



AFRICAN ASSOCIATION OF WOMEN IN
GEOSCIENCES NIGERIAN CHAPTER

1ST NATIONAL CONFERENCE OF AAWG NIGERIA
PROGRAMME, ABSTRACTS AND ACHIEVEMENTS



COLLABORATOR

RAW MATERIAL RESEARCH AND DEVELOPMENT COUNCIL ABUJA

BOOK OF ABSTRACT

Theme:

Harnessing Modern Technology and Innovation for Mineral Exploration in Nigeria

AFRICAN ASSOCIATION OF WOMEN IN
GEOSCIENCES NIGERIAN CHAPTER

Publisher:

Address

Telephone

Email

AAWGN 2015

CONTENTS

Acknowledgement	vi
Foreword	vii
Executive summary	viii
Achievements so far	ix - xii
PART ONE	
1.0 PROGRAMME OF EVENTS	13-15
PART TWO	
2.0 ABSTRACTS	
2.1 List of Abstract and Authors	16-23
APENDIX 1 Members of (L.O.C)	

Editorial Team

Professor O. Ekanade	Chairman
Mrs Lawreta Fumke	Member
Engr. E. Obassi	Member
Fatima Ahmed	Member
Nkiruka Achebe	Member
Dare Abigail O.	Member
Idowu Salami	Secretary

ACKNOWLEDGEMENTS

The immense contribution of the editorial team and Authors are hereby acknowledged by the L.O.C

We thank in a special way, the following for their contributions to the successful hosting of this Conference.

1. Raw Materials Research and Development Council Abuja for its contribution right from the inception of this association till date. We say a big thank you to both the immediate past and the present Director General/CEO of (RMRDC)
2. The Management of mining Cadastral for their financial contribution
3. Stake holders for the zeal, enthusiasm and immense support rendered in planning the event.
4. The International Association for Promoting Geoethics (IAPG) for promoting our programme internationally.
5. Professor Ezoura for her word of encouragement and selfless effort of serving humanity.

Finally, the Editorial team is thankful to all those who contributed in a way or the other in the compilation of this work and whose names are too numerous to be mention

FOREWARD

It is a common knowledge in rural Nigeria that women are usually involved in local mining activities as well as the management of natural resources. These resources include land, water, forests and wildlife. Most rural women are comparatively poor and uneducated. Most of them do not hold a monthly pay job and therefore are commonly referred to as housewives. These women are great sustainers of their family and rural micro-economic activities. However, their impact and activities are more significant to their indigenous knowledge of managing natural resources. This is crucial because their traditional gender roles bring them in direct contact with these natural resources, and their survival and that of their families depend directly on exploiting, processing and harnessing supplies from these natural resources.

Many poor rural miners, especially women sustain the society because they use the natural resources to feed their families. This sustainability is crucial to them but it also exposes them to hazards and makes them vulnerable to human and natural disasters. Thus when the world environmental protection and conservation policies advocate for protection of the environment while ignoring rural women, they become the greatest victims of such policies.

Women constitute a large percentage, if not, half of the rural population. Women are socially more burdened in rural Nigeria. Their activities range from economic activities to running of homes and rural development projects. They also constitute a more appropriate target group for cultural and social changes. Their activities in development and family care put them in the central position regarding impacts and use of land and other natural resources, however the traditional African setting relegates them to the background on land matters.

Mining impact on environment is a direct consequence of economic and social factors. Chief of these factors is population size, destruction of forests, mining activities, etc, which arise mostly from increase in population. To control population, there is need to improve rural development, adopt appropriate technology and conserve natural resources. Rural Nigeria is one of the areas with the highest population growth rates, while the natural resources located in these rural communities are constantly decreasing.

This makes it very imperative for rural women to be educated on the use of modern technology and best practices for farming and mining activities for their safety and the environment. This information is important for decisions on gender issues and should target women as relevant group for education and mobilization concerning rural environmental issues. Such knowledge is also

important for national planning and policy formulations concerning the use of land and natural resources in the country.

We therefore call on all partners and relevant institutions for further collaboration for collective exploitation and harnessing modern technology and innovation for mineral exploration in Nigeria.

Aishatu Adamu Ahmed

National President AAWG Nigeria

EXECUTIVE SUMMARY

The African Association of Women in Geosciences is a nonprofit organization created in 1995 at Nairobi during a Conference of Geological Society of Africa. The creation of this association was due to low participation of women in most of the Earth Science workshops and Conferences in Africa. This was done in order to encourage the participation of women in Geosciences. AAWG also encourage the involvement of women in gender related issues on earth sciences, exchange educational, technical, and professional information, and also to enhance the professional growth and advancement of women in geosciences. This Association officially began its activities around May 2013 in Nigeria.

AAWG supports the development of Earth Scientists in Africa by providing opportunities for networking, application of scientific findings and addressing the challenges faced by the continent for sustainable development.

There are great opportunities for earth scientists, extending from traditional mineral extraction to environmental management such as climate change adaptation, prevention of natural hazards, water scarcity, and ensuring access to quality earth science training, assist African governments to realize these opportunities. AAWG activities are developed through a participatory approach. Several international conferences have been organized to address various issues that affect the African continent, to which Earth Scientists can make a contributions.

The 1st AAWGN National Conference is organized to address the possibility of harnessing modern technology and innovation for the exploration and exploitation of the nation's abundant mineral resources, especially as it affects women. The Conference is also intended to highlight best practices that will encourage better environmental and climatic conditions/harmony.

The Conference is open to all geoscientist in the academia, government and private sector

ACHIEVEMENTS SO FAR

Our first Achievement was the visit by The AusAid

The aim of their visit to Nigeria was to know what African Association of Women in Geosciences Nigeria (AAWGN) and other women organizations are doing to assist women in Nigeria and possible ways of collaboration. They are also interested in Government organizations that are ready to partner with them by nominating staff that will need to be trained especially in the area of **agriculture, public policy and geosciences**. According to AusAID, these courses are based on the area of interest by the Nigeria Government. Their **sponsorship is full package which includes accommodation, feeding, Course fees, Transportation, and stipends**. So it is at no cost to the **Council**. Their attention is mostly on women because most of the people they have trained so far are men and they wonder where the women are.

Below are some of the pictures



AAWG Members in attendance



AAWGN AND OTHER NGO'S in attendance

The Second Achievement was the Organization's first workshop on earth science education, geo-heritage development and peace building in Nigeria May 2013

Below are some of the pictures



Group photograph of the Emir, the Keynote Speaker, the DG-RMRDC, Other Resource persons and the National Executives / Dr. Kitso presenting the potentials of Awe thermal Springs



Members of aawgn on curtsy call to the emir of Awe Nasarawa state / Members exploring Awe thermal springs

Third Achievement: The visit of some Polish Researchers to Nigeria for the use of the Awe Thermal Springs for Geomedicine (Balneotherapy) On The 14th To 15th January, 2014.

DG/CEO, RMRDC, Dr H. D. Ibrahim at the RMRDC Headquarters in Abuja welcomed the team from Poland as their aim is to sought for partnership with RMRDC in developing the geo-resources of the country, which RMRDC showed willingness, stating that it was within

the purview of the Council's mandates and that the Council is ever ready to support the course within the ambits of its resources.

Find Below some pictures



AAWGN team with Poland team leaving after exploring the Awe thermal springs



The Director General of RMRDC receiving the Poland team leader, Prof. Krzysztof Schoenich

Fourth Achievement: Full sponsorship oversea to attend a conference

Three members of AAWGN were fully sponsored to present paper at the second international conference on geopoarks in Africa & Middle East which took place in Dakar, Senegal

Find some pictures below



AAWGN members who benefited from the sponsorship



Prof. Ezoura in the middle, the overall African president of AAWG

PART ONE

PROGRAMME OF EVENTS

DAY ONE

OPENING CEREMONY

Chairperson: Prof. Mayen Adiuku Brown

Rapoteurs: Hellen , H.U

Aduagba Olarongbe

- | | |
|----------|-------------------------------------------------------------------------------------------------------------------------------------|
| 8:00am | Registration of Participants |
| 9:00am | Arrival of AAWGN members |
| 9:15am | Arrival of Dignitries |
| 9:30am | Arrival of Director General/ CEO Raw Material Research and Development council, Abuja. Dr. H.D Ibrahim , Chief Host |
| 9:35 am | Arrival of the Chairperson, Professor Mayen Adiuku Brown Professor of Geology |
| 9:40am | Arrival of the Guest of Honor, Alhaji Baba Umar Farouk, Permanent secretary for Mines and Steel. |
| 9:55am | National Anthem |
| 10:00am | Welcome Address by the National President of AAWG Nigeria. (Aishatu Adamu Ahmed) |
| 10:05am | Good will messages by: Dr. H.D Ibrahim Chief Host, The Director General / CEO Raw Material Research and Development Council. |
| 10:10am | Keynote address by Professor Mayen Adiuku Brown Professor of Geology |
| 10:15am | Address by the Guest of Honour, Alhaji Baba Umar Farouk
Permanent secretary for Mines and Steel |
| 10: 25am | Address by Dr. Razak Garba |

- 10:35am Vote of thanks by the Vice President of AAWG Nigeria (Mrs. Lawrenta Funke popoola)
- 10:40am National Anthem / Departure of Special Guest of honour

TECHNICAL SESSION

Paper presentation

Chairman Dr. Abdulrazak Garba (NGSA)

Rapoteurs: Hellen , H.U

Aduagba Olarongbe

- 10:45am video presentation by Silvia Peppoloni titled geoethics
- 11:15am Paper presentation by Molly Bakka from Uganda titled the Geosite and Geopark development in Uganda.
- 11: 30am Paper presentation by Lawrenta Funke Popoola titled Sustainability of water resource management in Nigeria.
- 11:45am Paper presentation by Abdulkadir A. titled Climate Change, Fresh Water Resources and the Challenges to Sustainable Development.
- 12:00 pm Paper presentation by Heleen Onaji O. titled Creating Awareness of Potential Geoheritage Sites for Geotourism in Nigeria
- 12:15pm Paper presentation by Aishatu Adamu Ahmed titled Global Climate Change and its effect on Women
- 12:30-1:00 pm Panel discussion
- 1: 00pm - **Lunch break**

Afternoon Session

- 2:00pm - Paper presentation by Jacinta Nkiru titled Polynology and Pale environmental Analysis of a section of Amansido – 1 Well

Anambra Basin South Eastn Nigeria

- 2:15pm - Paper presentation by Odukoya Abiodun Mary titled Geochemical and Quality Assessment of Ground Water in Basement Complex.
- 2:30PM - Paper presentation by Oloto I.N (Phd) titled Polynofacies and Depositional Environments of part of Niger Delta
- 2:45pm - Paper presentation by Ozonya Precious Oshiozuwe titled Climate Change Threatens Health
- 3:00pm - AAWGN Meeting / Nomination of State Coordinators
- 5:00pm - Recommendations/ Closing Remarks by the secretary General.

DAY TWO

Tuesday 16th June, 2015

Field Trip to Ushaffa Pottery (Aim of the field trip is to promote and support local content / sustainable tourism and other opportunities that can emanate from the trip for the benefit of Nigerian economy and Africa at large).

Departure time from RMRDCAbuja	8:00am
Arrival at Ushaffa Pottery	9:00am
Lunch Break	12:30pm
Arrival at Gwarimpa	3:30pm
Dinner at Degok Hotel limited	
House 13 and 14 Aclose 3 rd Avenue	
Gwarimpa Abuja.	4: 00pm
Vote of thanks by the Secreatary Gen of AAWGN	7:00pm
Departure from the venue	7:15pm

PART 2

ABSTRACT AND AUTHORS

CLIMATE CHANGE THREATENS HEALTH

BY OZEMOYA PRECIOUS OSHIOZUWE

(08130541904, pozemoya@gmail.com)

All population will be affected by climate change but some are more vulnerable than others. Certain groups of people are particularly sensitive to climate change related health issues such as the elderly, the infirm, children, coastal populations, low income populations and as well as areas with weak health infrastructure will be least to cope without assistance to prepare and respond. Climate change is one of the most serious public health threats facing the nation but few people are aware of how it affects them. Carbon dioxide (CO₂), a green house gas is the main reason our planet is getting hotter, thus increasing the chances of weather disasters, and thereby hurting our health. Many global issues are climate related including basic needs such as food, water, shelter and health. Changes in climate may threaten these needs with increased temperature, changes in precipitation, drought and flooding in many regions. Climate change affects the social and environmental determinants of health; clean air, safe drinking water, and sufficient food and secure shelter resulting to physiological and psychological problems in humans. These in turn heightens the risk of a range of health effects from mental disorders to communicable diseases. Climate change can be curbed by reducing the dependence of fossil fuels, and increasing our use of renewable energy. We need national leaders that will stop ignoring what the earth and scientists are telling us about climate change.

1.The Nyakasura Spencolm Geosite Development. (Poster)

2.The Geosite and Geoparks development in Uganda. (Oral) Poster & Oral presentation

Molly Kibalama Bakka Male¹, Agnes Kuterema Alaba¹

Department of Geological Survey & Mines, Entebbe, Uganda.

e-mail: mollybakka@gmail.com, dgsm@minerals.go.ug

Uganda is one of the five East African Community countries. The country occupies an area of 241,000 Km² and lies in the heart of the African plateau within the African plate, a continental crust containing Archean cratons and is crossed by the equator. She has a Tropical-Equatorial climate in addition to a variety of landscapes and other physical features, unique flora and fauna with a breath-taking beauty which gives her another name 'The Pearl of Africa'. The income per capita is 1300\$ per annum.

The studies of processes and events that make the geology of Uganda and the compiled number of geosites so far investigate the feasibility of establishing 4-5 Geoparks by regions through the whole country. The sites have a foundation on geological, cultural and natural heritage which allow for sustainability through tourism and community involvement. A Geopark approach is a potential developmental remedy to many of our problems of poverty, hunger, economy and development.

The basic underlying objective is National development of the social and economic aspects. Within the framework of the Uganda Geological Mapping Project under the umbrella of the Finish Geological Survey and the Department of Geological Survey and Mines (Uganda), about 60 sites were visited, and essential information recorded in a more descriptive manner. These comprise the proposed Western Region Geopark. The Park supplies local communities with various wild resources. It is part of the Rwenzori mountain chain, a world heritage area and which includes Africa's third highest peak. The poster has some attractive views of the Rwenzoris like the Nyakasura Spencolm Geosite for preservation and development.

The stakeholders so far are geologists at the Geological Survey and Mines and those of Makerere University, Uganda. Geoheritage is a subject gaining momentum having interest groups; schools and individuals of different professions approaching it differently but purposed for tourism such as at www.geographicexplorer.ug.

There is improved awareness about geosites at the Department. The challenges are prioritizing the subject by the Geological Survey Department, development funds and their sources. So are issues of priority, funds, experts for guidance, land tenure systems, no real legislation in place and no formal connections between systems of roads, planning within the national infrastructure. There is however great potential and investigating the feasibility of developing a geosite at a time approach; such as the proposed Nyakasura spencolm is a logical step.

. We advocate for UNESCO support through expert visits and funding. Networking ,workshops and training in Geoparks will enhance the collaboration. The Geoaparks are mentioned priority IGCP Project.

Geoparks initiative will supplement to match the Uganda Vision 2040 whose frame work provides plans and strategies to operationalise the Ugandan vision which is" *A transformed Ugandan society from a peasant to a modern and prosperous country within 30 years*".

GLOBAL CLIMATE CHANGE AND IT EFFECTS ON WOMEN IN NIGERIA

Aishatu A. Ahmed* and Arinze Harrison

Raw Material research and Development Council

No 17 Aguiyi-Ironsi Street Maitama Abuja, Nigeria

Corresponding author's email address: aisharmrdc@yahoo.com

Abstract

Climate change refers to a change in climate, attributable directly or indirectly to human activities, that alters the atmospheric composition of the earth which leads to global warming. It is certain that climate change does not discriminate between men and women because it is only natural that we are all on earth. If men were the under-represented of half of the world's population, men would for sure stand up for their rights just as much as the women are doing now. Secondly, climate change does not discriminate between men and women, for example, with the increase in desertification flooding and the retreat of the glaciers, the threat climate change poses to human existence and not just humans but also the other living and non living things are enormous. Africa is said to be one of the world's most vulnerable continents due to the effects of climate change, even though its contribution to the problem is minimal. The worse situation is the social and economic settings of most Africans, especially women and children. Experts of different sectors of economies have analyzed and are still analyzing the vulnerability of women and children due to climate change. In many states of Nigeria, climate change threatens to unravel women's lives by putting the efforts aimed at improving women's lives and livelihoods in vain. Unfortunately, women in rural areas in Nigeria lack knowledge on the imminent dangers posed by climate change.

This paper assesses how the Nigerian government and its citizens are prepared in adapting and mitigating this global environmental phenomenon. This review chapter contends that climate change may already be impacting Nigeria as manifested by increased flooding, delayed rains, enhanced desertification, increasing bush fires and food insecurity.

KEY WORDS: Climate, Women, Mitigation

CREATING AWARENESS OF POTENTIAL GEOHERITAGE SITES FOR GEOTOURISM IN NIGERIA.

Introduction:

Geo-heritage is a term used to describe features of Geo-diversity which hold special meaning to people, communities or cultural groups. Those components of geo-diversity that is important to humans for purposes other than resources exploitation, thing that could be retain for present and future generations. These include the natural range of geological (bedrock), geomorphologic (Landform) and soil features, others includes evidence for the history of the earth (evidences of past life, ecosystem and environment).

Geo-tourism promotes tourism to geo-sites and the conservation of geo-diversity and an understanding of Earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geo-site visitor centers". The relatively new concept of geo-tourism is attracting increasing interest around the world. It sustains, but it can also be enhanced by means of restorative and constructive forms of tourism that fit the nature of the destination.

Nigeria is blessed with beautiful landscapes and geo-heritage sites which cut across the States of the nation. These varied from naturally embedded geologic features such as hills and mountains which stand tall to a very low lying beautiful landscape that could be used for tourist attraction.

Potential Geo- heritage sites in Nigeria

Geo-heritage sites have been in existence for long, but the awareness of creating tourism out of it is yet to be fully explored. Nigeria like the rest of the world could harness these potentials and develop it in order to maximize its full benefits. Examples of some of these Geo-heritage sites include **Obudu cattle ranch** in cross River state, the **Olusunta Hills** and the **natural caves** in IKere-Ekit in Ekiti State, the rolling **Hills of Okigwe** in Imo State where hills locks of varying heights and ruggedness add to the fascinating environment. **The Kufena Hills** in Zaria, Kaduna State, **fascinating rocky environment** in Nassarawa State.

Zuma rocks in Zuba, Abuja, **Olumo rock** an interesting source of attraction in Ogun State, the landscape including chains of captivating rocks formations beautifully shaped and bare rocks chains of Hills. **Taraba Mambilla tourist centre** which is part of the mountain chains of Adamawa, and the **Idanre Hills** which is one of the most awesome and beautiful natural landscapes and top tourist attraction in Ondo State. The Hills surrounds the town, envelopes it and dominates life in the town.

Importance of Geo-tourism to the Nigeria Communities

One of geo-tourism's benefits to host communities is the pride that comes with deeper knowledge of local natural and cultural heritage and of course the financial. It can come from providing geographically appropriate tourist goods and services. It can come from employment that includes avenues for career advancement.

Conclusion

In conclusion, Geo-tourism has high social, environmental, and economic potentials in Nigeria if it can be advertised and showcased to communities within and without the shores of the country.

By: Onaji Helen O.

Hydrogeologist

Federal Ministry of Water Resources,

Abuja, Nigeria.

heleno_79@yahoo.ie

**PALYNOLOGY AND PALEOENVIRONMENTAL ANALYSIS OF A SECTION OF
AMANSIODO-1 WELL ANAMBRA BASIN SOUTHEASTERN NIGERIA**

Chukwuma-Orji, Jacinta Nkiru; Okosun, Edward and Abolarin, James Femi

Department of Geology, Federal University of Technology, Minna, Nigeria

Corresponding author: Chukwuma-Orji, Jacinta Nkiru

E-mail: jacinta@futminna.edu.ng

Phone : 08072695626

ABSTRACT

Palynological analysis was carried out on twenty (20) ditch cuttings samples of a section (1285-1497 m) of Amansiodo-1 well, Anambra Basin, Southeast Nigeria with the view of determining the age, biozone, and depositional environment of the sediment within the interval. The acid method of samples preparation for recovery of palynomorphs was duly followed. Fifty two (52) palynomorphs specimen were recovered. The section was dated Upper Maastrichtian due to the occurrence of the diagnostic marker species such as: *Cingulatisporites ornatus*, *Distavernusporites simplex*, *Protencidites sigali*, *Dinogymnium* sp., *Dinogymnium* cf *aucleanse*, *Echitriporites trianguliformis* and *Retidiporites magdalenensis*. An assemblage zone of *Longapertites* sp Zone was established. Based on the Palynomorph marine index and environmental indicator flora, the section was inferred to be deposited in marine to brackish and fresh water environments.

Geochemical and Quality Assessment of Groundwater in Basement Complex

Abstract

Odukoya Abiodun Mary

Department of Geosciences, University of Lagos. amodukoya@unilag.edu.ng. 080562722219

Fifty samples from hand dug wells and boreholes were collected at Ijebu Igbo and its environs within the Basement Complex of some part of Southwestern Nigeria. The purpose was to establish preliminary baselines for constituents in the groundwater and also to determine the quality for both drinking and irrigation purposes.

Physical parameters were determined insitu using the appropriate digital meters while the analysis of trace elements and cations in water were carried out using inductively coupled plasma optical emission spectrometry (ICP-OES) at Actlabs, Ontario Canada.

The order of relative abundance for major elements is $\text{Na} > \text{Ca} > \text{K} > \text{Si} > \text{Mg} > \text{P} > \text{Fe} > \text{Al} > \text{S}$.

Al, Fe, Na, K and P were above the EPA 2012 recommended standard for drinking water in 79%, 23%, 3%, 37% and 6% of the water samples respectively and geochemical process is being influenced by both man activities and weathering of silicate minerals.

Sodium Absorption Ratio (SAR) ranged between 0.12-10.43 and falls within excellent and good for irrigation purpose. Only 78% and 22% of water samples were suitable for irrigation based on Soluble Sodium Percentage (SSP) and Magnesium Adsorption Ratio (MAR) respectively while all the water samples were good for irrigation purpose based on Kellys Ratio(KR).

Concentration of Te and Ti were below detection limit for all the samples. As, B, Cd, Cr, Cu, Mo, Ni, U, and Zn though present in water were below recommended standards for all the samples. Ni and Sb exceeded recommended standard only in sample W24 and Ba exceeded recommended standard in W20 with value as high as 909.76ppb. Mn and Pb were higher than recommended standard in 12% of the samples respectively. The Pollution Index varied from 0.09 to 1.66 with 8% of the water samples showed pollution index above 1

Generally, groundwater in the study area is suitable for both domestic and irrigation uses except samples W4, W20, W24, W47 and W49. However, since heavy metals are not biodegradable, they tend to bioaccumulate and biomagnify in the body and eventually become harmful to human health.

PALYNOFACIES AND DEPOSITIONAL ENVIRONMENTS OF PARTS OF NIGER DELTA

OLOTO, I.N (Ph.D)

ABSTRACT

During the past 15 years there has been an upsurge of interest in the way that the composition of sedimentary organic matter can be used to aid the interpretation of depositional environments. Depending on the degree of precision demanded both environmental and source potential assessment can be made by palynologic, organic petrographers or geochemists. Each approaches the examination of sedimentary organic matter in a different way using specialist techniques and generates different data.

Particulate organic matters and palynomorphs have been studied and classified in some parts of the Niger Delta Basin. These have provided information on the depositional environment of sediments and depositional palaeoenvironment of sedimentary rocks.

Palynofacies analysis generated different kerogen types, palynomorphs and their palaeoenvironments ranged from brackish to fresh water and near shore marine environments.

LIST OF L.O.C MEMBERS

1. Aishatu A. Ahmed	Coordinator
2. Popoola L. Funke	Fund Raising
3. Onaji Helen O	Field trip
4, Arinze Ikwumeleze	Fund Raising
5. Agoumo Mercy	Opening and closing
6. Engr. Ettu Obassi	Head of secretariat
7. Idowu Salami	Secretariat
8. Dare Abigail	Secretariat