, Rumuji Delta State
  - o Due Diligence of Egboama LPG Plant, Delta State
  - o Due Diligence of Gas Terminalling Facility, Lagos State
  - o Due Diligence of Viathan/Gasco Marine CNG Plant
  - o Review of various Diesel to Gas Projects for Possible Financing for International Finance Corporation (IFC)

### 9. Other Training

ERML is also involved in capacity building on HSE matters for its clients.

- ESI Mapping and Geographical Information Systems (Nigerian Oil Companies California and Boston
- ESI Mapping Shell Petroleum Development Company of Nigeria
- Environmental Impact Assessment Process Regulators of the West African Gas Pipeline Countries (Nigeria, Benin, Togo, Ghana)
- Environmental Management Tools HSE Staff of Chevron Nigeria Limited
- Community Relations and Social Action Planning Yinka Folawiyo Petroleum Limited
- Environmental Impact Assessment Liberia Telecommunications authority
- Qualitative and Quantitative Impact Assessment Procedures Federal Ministry of Environment, Nigeria

14

## 10.1 Oil Spill Response, Remediation and Waste Management

Our involvement in oil spill response and waste management activities includes provision of spill equipment, spill response experts, preparation of emergency response plans, produced water treatment facilities and preparation of waste management plans.

Relevant experience spanning the past 5 years includes:

- Post Impact Assessment Studies to support Oil Spill Litigation for AMNI Petroleum International Development Company (2018)
- Clean up of Impacted sites in Ogoni Land (ongoing)

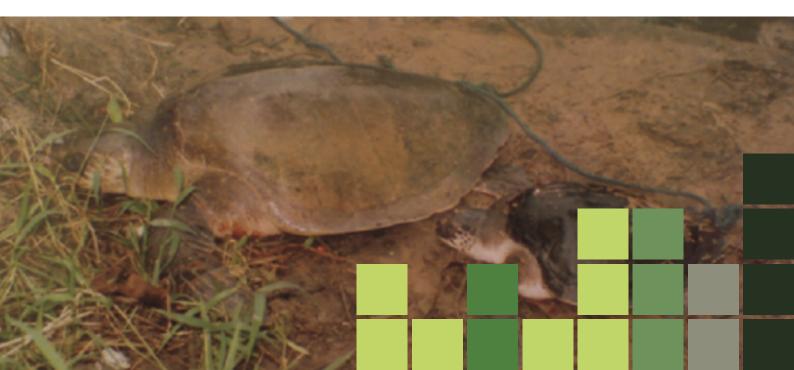
A record of work predating 2016 is available upon request.

### 10.2 Produced Water Treatment Solutions

In response to more stringent regulations on produced water and other effluent discharges, ERML is progressing research and solutions to deliver zero harmful discharge options for the Nigerian Oil Industry as an alternative to the current absolute zero discharge regulations.

Relevant recent activities in this area include:

- Design of Produced Water treatment solution
- Permitting of solution
- Equipment and personnel supply
- · Rental and operations of produced water treatment facilities



### 11. Ongoing Projects/Programmes/Studies

As of January 2021, our list of ongoing studies/projects are as follows:

- Long-term Air Quality Monitoring for the Chevron Nigeria Limited operation in Western Niger Delta.
- Environmental Advisory Services (Due Diligence, Monitoring, Training and Policy) for African Capital Alliance (Major African Private Equity Firm)
- Environmental Advisory Services (Due Diligence, Monitoring and Policy) for Advance Finance
   Investment Group (Senegal) projects
- Development of Social Interventions for Greenville Oil and Gas Company activities in Rumuji Community, Rivers State
- Environmental and Social Impact Assessment of the Kwale Industrial Park
- Environmental and Social Impact Assessment of the Ogini Refinery and Dimethyl Ether Project, Delta State
- Environmental and Social Impact Assessment of Further Field Development Activities in OML 26, Western Niger Delta
- Environmental and Social Impact Assessment of Further Field Development Activities in oil and gas fields of OML 18, Eastern Niger Delta
- Environmental and Social Impact Assessment of the Notore Fertilizer Train II Expansion Project
- Environmental and Social Impact Assessment of the Proposed LPG Terminal in Onne by Hyde Energy Limited
- E&S Monitoring, Due Diligence and Development Impact Monitoring for InfraCredit.

# **OUR FACILITIES**

### OFFICE FACILITIES

ERML offices are equipped with state-of-the art Information Technology (IT) facilities. These include:

- Over 45 Personal Computers (PCs) some of which are capable of handling large data sets of over 20GB in size
- · Several HP DeskJet and LaserJet printers (Handles various size papers)
- Plotters (AO and A1 sizes)
- Digitizers (A1 and AO sizes)
- Scanners (A3 size capability)
- Photocopiers
- · Network interconnection and individual email facilities for all staff and workstations.



Software applications typically used include the following:

- · All ranges of Microsoft packages (MS Office, MS Project, Publisher and others)
- GIS ArcGIS, V 9, ArcView 3.3 with Spatial analyst and image analyst extensions, ArcInfo 7.1, ER Mapper 6.1, and Auto Cad 2000 Statistical
- Packages SPSS, SAS
- Modeling OSIS for Marine Applications
- Laboratory Chem Station, Lab Manager and others.

# LABORATORY FACILITIES

The following field and laboratory equipment are available at the ERML Laboratory Department:

#### 1. General Laboratory Facilities

#### 4. Microbiological Analysis

- Balances .
- Machine Distillers
- Dessicators
- Hot Plates
- De-Ionizer Model (Fistream)
- Centrifuges
- Refrigerators, Deep Freezers and Oven

#### 2. Field Studies

- · Conductivity Meters
- Salinity Meters •
- PH Meters
- Water Samplers
- Eckman Grabs
- Current Flow Meters
- Dissolved Oxygen Meter with Probe
- Global Positioning System (GPS)
- Compasses
- Hand held Levels
- Clinometers
- Graduated Staff Poles •
- Thermometers
- Hand Augers
- Plankton Nets .

### 3. Chemical Analyses

- Moisture Extraction Oven
- DR/2000 Spectrophotometer
- Varian UV-VIS spectrophotometer
- Hach Turbidimeter (2100 P)
- COD Reactor (Hach)
- · Atomic Absorption Spectrophotometer and **Mircowave Plasma Atomic Emissions** Spectrophotometer
- Hewlett Packard GC / FID and GCMS
- Centrifuge Sonicator

- - Millipore Testing Kit (Bacteriology)
- Autoclave
- Incubator
- Dessicator
- Microscopes

### 5. Soil/Sediment and Water Studies

- Test Sieve Shaker
- Muffle furnace
- Orbital Shaker
- Soxhlet Oil Extractor
- Aluminum Block Digesters BD-20
- Redox Electrodes

#### 6. Toxicity Experiment

· Aquarium tanks of various sizes filled with pump and filter

### 7. Digital Mapping Equipment

- Digitizers
- Scanners
- **High Speed Computers**
- Global Positioning Systems (GPS) •
- **Digital Cameras**

### 8. Air Quality Studies

- LaMotte Air Sampling Kit
- ELE PID Volatile Organic Compound (VOC) Meter
- Taylor Winscope Anemometer
- Extech Noise Level Meter
- Skyes Pyranometer
- Pretel Altimeter
- Pretel Hygrometer



# OUR CLIENTS

## WE TAKE PRIDE IN ALL WORK WE DO WITH EACH OF OUR CLIENTS

- Addax Petroleum Development
   (Nigeria) Limited
- AES Barge Nigeria Limited
- Allied Energy
- African Capital Alliance
- Advance Finance and Investment Group
- AMNI International Petroleum
   Development Company
- AFREN Energy Limited
- Aiteo Consortium
- Baroid Drilling Fluids Nigeria Limited
- Brass LNG Limited
- Chevron Nigeria Limited
- Conoco Exploration and Production
   Company Limited
- Consolidated Oil (Conoil)
- Crestar Integrated Natural Resources
   Limited
- Dangote Group
- Department of Petroleum Resources
- Elf Petroleum Nigeria Limited
- Enron Nigeria Barge Limited
- Eroton Exploration and Production Company Limited
- ESSO Exploration and Production
   Company Limited
- First Bank of Nigeria PLC
- Fidelity Bank of Nigeria PLC
- First Hydrocarbon Limited
- Greenville Oil and Gas Company Limited
- Hyde Energy Limited PLC

- Hydrocarbon Pollution Remediation
   Project (HYPREP)
- Infrastructure Guarantee Company Nigeria Limited (InfraCredit)
- Infrastructure Concession and Regulatory
   Commission of Nigeria
- Julius Berger Nigeria
- Korean National Oil Company
- Mobil Producing Nigeria
- Neconde Energy Limited
- Niger Delta Environmental Survey
- Nigerian Agip Oil Company
- Notore Fertilizer
- Oil Producers Trade Section of the Lagos State Chambers of Commerce
- Olokola LNG
- Platform Petroleum Limited
- Schlumberger Dowell
- Schlumberger Sedco Forex
- Shell Nigeria Exploration and Production
   Company
- Shell Petroleum Development Company
   of Nigeria
- Statoil Nigeria Limited
- Texaco Nigeria Limited
- Total Upstream Nigeria Limited
- United Nations Development Programme (UNDP)
- VEE Networks Limited (now Airtel)
- Yinka Folawiyo Petroleum Limited

18

# OUR COLLABORATIONS

ERML has collaborated with, and maintains strategic alliances with the following international companies:

## Applied Science Associates

Rhode Island USA (Marine Information Systems)

# BMT Cordah, UK

Marine Environmental Risk, Fate and Effects Modeling

# WKC Group (South Africa)

Air Quality, Noise Modelling, Greenhouse gas and climate change studies

## Veolia Europe

Produced Water Treatment Solutions

## Blackbuck Resources (USA)

Produced Water Treatment Solutions, Crude Processing Equipment

## Environmental and Social Advisory Services Limited

Peer Review of E&S Services

# KEY PERSONNEL

24 full-time staff in different areas of specialization Over 12 Associates and part time Consultants Experts employed on a case-by-case basis

- Mr V. Imevbore (BSc, MSc) Managing Director, Chartered Environmentalist (FIEMA, FNES)
- Dr A. Adesuyi (Bsc, MSc, PhD) Senior Specialist, Environmental Studies and Monitoring.
- Mr. A. Abdulmumin (BSc, MSc) Senior Specialist, Environmental Studies and Monitoring
- Mr O. Shotonwa (BSc, MSc) ESG Specialist,
- Mr S. Hume (BSc, MSc) Senior Specialist, Environmental Impact Assessment, DFI Requirements
- Ms Akano (BSc, MSc) Laboratory Manager
- Mr. T. Abayomi (BSc, MSc) Environmental/GIS and Mapping Specialist
- Mrs. B. Bohanmayo (BSc, MSc) GIS/Mapping Specialist
- Mr G. Odetokun BSc, ICAN Chief Finance Officer
- Mr E. Erondu (BSc, MBA) Chief Admin Officer



## HEALTH AND SAFETY POLICY / STAFF WELFARE PACKAGE

The full complement of PPE is provided to ERML staff involved with oil and hazardous chemical consulting. We routinely provide training designed for Hazardous Waste Operations. Emergency Response Standards are routinely provided to cover personnel whose specific duties require 40-hour, 24-hour, and/or 8-hour refresher training to meet the applicable laws pertaining to any operation.

To supplement the training, ERML is developing Occupational Health and Safety programme plans and a medical surveillance programme to support government and commercial projects.

### SOCIO-CULTURAL ISSUES AND COMMUNITY RELATIONS

We pay particular attention to community relations and stakeholder opinions/perceptions during project implementation. Local labour is utilized whenever possible in order to stimulate the economy of the host community, and such local labour is placed under the firm discipline of ERML personnel, with the aim of enhancing the development of marketable skills in the communities and improving their understanding of industrial activity and environmental interactions.

### LONG-TERM STRATEGIC BUSINESS PLANS

Our goal is to develop full capability in several facets of sustainable development management by adopting state of the art technology, maintaining a highly trained and well-motivated work force, through strategic alliance and other infrastructure. We believe that we have enormous potential for growth and expansion, which is enhanced by the heightened global awareness of sustainable development concepts.

# CONTACT DETAILS

#### **Company Address:**

Block 61, Plot 11, Osaro Isokpan Street, Off Theophilus Oji Street, Off Fola Osibo Road, Lekki Phase 1, Lagos, Nigeria. Victor Ohioze Imevbore Tel: 234-1-2770711; 7746028 Fax: 234-1-2770712 info@erml.net

Dr Alex Adesuyi Tel: 234 – (0)8034704243 alex.adesuyi@erml.net | info@erml.net

### A. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Our Environmental Impact Assessment (EIA) experience dates back to the mid-1990s. EIA studies completed include a number of large complex projects, some of which were prepared to meet World Bank/IFC and other international standards. Completed EIA Studies include:

- Environmental Impact Assessments for Exploratory Drilling (various companies) (Mobil, Esso, Agip, Conoco, Elf, Statoil and others 1996,1997,1998)
- Environmental Impact Assessment for Allied Energy Resources Nigeria Limited (1997)
- Environmental Impact Assessment of Bonga Field Development for SNEPCO Limited (1999)
- Environmental Impact Assessment of the Barge Project at Egbin (BPE) for Enron Barge Nigeria Limited (2000)
- Environmental Impact Assessment of Escravos Gas to Liquid (EGTL) Project for Chevron Nigeria Limited (2002)
- Environmental Impact Assessment of Escravos Gas Plant Phase 3 (EGP3) for Chevron Nigeria Limited (2002)
- Environmental Impact Assessment of West African Gas Pipeline (WAGP) Project for Chevron Nigeria Limited (2003)
- Environmental Impact Assessment and Environmental Evaluation Studies of sites in Lagos State and the South Western Region of Nigeria for VEE Networks Limited Sites in Nigeria (2003)
- Environmental Impact Assessment for Oza marginal field development in Abia State (2003)
- Environmental Impact Assessment for 6 marginal fields development in Niger Delta (2001-2003)
- Environmental Impact Assessment Addendum for the West African Gas Pipeline (WAGP) Project (2003)
- Environmental Impact Assessments of the Ovade/Ogharefe Field for the Pan Ocean Oil Corporation (2004)
- Environmental, Social and Health Impact Assessment for the Brass LNG Project (onshore and offshore components) (2006)
- Environmental Impact Assessment of Deepwater Bonga North 3 Appraisal Well for SNEPCO (2009)
- Environmental Assessment and Opinion on Eko Atlantic City Project for First Bank Nigeria PLC (2006)



- Environmental Impact Assessment for Ajapa marginal field development in Offshore Delta State (2004)
- Environmental Impact Assessment of the Aje Field Development Project Offshore Nigeria (2015)
- Environmental Impact Assessment of the Ikot Abasi Power Plant (2014)
- Environmental Impact Assessment of the Greater Port Harcourt City Development Project (Phase 1A) (2015)
- Environmental Impact Assessment of the Okoro Offshore Further Field Development Project for AMNI Petroleum (2015)
- Environmental, Social and Health Impact Assessment for the Olokola LNG Project (onshore and offshore components) (2016)
- Environmental Impact Assessment of the Udele/Ofrima Field Development Programme Offshore Nigeria for Addax Petroleum (2016)
- Environmental and Social Impact Assessment of the LNG plant to be situated at Rumuji Community in Rivers State by Greenville Oil and Gas Company Limited (2015)
- Environmental Impact Assessment (Update 2) of the Brass LNG Project (Onshore and Offshore) (2015)
- Environmental and Social Impact Assessment 3D Seismic Data Gathering in in OPL Blocks 311, 214 and 322 for Harvex Geosolutions Limited (2018)
- Update of Environmental and Social Impact Assessment of Additional Well Drilling and Water Flood Rerouting in the Bonga Field for Shell Nigeria Exploration and Production Company Limited (2018)
- Environmental and Social Impact Assessment of the Alternative Crude Oil Evacuation System from OML 18 in Rivers State for Energy Link Infrastructure (ELI) (2019)
- Environmental and Social Impact Assessment of the Tubu Field Development Program for AMNI International Petroleum Company Limited (2017)
- Environmental and Social Impact Assessment of the East-West Offshore Gas Gathering System by Dangote (2019)

### B. ENVIRONMENTAL MONITORING/BASELINE/POST IMPACT

Our experience in the area of environmental monitoring covers compliance monitoring, environmental baseline surveys required to support EIA studies, post impact studies and others. Completed studies/projects in this area are:

- Environmental baseline surveys for EIA studies listed above.
- Compliance Monitoring of Flow Stations and Gas Plants for Shell Petroleu
- Development Company (SPDC) (W) (1996, 97, 98)



- Environmental Post Impact Assessment (EPIA) of the Oil Spill at Utonana
- Remediation of Impacted Area in Kokori Field for SPDC Western Division
- Environmental Monitoring of Gaseous Emissions in 6 Swamp Flare Sites for Shell Petroleum Development Company of Nigeria (SPDC) Western Division.
- Environmental Evaluation of Escravos Tank Farm for Chevron Nigeria Limited.
- Environmental Evaluation Study of Chevron Group IV Offshore Locations
- Environmental Baseline studies for EIA of Flowstation in Tuomo, Delta State for Agip Nigeria (2007)
- Risk Assessment of Abiteye Slipway for Chevron Nigeria Limited (2002)
- Ecological Baseline Survey for Aje 4 Appraisal Drilling Programme for Star Deep /Yinka Folawiyo
- Ecological Seabed Survey and Environmental Impact Assessment for Ebok Field Development in shallow waters offshore Cross River
- Provision of offshore vessel for Environmental Monitoring in 3 SNEPCO Deepwater Blocks
- Ambient Noise Studies for the Brass LNG Project
- Provision of vessel and personnel for Environmental Monitoring in SNEPCO Deepwater Blocks 219, 245 and 322
- Block wide Ecological Seabed Survey of Deepwater Blocks OPL Blocks 321 and 323 for Korean National Oil Company (KNOC)
- Environmental Monitoring for Construction Activities of the West African Gas Pipeline Company in Lagos, Benin, Togo and Ghana
- Post Drill Seabed Survey in Okoro Field for AMNI International Petroleum Development Company
- Biomonitoring of Produced Water Discharge from Bonga Field for Shell
   Nigeria Exploration and Production Company Limited
- Hydrology and Hydrogeology Studies of the Lekki Lagoon to support environmental and social management of the Dangote Refinery and Petrochemical Plants, Lekki, Lagos.

### C. ENVIRONMENTAL AND SOCIAL DUE DILIGENCE/AUDITS

Our proven experience in Environmental and Social Due Diligence and Audits cuts across regulatory requirements and others to support decision making on asset acquisition by investors and Financial Institutions. Past experience include:

- Environmental Due Diligence Study for Texaco Nigeria Limited (2000)
- Environmental Due diligence for the Brass LNG Project (2005)



- Environmental and Social Due Diligence of oil facilities and operations in OML 26 in Delta State for First Hydrocarbon (2012)
- Environmental and Social Due Diligence of oil facilities and operations in OML 40 in Delta State for Vertex Energy (2012)
- Environmental and Social Due Diligence of oil facilities and operations in
- OML 34 in Delta State for Neconde Energy Limited (2012)
- Environmental and Social Due Diligence of oil facilities and operations in
- OML 29 in Bayelsa State, for Aiteo Consortium (2014)
- Environmental and Social Due Diligence of oil facilities and operations in OML 18 in Rivers State for Eroton Exploration and Production Company (2014 and update in 2017)
- Environmental and Social Due Diligence of OML 25 in Rivers State for
- Crestar Integrated Natural Resources (2014)
- Environmental Due Diligence for African Foundries, Ikorodu, Lagos (2008)
- Environmental and Social Due Diligence and Advisory Services to Major
- African Private Equity Firms for Investments in:
  - o RMG Holdings Limited (Ivory Coast and Ghana)
  - o Protea Select Hotel, Ikeja, Nigeria
  - o Protea Select Hotel, Takoradi, Ghana
  - o Protea Select Hotel, Benin Nigeria
  - Fountain Spring Estate, Lagos
  - o Union Bank Nigeria PLC
  - o Bankers Warehouse Limited
  - o Drill Corp Sahara Drilling Company, Mauritania
  - o Satrec Milk Processing Company, Senegal
  - o Primewater View Estate, Lagos Nigeria
  - o Elton Company, Senegal
  - o Primrose Property Development Company, Accra, Ghana
  - o Mouka Foam, Nigeria Limited
  - o Film House Nigeria Limited
  - o Wakanow Nigeria Limited
  - o Onitsha Mall, Nigeria
  - o Gas Train Nigeria Limited
  - o Festival Mall, Lagos Nigeria
  - o Metro City Estate Development, Abuja Nigeria
  - o Protea Hotels, Lagos, Benin, Nigeria
  - o Cornerstone Insurance Nigeria PLC
  - o Nigerian German Chemicals



- o 9Mobile Telecommunications
- Environmental and Social Due Diligence of the Shiroro Hydropower Plant for A Financial Institution (2018)
- Environmental and Social Due Diligence and Safety Audit of Oil and Gas Facilities in OML 30, Western Niger Delta (2018)

### D. ENVIRONMENTAL SOCIAL AND GOVERNANCE (ESG) POLICY DEVELOPMENT AND TRAINING

- Environmental and Social Risk Management Advisory Services to African Capital Alliance (Nigeria's foremost Private Equity Firm
  - Development of ESG Policies and Guidance Notes for E&S and Governance Assessment
  - ESG Training
- Fidelity Bank PLC
  - Development of E&S Policies
  - o Training on Sustainability and E&S Risk Management
- Infrastructure Guarantee Company Limited (InfraCredit)
  - Preparation and production of E&S Policies
  - Preparation and Production of Development Impact Implementation Framework
  - E&S Risk Management
- African Investment Group (AFIG), Senegal
  - o Environmental and Social Risk Management Advisory Services

### E. BIOASSAYS

ERML's laboratory has over the years conducted toxicity testing to determine LC50 of over 100 chemicals (drilling fluds, complete mud systems, effluents and other oil industry chemicals). Test procedures have been in accordance with Nigerian regulatory requirements and on occasion, other standards (e.g., OECD, USEPA) for toxicity testing. We have also conducted bioaccumulation studies on a number of chemicals.

(\*erm

# ENVIRONMENTAL SENSITIVITY INDEX (ESI) MAPPING AND GEOGRAPHICAL INFORMATION SYSTEMS (GIS) APPLICATIONS

Specific projects implemented in this area are:

- Environmental Sensitivity Index Mapping (ESI) of Nigeria's outer coastline (1:50,000)
- Environmental Sensitivity Index (ESI) Mapping to support operations Texaco Overseas Petroleum Company of Nigeria (TOPCON) (1:50,000) Implementation of GIS and Remote Sensing Systems to support Environmental Management in Shell Petroleum Development Company of Nigeria (SPDC) HSE-ENV
- Development of ESI Standards and Protocols Development for the Oil Producers Trade Section of the Lagos Chamber of Commerce (OPTS)
- Design and implementation of Geographic Information System (GIS) for VNL (now Airtel) in Nigeria
- Preparation of ESI Maps (1:25,000) and implementation of GIS Environmental Database to support operations of Shell Nigeria Exploration and Production Company (SNEPCO) offshore Nigeria
- Preparation of ESI Maps (1:25,0000) to support operations of AFREN Energy Resources offshore Nigeria
- Preparation of ESI Maps (1:25,000) to support ESIA of Tubu Field Development for AMNI International Petroleum Development Company
- Preparation of ESI Maps (1:25,000) to support ESIA of Okoro Field Further Development Program

### F. SOCIAL IMPACT AND COMMUNITY RELATIONS/DEVELOPMENT

Since the mid 1990s members of the ERML team have been involved in a number of socio economic and related studies and programmes such as:

- Socio economic baseline surveys
- Social Action Plans
- Needs Assessments
- Development Interventions

A selected list of social impact and or community relations/development studies or other programmes we have implemented is presented below.

• Socio economic baseline survey and social impact assessment for development of Allied Energy oil field in shallow offshore waters



- Socio economic baseline survey and social impact assessment for the first deepwater oilfield development in Nigeria (Bonga field) by Shell Nigeria Exploration and Production Company
- Socio economic impacts of the oil spill at Chevron's Utonana field in the Western Niger Delta
- Social Action Plan for ENRON's (Now AES) Independent Power Plant at Egbin
- Social Action Plan for Chevron's Escravos Gas To Liquid (EGTL) Project
- Social Action Plan for Chevron's Escravos Gas Plant Phase 3
- Socio economic baseline survey, Community needs assessment, and Strategic social impact assessment for ALL Chevron operations in the Niger Delta
- Socio economic impact assessment for Ugborodo New Town Development for Chevron Nigeria Limited
- Socio economic baseline surveys and social impact assessment of dredging of the Escravos River for Chevron Nigeria Limited
- Socio economic baseline surveys to support Environmental Index mapping for Shell Petroleum Development Company of Nigeria locations in the eastern Niger Delta
- Socio economic baseline surveys and social impact assessment to support consolidated oil field development in the eastern Niger Delta
- Design and implementation of a Lagos State Fishery Demonstration project
- Social impact assessment of the proposed Floating Liquefied Natural Gas plant for Statoil Nigeria Limited
- Socio economic baseline survey and social impact assessment for Abo field development for Nigerian Agip Energy
- Human Development Report and Agenda for the Niger Delta for the UNDP
- Assessment of social, cultural and economic impacts of proposed supply base and fabrication site activities of deepwater Agbami field for Star Deepwater Limited
- Assessment of the social and economic impacts of the Escravos River dredging and sand filling of the Escravos Gas to Liquids Project forChevron Nigeria Limited.
- Identification and Scoping of Community Development Needs for PR Oil and Gas Resources/Yinka Folawiyo.
- Fisheries Economic Displacement Study and Resettlement Action Plan (FED—RAP) for the Brass LNG Project
- Resettlement Action Plan Input Studies for Olokola LNG Project
- Resettlement Policy Framework for ACE Cable Project in Liberia
- Resettlement Policy Framework for Ikot Abasi Power Project
- Social Impact Analysis of the Aje Field Development Programme



 Development of Social Intervention Programmes for Greenville Oil and Gas Company in Rumuji Community of Rivers State



### G. REGULATORY AFFAIRS, STANDARDS, AND SAFEGUARD REQUIREMENTS

ERML has provided the following services on regulatory support, standards and safeguard requirements to the listed clients.

- Development of A Biodegradation Protocol for Nigeria, for the Department of Petroleum Resources (DPR)
- Environmental Social Risk Management Advisory Services to Fidelity Bank of Nigeria includes development of Sustainable Banking Policy and Guidance Notes, Training and implementation support
- Development of Health Safety and Environment Management Systems for:
  - o Yinka Folawiyo Petroleum
  - o Greenville Oil and Gas Company Limited
- Permitting Services recognizes that Nigerian laws, guidelines and permit requirements are not readily available to project developers and as such many proponents violate extant laws and permit requirements and/or experience schedule slips and budget overruns. We have worked with the following clients to ensure understanding and prompt compliance with permits relevant to their projects:
  - o Yinka Folawiyo Petroleum
  - o Eroton Exploration and Production Company Limited
  - o Energy Link Infrastructure
  - o Greenville LNG
  - o Neconde Energy Company

### H. OTHER SPECIAL STUDIES/PROJECTS

Over the past 20 years, ERML has also been retained to conduct special studies or projects. Examples of completed special studies are:

- Environmental Impact Assessment, Risk Analysis and Hazard Assessment for Texaco Nigeria Plc.
- Remediation of Niger Delta Environmental Survey (NDES) Preliminary Report - Phase 1
- Mangrove Restoration in the Niger Delta for Chevron Nigeria Limited
- Hydrography and Bathymetry Survey for Chevron Nigeria Limited
- Chemical Investigation of Land Farming of Drill Cuttings for the Escravos
   Gas to Liquid Project
- Environmental and Social Management Framework for World Bank/Infrastructure Concession and Regulatory Commission of Nigeria



Specialist Opinion on Environmental and Social Issues associated with the Eko Atlantic Project

- Environmental and Social Management Framework for the ACE Cable Project in Liberia
- Environmental Assessment of alleged polluted waters to support court defence of Coca Cola Nigeria Biomonitoring of Produced Water Discharge from AMNI Petroleum operations in Ima and Okoro Fields
- Biomonitoring of Produced Water Discharge from Mobil Producing Nigeria (MPN) operations in Qua Ibo Terminal (QIT), offshore Akwa Ibom State.
- Shoreline Change Assessment along Lagos Outer Coast near Dangote Refinery Site.
- Gas Development Project Experience
  - Due Diligence of Brass LNG Project
  - Economic Analysis of LNG vs other fuels for Greenville LNG Limited, Rumuji
     Delta State
  - Due Diligence of Egboama LPG Plant, Delta State
  - o Due Diligence of Gas Terminalling Facility, Lagos State
  - o Due Diligence of Viathan/Gasco Marine CNG Plant
  - Review of various Diesel to Gas Projects for Possible Financing for International Finance Corporation (IFC).

### I. OIL SPILL RESPONSE, REMEDIATION, AND WASTE MANAGEMENT

Our involvement in oil spill response and waste management activities includes provision of spill equipment, spill response experts, preparation of emergency response plans, produced water treatment facilities and preparation of waste management plans. Relevant experience includes:

- Onsite technical support following the Mobil Oil Spill of 12 January 1998
- Expert witness services for Mobil Producing Nigeria Unlimited (1999-2007)
- Supply, Installation and Training on Oil Spill Response Equipment for SPDC
- Development of Waste Management Plan for Star Deepwater Limited (2003) Scoping and Supervision of Remediation and Rehabilitation of Crude Oil Impacted Areas in Ogoni Land (2009)
- Development of Waste Management Plan for Yinka Folawiyo Petroleum Limited (2013)
- Development of Waste Management Plan for Greenville Oil and Gas Company Limited (2015)
- Post Impact Assessment Studies to support Oil Spill Litigation for AMNI Petroleum International Development Company (2018)



• Clean up of Impacted sites in Ogoni Land (ongoing)

### J. PRODUCED WATER TREATMENT SOLUTIONS

In response to more stringent regulations on produced water and other effluent discharges, ERML is progressing research and solutions to deliver zero harmful discharge options for the Nigerian Oil Industry as an alternative to the current absolute zero discharge regulations. The approach and concept have been well received, leading to approval of a number of technology options marketed and sold by ERML. Considering that no two situations (e.g., water characteristics and location) are the same, we offer be-spoke solutions to upstream operators. Our services in this area include:

- Design of Produced Water treatment solution
- Permitting of solution
- Equipment and personnel supply
- Rental and operations of produced water treatment facilities

### K. OTHER TRAINING

ERML is also involved in capacity building on HSE matters for its clients. Some training programmes organized by ERML or which we provided resource persons are:

- ESI Mapping and Geographical Information Systems (Nigerian Oil Companies – California and Boston
- ESI Mapping Shell Petroleum Development Company of Nigeria
- Environmental Impact Assessment Process Regulators of the West African Gas Pipeline Countries (Nigeria, Benin, Togo, Ghana)
- Environmental Management Tools HSE Staff of Chevron Nigeria Limited
- Community Relations and Social Action Planning Yinka Folawiyo Petroleum Limited
- Environmental Impact Assessment Liberia Telecommunications authority
- Qualitative and Quantitative Impact Assessment Procedures Federal Ministry of Environment, Nigeria

### L. ONGOING PROJECTS/PROGRAMMES/STUDIES

As of January, 2022, our list of ongoing studies/projects are as follows:

- Long-term Air Quality Monitoring for the Chevron Nigeria Limited operation in Western Niger Delta.
- Environmental Advisory Services (Due Diligence, Monitoring, Training and Policy) for African Capital Alliance (Major African Private Equity Firm)



- Technical and Economic Evaluation of Produced Water Handling Options for Okoro Field, for AMNI Petroleum
- Development of Social Interventions for Greenville Oil and Gas Company activities in Rumuji Community, Rivers State
- Environmental and Social Impact Assessment of the Kwale Industrial Park
- Environmental and Social Impact Assessment of the Ogini Refinery and Dimethyl Ether Project, Delta State
- Environmental and Social Impact Assessment of Further Field Development Activities in OML 26, Western Niger Delta
- Environmental and Social Impact Assessment of Further Field Development Activities in oil and gas fields of OML 18, Eastern Niger Delta
- Environmental and Social Impact Assessment of the Notore Fertilizer Train II Expansion Project
- E&S Monitoring, Due Diligence and Development Impact Monitoring for InfraCredit.

