

UNIVERSITY OF PORT HARCOURT

**“A SUSTAINABLE NIGER DELTA:
STILL POSSIBLE ONLY IF...”**

A VALEDICTORY LECTURE BY

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PROGRAMME

- 1. GUEST ARE SEATED**
- 2. INTRODUCTION**
- 3. THE VICE CHANCELLOR'S OPENING
REMARKS**
- 4. CITATION**
- 5. THE VALEDICTORY LECTURE**

The lecturer shall remain standing during the citation. He shall step on the rostrum, and deliver his Valedictory Lecture. After the lecture, he shall step towards the Vice Chancellor, and deliver a copy of the Valedictory Lecture and return to his seat.

- 6. CLOSING REMARKS BY THE VICE
CHANCELLOR**
- 7. VOTE OF THANKS**
- 8. DEPARTURE**

DEDICATION

To my darling wife, Joy,
my children and grandchildren,
my siblings, and
the larger Akpokodje Family

Acknowledgements

My 44-year career in the University of Port Harcourt was made possible by a large number of people which space will not allow me to mention all of them individually by name. I acknowledge the contributions of you all!

Specifically, I acknowledge God Almighty for who he is, his love, and the abundant blessings he has graciously showered on me and my family. Next, are the people closest to me in my life; my darling wife and best friend Joy, my children who always make me a proud father by their character, my grandchildren, son-in-law and my daughter-in-law who elevated me to the status of a grandfather.

I salute this very exceptional institution, the Unique University of Port Harcourt that gave me the special opportunity for a fulfilled career that span 44 years. The University sponsored my MSc and PhD studies through the staff development programme. I appreciate the intimate friendly relationships I enjoyed with the last five Vice Chancellors of the University of Port Harcourt who were all my privileged neighbours in Delta Park. I acknowledge the former deans of the School of Physical Sciences and Faculty of Science (especially Prof. E. O. Ewvaraye, Late Prof. F. A. Onofeghara, Late Prof. E. O. Anosike, Prof S. N. Okiwelu, etc) who encouraged me and enthusiastically recommended me for promotion each time I qualified for one. I acknowledge the UPH staff, colleagues in the Faculty of Science and all other individuals who have over the years encouraged and helped me, through both endorsement and criticism.

I appreciate all my colleagues and staff of the Geology Department (my academic home for the past 44 years) for their contributions to my memorable period in the University of Port Harcourt. It was not agreement all the way but constructive disagreements are necessary spring boards for improved performance. I am particularly grateful to my students for being part of preparing them for career life, especially my MSc and PhD students who proudly call themselves “my academic children”. My wife and I appreciate all of you for setting up PAM (Professor Akpokodje’s Mentees) to celebrate our retirement.

I appreciate my former lecturers at the Universities of Ibadan, Ife, and New South Wales, Sydney, Australia, especially, my Ph.D degree supervisor, Prof. Francis C. Beavis. I acknowledge the contributions of my overseas research associates including, Dr. Owen White of the Ontario Geological Survey and International Association for Engineering Geology and the Environment, (IAEGE) Prof. Peter C. Hudec of the University Winsdor, Canada, Prof. M. C. Dusseault of the University of Waterloo, Canada, and Prof. Rodney Stevens of the University of Gutenberg, Sweden.

I am grateful to Prof. A. C. Tse and Dr. N. E. Ekeocha for proof reading this manuscript. Finally, I sincerely thank all the members of the Akpokodje family of Ikweghwu, Agbarho, Ughelli North LGA of Delta State and the Oji and Nkemdirim families of Usuikwato LGA of Abia state for their love.

A Sustainable Niger Delta: Still Possible only if...

“As we launch the master plan today, it is my abiding belief that we are also launching the commencement of a voyage of hope that will sail the Niger Delta past a legacy of turbulence, neglect and poverty into an assured future as our nation's most peaceful, most prosperous and most ecologically regenerative region by 2020”

(President Olusegun Obasanjo, excerpt from his speech at the public presentation of the NDDC Masterplan in 2005, Okereke, 2007:2).

1 Introduction: Forty-Four Years at UPH

“For everything, there is a season, a time for every activity under the heavens” (*Eccl 3:1*), a time to commence a career in the University of Port Harcourt and a time to retire, a time to deliver Inaugural Lecture and a time to deliver a Valedictory lecture. It is a great pleasure and honour to speak today in what will be my last official public lecture (15th valedictory lecture of the University of Port Harcourt; Appendix I) as a Professor of Engineering and Environmental Geology in the University of Port Harcourt. Simply put, a valedictory lecture is a farewell lecture and this is what I will try to accomplish this afternoon.

I delivered my inaugural lecture 22 years ago in 1998 at the PS Hall. It was the 18th inaugural lecture in the University of Port, the last inaugural lecture to be presented as part of the university convocation ceremony activities and the first inaugural lecture to be delivered in Nigeria in the discipline of Engineering and Environmental Geology. As I bow out of active public service at the University of Port Harcourt, I believe I owe it a duty to the current and next generation of staff and students, the benefits of my experience in the system. Apart from my strong belief in God, dedication

to my wife, children, extended family and friends/colleagues, the only other thing I am passionate about is education and mentorship, investing in young people and contributing positively in building the lives of others.

This valedictory lecture is also an occasion for me to thank UPH students, staff, colleagues and others who have over the years encouraged and helped me, through both criticism and endorsement. It is also an occasion to salute this very exceptional institution, the Unique University of Port Harcourt that gave me the special opportunity for a fulfilled career that span 44 years. Speaking sincerely from the bottom of my heart, I feel very honoured, blessed and humbled to have served this unique university as a lecturer, researcher, mentor and administrator.

As expected, the University of Port Harcourt in 2020 is remarkably different from what it was in 1976 when I joined as a Graduate Assistant. The pioneer Vice Chancellor spelt out his vision and *modus operandi* for the young university in his first formal meeting with staff in October 28, 1976 as follows (Alagoa, 1999, 2012):

“The institution should not be a mere reproduction of the older universities but should take advantage of the opportunities offered in a new university institution to innovate and make unique contribution to higher education in this country”

The pioneer Vice Chancellor and the principal officers worked together in unity and regular painstaking consultations with the Governing Council and other universities to lay a solid foundation for the University of Port Harcourt (Figure 1). We salute the sacrifices of all the pioneer staff. What we owe them is to do the work of the University of Port Harcourt in such a

way to continually improve the quality of teaching, research and administration. The pioneer administration gave high priority to recruitment of quality academic staff and training of young academic and administrative staff to build the stock of quality staff. This made the University of Port Harcourt renowned for the high quality of its staff.



Gov. Council
1981; Chairman
Alh Rafindadi
(Emir of Yauri);
VC, Prof D .E.
U. Ekong,
Registrar Mr. M.
E. Akpe, etc



Courtesy call on
Governor of
Sokoto state by
Uniport VC, Prof
D. E. U. Ekong,



Uni Sokoto
VC conducting
visiting
Uniport VC on
inspection of
on-going
projects

Figure 1 Uniport Governing Council members and Visit to Sokoto in 1981

The population of students and staff has grown astronomically since 1976. At its first and second convocation ceremonies in 1982 and 1983, the university graduated a total of 606 students (first degree and postgraduate) and in the combined 2016/2017 and 2017/2018, the total number of graduands was 9,452 (1,560 %)! Unfortunately, infrastructure growth has not kept pace with student population increase hence the severe infrastructure deficit. This is a very serious challenge that requires more innovative approach and cooperation of staff, alumni and friends of the university in both government and industry. As expected, Uniport has changed significantly in all aspects in the past 44 years. Change, they say, is the only thing that is constant. What is important however, is whether these changes are positive or negative?

Looking back at the past 44 years brings some degree of fulfilment and satisfaction. A few examples are worthy of note. One remembers with nostalgia, the youthful strength and enthusiasm with which one carried out selfless services during my first opportunity to be Acting Head of Geology Department from 1986-1988. Surely, I don't have that strength now! Still fresh in our mind, was the admirable teamwork and cooperation among colleagues in the department and the excellent working relationship with other Acting Heads of Department in the then School of Physical Sciences. I should hasten to add that there is need for the revival of the high spirit of teamwork, dedication and diligence to our duties and responsibilities that was prevalent in the University in the 1980s and 1990s. Recently, faced with the shameful reality of the possibility of total cancellation of the BSc Geology programme in 2018, all the staff of the Geology Department (academic and non-academic) worked assiduously as one united formidable team to ensure that the department was successful in the 2018 accreditation exercise despite the scarcity of funds. As a community, we should not underrate

the power of unity and teamwork. According to Chinua Achebe in the famous *“Things Fall Apart”*

“When we gather together in the moon light village ground, it is not because of the moon. Everyman can see it in his compound. We come together because it is good for kinsmen to do so. Therefore, let us continue with the team spirit and enjoy the power of togetherness. Let us smile not because we don’t have problems but we are (together) stronger than the problems”

According to Henri Nouwen, “Community” is the place where the person you least want to live with lives. It takes the grace of God, shared vision, commitment and hard work to form a successful and progressive university community.

I was privileged to be pioneer Chairman of the Professional Ethics Committee (2002-2005) which gave one an insight into the high degree of unethical academic practices and the need to combat them. A typical example is the practice of making the purchase of the lecturer’s textbook/handout as a condition for grading a student’s continuous assessment assignment/test. As an institution and as individual lecturers, these unjust practices can be greatly minimised if we truly regard ourselves and act as *‘parents-away-from-home’* to the students during their period of studies in the university. At convocations, we award our degree certificates with the phrase “-- *have been found worthy both in character and learning...*”. As the popular saying goes, *‘you can’t give what you do not have’*. What character have we given to the students if unethical practices are allowed to thrive in the system?

As the pioneer Director of the Institute of Natural Resources, Environment and Sustainable Development

(INRES), I had a unique opportunity for immensely rewarding interactions with academics from foreign countries and students from other African countries. The high discipline and focused qualities displayed by the students from other African countries became both a challenge and inspiration to some of the Nigerian students in the INRES programme. Interactions of staff and students with their counterparts from other universities, especially foreign universities, will greatly sharpen our competitiveness and broaden our disposition to issues and our duties. The University of Port Harcourt should continue to encourage the establishment of well packaged institutes and centres because they serve as focal points for collaborative scholarly activities, specialized multidisciplinary training as well as intellectual innovation and interactions with industry, government, the civil society and external research granting/funding organisations.

We live in a world that is now a dynamic complex global village where all things are interconnected. Constructive interactions among the component systems are essential for the achievement of sustainable solutions. Greater cooperation and cross-exchange of ideas is needed at all levels in the University of Port Harcourt in order to move the quality of teaching, research and administration to a higher level. As leaders at various levels of administration in the university, we need to have around us, people who are willing to tell us what we need to hear, but not only those who are willing to tell us what we want to hear (“*yes people*”). Good leaders are cool-headed and thrive on sober judgement. They work for the generality of the people they are leading and keep the unit and institution united rather than be one powerful and divisive leader. It is helpful for leaders to remember that no one knows it all and should be humble enough to consult other colleagues/peers for advice or their opinion on sensitive issues. In the same vein, as members of the university community, we should avoid dishonest and

dangerous criticism conceived to discredit and bring down our leaders rather than improve our administrative system.

2 Sustainability and Sustainable Development

The topic of my inaugural professorial lecture in 1998 was *“Environmental Degradation and Human Welfare: New Challenges for Geologists”* where the issue of environmental pollution in the Niger Delta was also discussed (Akpokodje, 1998). Today, I stand before you to discuss a much more worrying title, *“A Sustainable Niger Delta: Still Possible only if ...”*. As you can see, the title includes an incomplete phrase and I will endeavour to complete the phrase in this lecture based on my 44 years of research, consultancy services and interactions with stakeholders in the Niger Delta.

One of the most profound challenges facing human society in the 21st century is the sustainable management of the Earth’s finite natural resources in the face of unprecedented global population growth (90 million new people added each year), urbanisation, climate change and negative impacts of human activities. The Niger Delta is known globally as one of the most widely reported regions of the world where environmental sustainability and human health are under serious threat because of oil and gas exploitation.

Let us now define the terms sustainability and sustainable development. There are over 220 definitions of the terms “Sustainability” and “Sustainable Development” (Brady, 2006). Although many tend to use the two terms as synonyms, they are distinctly different. While sustainability is simply a state (destination) of possessing capacity to continue indefinitely, sustainable development is the process of development from our present unsustainable state towards that truly ideal sustainable global society. Sustainability generally includes a balance of environmental, social and economic issues (*three pillars of sustainable development*) (Figure 2) and

it implies long-term health of global ecosystem for both present and future generations.



Sources: <http://macaulay.cuny.edu/eportfolio/akurry/files;>
<http://imbgim.UNconf/SD.SDG.SED>

Figure 2: Pillars of Sustainability and Sustainable Development

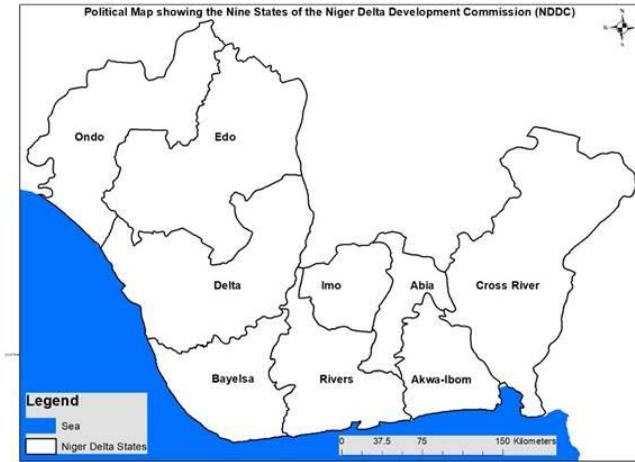
The concept of sustainable development was formally introduced in 1987 in a report of the United Nations World Commission on Environment and Development. (WCED, 1987) - Brundtland Report, titled “*Our Common Future.*”. The Commission defines Sustainable Development as “*a development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”. The concept advocates economic and social development without irreversible damage to the earth's natural environment. It is a process of enhancing human social-economic and ecological well-being currently threatened by our practices which pollute the environment, as well as unprecedented population growth and urbanisation. Sustainable development is currently regarded as “a

requirement for our generation to manage the global resource base such that the average quality of life that we ensure ourselves now can potentially be shared by all future generations”. In this context, sustainability corresponds to a state where the quality of life either increases or at least remains the same. If the quality drops, then, the system can be regarded as unsustainable. The term “sustainable” can be used in a general way as an adjective to qualify any human activity and community that possesses the capacity to continue indefinitely. For example, sustainable agriculture, sustainable cities, sustainable communities, sustainable institutions and organizations.

Globally, universities are facing serious dwindling subventions and are now under increasing pressure to explore additional sources of funding. They are also expected to manage their limited resources with maximum efficiency in order to maintain and/or increase the quality of services (i.e., sustainable university). A university can, therefore, be regarded as unsustainable if the quality of service to the society either drops, not maintained or not improved. How would you classify the University of Port Harcourt in the context of sustainability?

3. A Sustainable Niger Delta: What does it mean?

Although the term “Niger Delta” has been used from various perspectives (geology, geomorphology, ecology, socio-economic development and political governance), the NDDC definition is adopted in this lecture mainly for convenience. It comprises the nine states of Rivers, Bayelsa, Delta, Akwa Ibom, Abia, Edo, Imo, Ondo and Cross River (Figure 3).



Source: modified after Goggle satellite imagery maps; reserachgate.net

Figure 3 Nine states of the Niger Delta as defined by NDDC

Simply put, ‘*A Sustainable Niger Delta*’ is one in which the region’s resources are efficiently managed in a manner that fosters sustainable livelihoods and attainment of all the different needs and goals of all inhabitants without undermining the resource/ecological base which future generations require to meet their own needs. In addition, human activities in the region should not cause irreversible damage to the ecosystems and must have reduced impact on climate. For this to be attained, all public and private organizations in the region must be involved and the concept of sustainable development translated into practical policy to ensure that the three dimensions are simultaneously and equally addressed together. A sustainable Niger Delta calls for effective and efficient sustainable intervention programmes and livelihood activities.

4 Development Challenges

The Niger Delta is mostly a flat swampy basin, criss-crossed by an anastomosing network of rivers, creeks and streams. Its topography, geology and soil properties, hydrodynamics and heavy rainfalls make the region susceptible to severe annual flooding and erosion. The difficult physical terrain of the Niger Delta (Figure 4) constitutes a major problem to infrastructural development (Akpokodje 1979, 1987, 2017, 2019, Akpokodje et al 2017, Fubara 2012). Narrating his personal experience, Kashi (2008: 27) remarked that:

“The Niger Delta is one of the most difficult places I’ve ever worked. The people are hesitant and suspicious of outsiders, the terrain is tricky with remote areas reachable only by small boats and along every road and waterway danger lurks for the intruder”.



Source: Report of Site Characterisation of the Bodo Creek Area, 2018

Figure 4 Uniport Geology Team working in difficult intertidal flat terrain of Bodo Creek

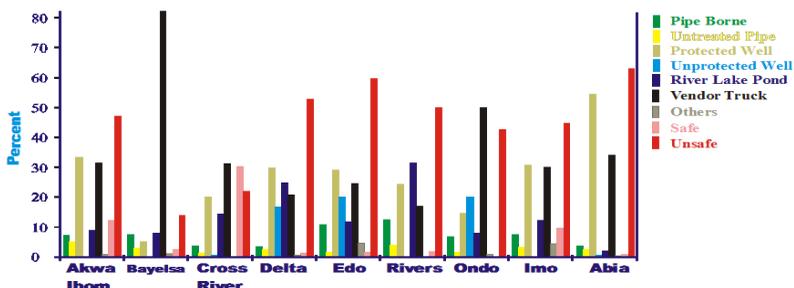
(Note heavy rain and a team member stuck in the soft mud)

The major developmental challenges of the Niger Delta include:

- Difficult, lowland, swampy floodplain terrain which is crisscrossed by numerous creeks; streams and rivulets;
- Weak infrastructural base, erratic power supply, poor telecommunications facilities, bad roads, etc;
- Low access to clean, safe drinking water and adequate sanitation;
- Poverty, Unemployment;
- Environmental Degradation and pollution;
- Weak Educational Base;
- Poor Health Facilities and HIV/AIDS Prevalence;
- Insecurity, oil theft, violence, etc and
- Gully erosion in some states (Imo, Abia, Akwa Ibom, Cross River and Edo and Delta).

According to UNDP (2006) over 70 percent of the people in the Niger Delta live below \$1 per day. Severe poverty has often been cited by many as the reason for the rising wave of crime and insecurity in the region. Related to the general poverty in the Niger Delta, is the issue of weak infrastructure including lack of good roads, poor power supply, low access to clean, safe drinking water and sanitation, poor educational facilities, etc. Figure 5 presents the source of potable water in the nine states. Less than 10% of the population have access to pipe born water (NBS, 2005). Data by the Federal Ministry of Water Resources in 2011 revealed that about 60% of the Nigerian population had access to potable water supply while the figure is only about 30% in the Niger Delta (Federal Ministry of Water Resources, 2011).

In the Niger Delta, the increasing pressure on the land and other natural resources due to the oil industry pollution, fast growing population (from 29 million in 2005 to projected estimate of over 45 million in 2020 (NDES, 1997), socio-economic activities and climate change impacts have resulted in increased vulnerability to natural disasters, especially flooding. It is predicted that at least 80% of the people of the Niger Delta may be displaced with a one-meter rise in sea level (Awosika, et al; 1992, 1992b, Adekunle et al; 2011).



Source: National Bureau of Statistics 2005.

Figure 5 Source of Potable water in the nine Niger Delta states

5 Magnitude of the Pollution Problem

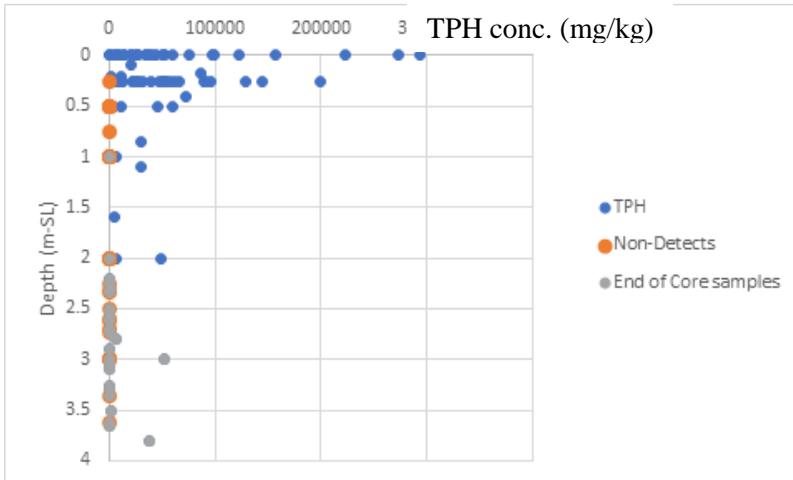
Of all the problems confronting the people of the Niger Delta region, environmental degradation and pollution rank among the most devastating. The Niger Delta has been subjected to a succession of oil spills over the last 60 years with devastating effects on both the environment and public health. Between 1976 and 2001 there were nearly 7,000 incidents involving oil spills and most of the oil was never recovered (Amnesty International, 2009). The number and frequency of oil spill incidents in the Niger Delta are regarded to be among the highest in the world.

The results of the UNEP environmental assessment of Ogoniland (2011) may be used as a reference point for the magnitude of soil and water pollution from petroleum

activities in the Niger Delta. Selected important highlights from the report includes:

- The soil and groundwater pollution levels exceeded national standards at two-thirds of all the locations investigated;
- At Ejama-Ebubu, Eleme LGA, a 40-year-old spill has spread both laterally and vertically and has reached groundwater.
- At Korokoro Well 3, Korokoro, Tai LGA; continuous spill history from 1992- 2003. Free phase crude oil was found at more than 6m below ground level.
- Groundwater pollution at Nsisioken Ogale, Eleme due to ruptured NNPC Pipeline. Pure refined product was found floating in nearby community wells and the drinking well water contained Benzene and BTEX compounds.
- Several sites classified by SPDC as successfully remediated, still contained TPH concentration above DPR-EGASPIN regulatory values. This implies that remediation and clean-up efforts by SPDC were ineffective.
- The surface water throughout the creeks in and surrounding Ogoniland contains floating layers of oil that vary from thick black oil to thin sheens.

Results of recent studies of polluted intertidal sediments of the Bodo Creek area (BMI Report 2018), revealed that hydrocarbon contaminations (TPH) above DPR-EGASPIN Regulatory Intervention limit (5,000 mg/kg) are generally most predominant at the top 1.0 m surficial sediments (Figure 6).



Source: BMI Report 2018

Figure 6 Variation of TPH concentration with depth

Oil spills have also caused severe damage to the mangrove ecosystem leading to exterminating on a large scale and loss of mangrove biodiversity (Figures 7 & 8). Although it is not possible to provide a quantitative estimate of the extent of mangrove loss, Duke (2016) estimated that 27% of the global mangrove loss occurred in the Niger Delta. In 2006, a team of experts stated that the Niger Delta is “one of the world’s most severely petroleum impacted ecosystems” (NCF-IUCN), 2006. This loss is very significant considering the fact that the Niger Delta mangrove is the 4th largest in the world. Hydrocarbon pollution of the surface water in the rivers and creeks has greatly reduced the fish stock and marine resources in the Niger Delta. The 2013 World’s Worst Pollution Problems report ranked the Niger Delta in the 9th position out the ten most polluted places in an annual report published by Green Cross Switzerland and Pure Earth (Table 1) (www.greencross.ch/PDF).



Source: Amah, 2010

Figure 7 Destroyed mangrove forest resulting from burning of 10 artisanal refining sites by the JTF in Bayelsa state.



[A]
floating layers of
thick black oil in
creek water



(B)
Dying mangrove
caused by oil
contamination

Source: Ibokun & Akpokodje, 2019

Figure 8 Kpoghor Intertidal mangrove flats

Table 1 World’s Top Ten Worst Pollution/Toxic Sites in 2013

Ranking	Region	Country
1	Agbogbloshie Dumpsite	Ghana
2	Chernobyl	Ukraine
3	Citarum River	Indonesia
4	Dzerzhinsk	Russia
5	Hazaribagh	Bangladesh
6	Kabwe	Zambia
7	Kalimantan	Indonesia
8	Matanza-Riachuelo	Argentina
9	Niger River Delta	Nigeria
10	Norilsk	Russia

Source: Green Cross Switzerland and Pure Earth 2016 World’s Worst Pollution Problems report

The oil pollution issue in the Niger Delta has attracted global attention as demonstrated by the highlights of the UN Environment Annual Report-2016 which prominently featured the launching of the Ogoniland clean-up by the Federal Government of Nigeria. The highlight states:

“Nigeria launches Ogoniland clean-up

In June, the Government of Nigeria set in motion a \$1 billion clean-up and restoration of the Ogoniland region in the Niger Delta, with UN Environment guidance. The region has been subject to a succession of oil spills over the last 50 years, with devastating effects on both the environment and public health. The restoration efforts, which are based on UN Environment recommendations, could prove to be the world’s biggest-ever environmental clean-up”.

(UN Environment Annual Report, 2016)

Oil spills have affected local population health in several ways. An article published in the Nigerian Medical Journal in 2013 estimated that the widespread pollution could lead to a 60% reduction in household food security and a 24% increase in the prevalence of childhood malnutrition. Furthermore, crude oil is likely hemotoxic and can cause infertility and cancer (Ordinioha, 2013).

Gully Erosion

The gully erosion problem is most devastating in Imo and Abia States. Gully erosion occurrence is attributed to erosion prone sandy soils, high rainfall, undulating topography and human activities, especially road and other civil engineering constructions. The majority of erosion gullies (>80%) are initiated by road construction and poor roadside storm water management (Akpokodje et al. 2010) (Fig. 9). Erosion and Watershed Management Approach (EWMAP) is the current approach to effective and sustainable control/management of gully erosion using the watershed (or river drainage basin/catchment) as the basic unit. It involves designing environmentally friendly hydraulic infrastructures for collection and conveyance of storm water from the headwaters and terminating it properly at the local erosion baseline.

5 Poor Performance of Major Developmental Interventions in the Niger Delta

The need to focus special attention on the development of the difficult terrain of the Niger Delta and its people has always been recognized by successive Nigerian government including the colonial administration. Despite the several intervention agencies/bodies (Figure 10) established for the development of the Niger Delta, development challenges still abound in the region (Omotola, (2007), Akinwale & Osabuohien, (2009), Akpokodje (2017, 2019), Akpokodje et al (2017). Currently,

the key Federal Government intervention agencies are, the Niger Delta Development Commission (NDDC), the Ministry of the Niger Delta Affairs (MNDA, the Niger Delta Basin Development Authority (NDBDA) and the Hydrocarbon Pollution Restoration Project (HYPREP).



Source: Akpokodje et al, 2010

Figure 9: Gully erosion initiated by poor roadside storm water management in Isuikwato, Abia state



Figure 10 Some of the intervention agencies established for the development of the Niger Delta

The Niger Delta Development Commission (NDDC) was established in 2000 with the hope that it would provide a lasting solution to the socio-economic challenges of the Niger Delta where previous interventions failed. The Commission was established with strong legal backing, holistic conceptualization and implementation strategy. The central mandate of the NDDC is:

“to facilitate the rapid, even and sustainable development of the Niger Delta into a region that is economically prosperous, socially stable, ecologically regenerative and politically peaceful” (NDDC Act. (1999).

This mandate is consistent with the goal of sustainable development and sustainability. The NDDC’s structure and mandate were such that it would be leading the development agenda in the region. In 2008, the Ministry of the Niger Delta Affairs (MNDA) was created to further fast-track the rate of development in the region.

The Niger Delta Development Commission designed a regional development master plan (2005-2020) to provide a framework for the future development of the region up to 2020 (NDDC, 2004, 2005). The Master Plan, which is principally designed to develop rural communities and reduce rural-urban migration, is based on three 5-year phases, namely: the foundation phase (2006-2010); the expansion phase (2011-2015); and the consolidation phase (2016-2020) (Africa Research Bulletin, 2007; Barret, 2008). According to the plan, the:

“fifteen-year time scale is necessary in order to properly plan the scale and nature and timing of interventions required to meet the region's overarching vision of a prosperous, socially stable and peaceful, an ecologically balanced and eminently pleasant region The overarching vision of the master plan is *to “improve the quality of life of the Niger Delta people, with particular attention to the most vulnerable and those with the greatest need”*.

We are now at the end of the 15-year plan period of the NDDC Master plan and this presents a unique opportunity to assess NDDC performance.

Well documented, reliable and independent quantitative data on the performance of the NDDCs are not available. This notwithstanding, there is a general notion within the Niger Delta communities that their expectations of rapid and sustainable socio-economic development remain largely unfulfilled despite claims to the contrary by the intervention bodies. Twenty years after the establishment of the NDDC, twelve years of the Ministry of Niger Delta Affairs and considering the huge amount of money released to the two intervention bodies compared with the visible results on ground, it is easy to understand the frustration of the communities and the necessity for a review of the intervention strategy/approach. The overall poor performance can be attributed to several factors, including:

- Lack of strategic focus, inadequate knowledge-based planning and lack of integrated management approach that combines both short-medium and long-term projects/programmes. Siting of significant number of projects is dictated by political expediency and party patronage

rather than those that constitute integral part of the long-term vision,

- Lack of active participation of the affected people in decision-making, project execution and management,
- Poor funding and/under funding due to lack of political will,
- Lack of transparency and prudent management of funds,
- Lack of adequate project monitoring and evaluation to determine the effectiveness of projects,
- Poor level of collaboration and synergy among the various government agencies, three tiers of government, the private sector, etc.

6. Update of the Current Niger Delta Development Master Plan

Several additional issues have emerged in the Niger Delta since the creation of the NDDC in 2000 and the MNDA in 2008. The key ones include; devastating environmental pollution and degradation documented by the UNEP report (2011), soot-induced air pollution, widespread illegal artisanal refining, cult-related violence, killing and kidnapping, etc. But that is not all! Previously existing challenges such as poverty, hydrocarbon contamination, pipeline vandalization, arms proliferation, flooding, etc, have also escalated. Therefore, the measures and approaches considered in the design of the existing Niger Delta intervention development master plan are no longer adequate to address the current and continuously evolving challenges. An update of the current development master plan and modification of the implementation and monitoring strategies are therefore required.

Traditionally, the Nigerian government and its agencies generally focus development projects/programmes along sectorial lines which is consistent with the silo mentality and fragmented approaches to development issues. In reality

however, the development challenges of the Niger Delta are inextricably linked and interdependent (Figure 10) and therefore, focusing separately on each problem is equivalent to addressing only part of the problem and will not produce the desired effective and sustainable result.

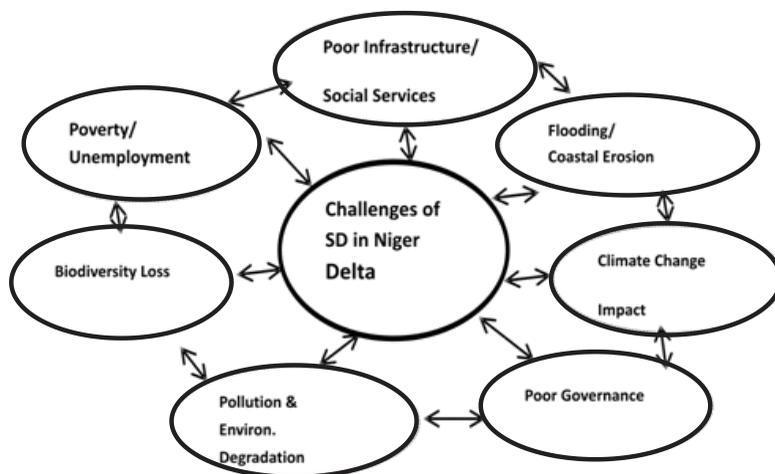


Figure 10 Inter-connected Development Challenges

For example, industries cannot be attracted to the region to create employment and jobs if the issues of insecurity, power supply, infrastructure, etc, are not addressed. Similarly, sustainable and effective remediation and restoration of hydrocarbon polluted sites cannot be achieved if the issues of oil theft, illegal artisanal refining, pipeline vandalization (which are important sources of pollution) are not solved. Furthermore, the local communities should have a basic understanding of the benefits of environmental sustainability and how it works in order to be useful partners in sustainable development efforts. Therefore, there is need to change the

current fragmented approach if better results are to be achieved.

The design of a 30-year (2020-2050) Niger Delta Integrated Strategic Master Plan-2050 (NDISMP-2050) is proposed to replace the current 15-year NDDC master plan framework which elapses this year. The NDISMP-2050 will create a clear vision of what we expect to see or achieve in the Niger Delta by 2050 with active participation of all stakeholders. By relating the vision for the future in 2050 to the current situation, it is possible to design appropriate and effective short and medium-term measures (5 & 10 years respectively) as integral components of the strategic ‘umbrella’ plan. This is different from the current approach of stand-alone ‘trial and error’ programmes and quick-fixed actions. In order to guarantee the implementation of the NDISMP-2050 plan no matter the individual or Board superintending the intervention ministry/agencies, the plan must be supported by necessary legal legislative backing.

The proposed plan should be a practical “road map” (with deliverable timelines) towards a well-coordinated and prioritized regional sustainable development of the Niger Delta where activities are guided by the long-term strategic plan rather than political expediency and narrow personal/group interests. There should be annual internal review of implementation performance of the NDISMP-2050 plan and periodic review by a wider spectrum of relevant independent stakeholders/experts at the 5th, 10th, 20th and 30th year respectively. The success of the plan will be, to a large extent, predicated on cooperation, partnership and coordinated implementation of well-defined actions by all the agencies and stakeholder groups involved. In order to achieve the desired future vision in the context of sustainable development, the plan should ensure a multidisciplinary and trans-disciplinary/sectoral approach which integrates social,

economic, political, cultural and ecological issues. Adequate funding is key to the successful implementation of the proposed Niger Delta sustainable development “road map”.

7 Concluding Remarks and Recommendation

The economic, social and environmental challenges of the Niger Delta are strongly interconnected and therefore require integrated, holistic, adaptive and collaborative approach to manage them effectively and sustainably. Development programmes must be owned by the communities (community buy-in) to enhance sustainability. Finding sustainable solutions to the Niger Delta challenges requires understanding and consideration of all root causes. This should include the fundamental issue of environmental pollution/degradation and how to sustain the livelihood of the over 60% of the local people who rely on the natural environment for existence. Majority of the local communities do not understand the concept of sustainable development and sustainability hence the need for basic environmental literacy campaign which will be helpful in encouraging local communities to move away from participating in environmentally damaging illegal activities.

The sustainable development and sustainability of the oil-rich Niger Delta is not achievable in a short space of time and we should therefore not feel guilty of not achieving it 59 years after Nigeria’s independence. However, we should know where we are supposed to go, and each genuine and well-thought-out decision and action in a holistic, adaptive, integrated, coordinated and collaborative manner can form a stepping-stone towards achieving the desired sustainable future. Doing otherwise or adopting ‘business as usual’ approach is tantamount to un-sustainable future for the Niger Delta region and inability to overcome the proverbial ‘resource curse’ status.

In conclusion, let me complete the phrase in the title of this lecture. A sustainable Niger Delta is still possible only if the intervention approach:

- 1) Involves a paradigm shift from the current sectoral, piece meal and un-coordinated approach to a well-coordinated, multi-sectoral and multi-stakeholder (integrated) approach that has a clear vision of what we expect to achieve in the Niger Delta within a specified time frame (practical “development road-map”);
- 2) Is based on a well-thought-through integrated, holistic, adaptive and collaborative strategic planning and implementation that involves strong cooperation between all levels of government, business, communities and other relevant stakeholders. The master plan should make provisions for strict, periodic independent assessment of the effectiveness and impacts of programmes/projects;
- 3) Optimizes short, medium and long-term goals as integrated components of the overall ‘umbrella’ strategic plan aimed at addressing socio-economic and environmental challenges of the Niger Delta in the context of sustainability and sustainable development
- 4) Includes effective ways of addressing the fundamental issue of environmental degradation and how to sustain the livelihood of the over 60% of the local people who rely on the natural environment for existence. This should include basic environmental literacy campaign in the local communities to enable them understand the concept and benefits of sustainable development and sustainability. This will help to discourage local communities from engaging in vandalization of petroleum industry facilities, illegal oil refining and other activities that contribute to environmental pollution.

- 5) Ensures the appointment of competent individuals to leadership/management positions of government intervention agencies (as much as possible) rather than emphasis on purely political patronage and selfish individual/group interest.

References

- Africa Research Bulletin (2007). *Political Social and Cultural Series*, Nov, 44 (11):173-215.
- Akinwale, A. Akeem and Evans Osabuohien (2009). Re-engineering the NDDC Masterplan: An Analytical Approach, *Journal of Sustainable Development in Africa*, Vol 11, No 2, pp142-159
- Akpokodje, E. G., (1979). The importance of Engineering-geological mapping in the development of the Niger Delta Basin; *Bull. Int. Assoc. Eng. Geol.* 19; 101-10.
- Akpokodje, E. G., (1987). The Engineering-geological characteristics and classification of the major superficial soils of the Niger delta, *Eng. Geol.* (Amsterdam), 23: 193-211.
- Akpokodje, E. G. (1998). Environmental Degradation and Human Welfare: New Challenges for Geologists. No 18 *Inaugural Lecture Series of the University of Port Harcourt*, 55p
- Akpokodje, E. G. (2017). Environmental Geology and Sustainability of Deltas, *Oxford Research Encyclopaedia of Environmental Sciences*. Online Publication, DOI: 10.1093/acrefore/9780199389414.013.152

Fortunate Adaptive management is defined according to the Delta Stewardship Council (2013a:1), as “a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation, leading to continuous improvements in management planning and implementation of a project to achieve specified objective”.

- Akpokodje, E. G. (2019). Integrated Engineering Geology and the Environment in Sustainable Infrastructural Development. *Proc 3rd International Conference NAEGE*, Vol 2, p 11-22
- Akpokodje, E. G., Tse, C. A. Ekeocha, N., & Giadom, F. D. (2017). Development of the Niger Development Objectives. *Proc. 1st Int. Conf on Deltas and Rivers*, p 6-12
- Akpokodje, E. G., Tse, C. A., Akaha & Ekeocha Nnamdi, 2010, Gully erosion geohazards in Southeastern Nigeria and their management implications. *Scientia Africana Vol 9, No 1*, p21-36
- Alagoa, E. J. (2012) Uniport in Review, Creativity and Innovation, *University of Port Harcourt Research Review*. P 5-8
- Alagoa, E. J. (Editor) (1999), *A history of the University of Port Harcourt: 1977-1998*
University of Port Harcourt Press
- Amnesty International. Nigeria: Petroleum Pollution and Poverty in the Niger Delta". United Kingdom: *Amnesty International Publications International Secretariat*, 2009.
- Awosika, L. F., French, G. T., Nicholls, R. J. and Ibe, C. E. (1992). The impact of Sea level Rise on the Coastline of Nigeria. In: *Proceedings of IPCC Symposium on the Rising Challenges of the Sea*. Margarita, Venezuela. 14-19 March, 1992.
- Awosika, L.F., G. T. Nicholls and C. E. Ibe, 1992. The impact of sea level rise on the coastline of Nigeria (O' Callahan J. (E.d.) In *Global climate change and the rising challenge of the sea. Proceedings of the IPCC workshop of Margarita Island Venezuela*, 9-13 March 1992. National Oceanographic and Atmospheric administration, Silver spring, M.D., U.S.A, pp: 690.

- Barrett, L. (2008). The Niger Delta: The True Story, *New African*, 11-21.
- Brady, J., (Editor). (2006). Environmental Management in Organisations, IEMA, *Earthscan Publications Ltd*, 438p
- Green Cross Switzerland and Pure Earth 2013 *World's Worst Pollution Problems report*, www.greencross.ch..PDF
- Delta Stewardship Council. 2013a. The Delta Plan Appendix 3. Delta Stewardship Council, Sacramento, California, USA [online] URL: <http://www.deltacouncil.ca.gov/delta-plan-0>. Accessed 6th February 2020.
- Environmental Insecurity in the Niger Delta, Nigeria, *Africa Today*, Pp.73-89.
- Federal Ministry of Water Resources, Nigeria (2011). *Roadmap for Nigeria Water Sector*.
- In-house publication of the Federal Ministry of Water Resources (p. 49). Abuja. Retrieved from www.waterresources.ng.org.
- Fubara, D. (2012). Socio-Economic Issues in the Sustainable Development of the Niger Delta.
- Keynote Address presented at the *1st INRES Niger Delta Environment and Sustainable Development Conference* held on 12 November 2012 at the University of Port Harcourt, Port Harcourt
- <http://www.nddconline.org/pressRelease/messages/43.shtml>
27/11/2005.
- Ibokun Ola & Akpokodje, Enuvie G. (2019). (Unpublished) *Preliminary fieldwork and laboratory analysis of polluted creek water and intertidal plains of Kpoghor, Ogoniland, Rivers state*
- Kashi, E. (2008): Shadows and Light in the Niger Delta in *Curse of the Black Gold: 50 years of Oil in the Niger Delta*. (Watts, M.ed.) New York: Power House Books. Niger Delta

- Brooklyn; Power House Books.*
- National Bureau of Statistics/Federal Office of Statistics. (2005). *Report of Nigeria Living Standard Survey 2003/2005*, Abuja.
- NDDC Act. (1999). *Niger Delta Development Commission Act, No. 2.* www.waado.org/NigerDelta/Documents/NigerDeltaDocuments/NNDCAct.html.
- NDDC. 2005. “*Niger Delta Regional Development Master Plan: Our Challenge – Their Future.*” Draft. January. Niger Delta Development Commission.
- Niger Delta Development Commission. 2004. *Niger Delta Regional Development Master Plan.* Available at www.nddc.gov.ng/NDRMP
- Niger Delta Environmental Survey 1997 Final Report, Phase1. *Vol 1: Environmental and Socio-Economic Characteristics Technical Report. 300p.* Available at: [https://www.researchgate.net/publication/315800412_](https://www.researchgate.net/publication/315800412) Accessed 14 September 2019
- NDES Vol.2, Part 1. Evaluation of Data Gaps. Available at: <https://www.researchgate.net/publication/>
- Nigerian Conservation Foundation, WWF UK and International Union of Conservation of Nature (NCF, 2006 IUCN), Commission on Environmental, Economic and Social Policy with FMEnv, Niger Delta National Resources Damage Assessment Rpt; <http://www.exesonigeria.org>
- Okereke, O. C. (2007) Insecurity and Power outages are sufficient drawbacks, but NDDC Masterplan offers Hope for projects in Nigeria, *World Today*, ix (iv)
- Omotola, J. S. (2007). From the OMPADEC to NDDC: An Assessment of State Responses to Environmental Insecurity in the Niger Delta, Nigeria, *Africa Today*, Pp.73-89. p 11-9

- Ordinioha, B. "The Human Health Implications of Crude Oil Spills in the Niger Delta, Nigeria: An Interpretation of Published Studies." *Nigerian Medical Journal* 54.1 (2013).
- The Bodo Mediation Initiative* (BMI) 2018, Report of Site Characterisation of the Bodo Creek Area, 187p
- UNDP. (2006). *Niger Delta Human Development Report UNDP Abuja.*
- United Nations Environment Programme (UNEP). (2011b). *Environmental Assessment of Ogoniland*. Retrieved from www.unep.org/nigeria.
- WCED (1987). *Our common future*. Oxford: Oxford University Press.

APPENDIX

UNIVERSITY OF PORT HARCOURT VALEDICTORY LECTURE SERIES

S/N	Name of Lecturer	Faculty/ College	Department	Title	Date
1.	Professor E. O. Anosike	Science	Biochemistry	“Desecration of the Ivory Tower”	4 th Nov.,2006
2.	Professor N.D. Briggs	College of Health Science	Obstetrics and Gynaecology	“Woman’s Health: A Nation’s Wealth“	23 rd Feb., 2009
3.	Professor C. M. Ojinnaka	Science	Pure & Industrial Chemistry	“In Defense of Traditional/ Herbal Medicine”	5 th May, 2011
4.	Professor E. N. Emenanjo	Humanities	Linguistics & Communication studies	“About Language: Can Confucius Be Right?”	4 th April, 2013
5.	Prof. Mark O.C. Anikpo	Social Sciences	Sociology	“Sociology in Contemporary Nigeria: The Challenge of Relevance”	26 th May, 2015
6.	Professor Benjamin A. Eheazu	Education	Adult & Non-Formal Education	Situational Challenges of Environmental Degradation in Nigeria: Adult Education as a Response	31 st Mar.,2016
7.	Professor Anthony E. Arinze	Science	Plant Science & Biotechnology	Ethnicity Problem in Nigeria: Impediment to National Development	26 th April,2016
8.	Professor Michael N. Oti	Science	Geology	Extractive Industry and Nigeria’s Development: Where Did We Go Wrong?	23 Aug., 2016

9.	Professor Francis N. Ukaigwe	Science	Geology	The Other Five Percent: An Exercise in the Gorilla Psychology	1 st Feb., 2017
10	Professor Chidi A. Ibe	Science	Geology	Agricultural Practice in a Changing Climate: Beyond Infatuation to Development	7 th Feb., 2017
11.	Professor Bene W. Abbey	Science	Biochemistry	Research and Development: Key to Sustainable Development	16 th Jan., 2018
12.	Professor Enoch O. Nwachukwu	Science	Computer	Information Technology: A Veritable Tool for National Development	18 th Sept., 2018
13.	Professor Victor Chukwuma Wakwe	Basic Medical Sciences	Chemical Pathology	“The Ethics of Life: Values of Optimal Existence”	23 rd April, 2019
14.	Professor Eme N. Ekekwe	Social Sciences	Political & Administrative Studies	“ Here is What I Learned as a Teacher”	27 th Aug., 2019
15.	Professor Enuvie G. Akpokodje	Sciences	Geology	“A Sustainable Niger Delta: Still Possible only If”	21 st April, 2020



PROF. ENUVIE GODWIN AKPOKODJE
Professor of Engineering and Environmental Geology

Birth & Education

Enuvie Godwin Akpokodje was born on 28th April, 1950, to the family of HRH Chief Akpokodje Akpobohwo (the late ‘Osuivie’ of Agbarho Kingdom, 1960-1964) of Ikweghwu, Agbarho, in Ughelli North Local Government Area and the late Mrs. Emetagbarho Akpokodje, of Okuloho in Ekpe Local Government Area, both in Delta State. Enuvie is the 3rd of six living children of his mother (*4 boys & 2 girls*) and grew up in a polygamous family setting. He attended several primary schools in Delta State from 1957-1963 because he was living with one of the senior brothers who was a primary school headmaster.

Enuvie attended St. Enda’s College, Agbarho from 1965-1968 and Government College Ughelli from 1969-1970 where he obtained the West African School Certificate (Grade One) and the Higher School Certificate (B, B, C in three subjects) respectively. Enuvie attended the University of Ibadan (1971-1974), University of Ife (now Obafemi Awolowo University) (1976-1977) and the University of New South Wales, Sydney, Australia, (1979-1982) where he

obtained the BSc Honours degree in Geology (2nd Class Upper), MSc degree in Engineering Geology & Hydrogeology and PhD degree in Engineering and Environmental Geology respectively.

Services to University of Port Harcourt

Enuvie joined the University of Port Harcourt as a Graduate Assistant and pioneer staff of the Geology Department in August 1976 and was promoted to the rank of Professor in 1994. He served the University of Port Harcourt in several administrative and leadership positions including; two times Head of Geology Department (1986-1988, 1996-1998), Managing Director of CORDEC (1989-2005), Member of the University Governing Council (2005-2006), Editor-in-Chief of '*Scientia Africa*' (International Journal of the Faculty of Science) from (2000-2011), Pioneer Chairman, Professional Ethics Committee (2002-2005), Pioneer Director, Institute of Natural Resources, Environment and Sustainable Development (2011-2015), Chair occupant, Dr. Stanley Lawson Foundation Professorial Chair in Environmental Geology, just to mention a few. He has chaired several Senate committees including the committee on the grading of examinations scripts by academic staff in 2001. One of the recommendations of the committee was a timetable for academic staff to grade examination scripts within five weeks of the conclusion of university examinations and the results presented to Senate for approved in a special Senate meeting. As the pioneer Chairman of the Professional Ethics Committee (2002-2005) he contributed to the significant reduction of several unethical academic practices including, late commencement of lectures after semester holidays and the practice of making the purchase of the lecturer's textbooks/handouts a condition for grading a student's continuous assessment assignment/test.

Research & Professional Activities

Prof. Enuvie Akpokodje is the current International Coordinator of the African Rivers and Deltas Network (ARDNet) and a Contributing Author for the Oxford Research Encyclopedia of Environmental Sciences. As a researcher and mentor to numerous students, he supervised and graduated scores of MSc students and 13 PhD students among whom two are now full professors and three are Associate professors. He and his research associates won several international research grants and fellowships including, the John D. and Catherine MacArthur Foundation, (2011-2014, which led to the establishment of INRES), Canadian International Development Agency/International Development Research Council, (1993-1999), the Natural Science and Engineering Research Council of Canada (1989-1990), etc.

Prof. Enuvie Akpokodje is a consultant to several multinational oil companies, Federal and State government and their various agencies. One of the last major consultancy projects he carried out with his research team was the “*Site Characterisation of the Bodo Creek Area*” under the Bodo Mediation Initiative (BMI) of the SPDC Ogoni Restoration Project (2018). He is the author of two books and a recently published 16-chapter book, titled, “*The Niger Delta: An Environmental Perspective*” with 21 contributors. He is a member of several professional bodies, a Fellow of Nigerian Association for Engineering Geology and the Environment (FNAEGE) and also a Fellow of the Nigerian Mining and Geosciences Society (FNMGS).

Services to the Church

From 1994-2013, Prof. Enuvie Akpokodje served Our Saviour's Chapel, (OSC), University of Port Harcourt in various capacities including, Vice Chairman, Chapel caretaker Committee; Chairman, Chapel Management Council; and Member, Board of Trustees. He is a patron to several Students' Christian Fellowships. He is a Knight of Saint Christopher (KSC) and married to Lady Joy Nnenna Akpokodje. The family is blessed with children and grandchildren.

Professor Stephen A. Okodudu

Ag. Vice Chancellor