



*Book of Proceedings*  
*1<sup>st</sup> North-East Conference of the Association of Nigerian Geographers*  
*(ANG) held at Dept. of Geography, GSU, 2023.*



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First Published: 2023

**ISBN: 978-978-76596-6-3**

Printed and Published by

**GMC Innovation**

**@Sabon Line Gadan Malale, Gombe State - Nigeria**

**08145659910, 08133463236**



# **CLIMATE CHANGE, LAND DEGRADATION AND SECURITY: A GEOGRAPHICAL PERSPECTIVE**

**PROCEEDINGS OF THE 1<sup>ST</sup> NORTH-EAST CONFERENCE OF THE  
ASSOCIATION OF NIGERIAN GEOGRAPHERS (ANG)**

**DEPARTMENT OF GEOGRAPHY  
GOMBE STATE UNIVERSITY, GOMBE  
25<sup>TH</sup> – 28<sup>TH</sup> SEPTEMBER, 2023.**

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**ISBN: 978-978-76596-6-3**

*A Publication of the Association of Nigerian Geographers (ANG)  
and  
The Department of Geography, Gombe State University, Gombe*



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## **Opening Remarks by the ANG Northeast Zonal Representative**

### *Protocols*

*The Executive Governor of Gombe State, Muhammadu Inuwa Yahaya (Dan Majen Gombe) ably represented by our own Ambassador Sani Adamu Jauro, the Project Coordinator Agro-climatic Resilience in Semi-agro Climatic Resilience Landscapes ACREsAL) Gombe, the Vice Chancellor Gombe State University, Prof. Aliyu Usman El-Nafaty, OFR; the Vice Chancellor, Modibbo Adama University, Yola, (MAU) Prof. Abdullahi Liman Tukur ably represented by Prof. Bashir Abubakar; the Vice Chancellor Yobe State University (YSU), Prof. M. M. Daura; the HOD Department of Geography, Gombe State University, Dr. Yusuf Ahmad; the LOC Chairman, Prof. Lazarus Mbaya; LO Committee members; Distinguished guests, esteemed colleagues, and passionate advocates for our planet,*

*good*

*morning.*

It is with great pleasure and gratitude that I stand before you today. We are gathered here to witness the maiden ANG Northeast Zonal Conference with the theme “**Climate Change, Land Degradation and Security: A Geographical Perspective**”. We are not here merely as participants but as custodians of a planet in peril. The challenges we are facing in our planet today are daunting, but we all have the passion and potentials to make a difference and change the present narrative.

As we convene, we must recognize that the climate crisis is not an abstract concept on the pages of papers; it is a reality felt in every corner of the globe. It transcends borders, ideologies, and demographics, affecting the most vulnerable among us disproportionately. It is contributing directly and indirectly to unprecedented increase in the rate of environmental degradation and insecurity.

It is our collective responsibility to forge a path forward, guided by science, compassion, and innovation. We must acknowledge that this battle requires unprecedented cooperation, not only between nations, but across industries, communities, and generations.

Our deliberations here in this conference hold the key to shape the destiny of our immediate environment and the planet at large. Let us approach this task with determination, wisdom, and a shared commitment to leave a legacy of sustainability and prosperity for the present and future occupants of our planet Earth.

Together, we can rise above the challenges that lie ahead. Let this conference be a beacon of hope, a crucible of ideas, and a catalyst for action. For the sake of our children, and their children, let us seize this moment to secure a future where our mega ecosystem “the planet earth” will function and thrive well.

Thank you.

**Prof. Bulus L. Gadiga**  
Zonal Rep. ANG.



## ACKNOWLEDGEMENTS

### Protocols

It indeed gives me a great pleasure to welcome and acknowledge you all to this historic and maiden North-East Zonal Conference of the Association of Nigerian Geographers (ANG) hosted by the Department of Geography, Gombe State University. I really appreciate you for honoring our invitation to grace this august occasion.

Let me use this medium to sincerely acknowledge and thank the University Management, under the leadership of the Vice Chancellor, Professor Aliyu Usman El-Nafaty, OFR who is also the chief host for this occasion. The Vice Chancellor has granted us approval for hosting the conference in addition to the provision of befitting accommodation for our special invited guests.

Similarly, I want to appreciate the tireless efforts of the Zonal Representative of the ANG Professor B.L Gadiga who has championed the organisation of the conference. The efforts of the technical advisory committee, contributors, reviewers and scholars from various institutions, participants, media, to mention but a few, cannot be over emphasized. Thank you for the good job in making this conference a reality.

I would like to further thank our keynote address speaker and lead paper presenter Professor A.L Tukur Vice Chancellor Modibbo Adama University (MAU), Yola and Professor M.M Daura Vice Chancellor Yobe State University (YSU) for their resourceful deliberations, support, and making the conference a successful and memorable one.

On this note, I am obliged to specifically acknowledge the receipt of donation of 50 copies of a book from Professor A.L Tukur Vice Chancellor Modibbo Adama University (MAU), Yola, titled “Contemporary Perspectives on Environmental Issues” A Festschrift for Professor A.L Tukur. We sincerely thank him very much for the double contributions to our libraries in the University.

Moreover, I want to register my appreciation to his excellence, the Executive Governor of Gombe State, Muhammadu Inuwa Yahya (DanMajen Gombe) who was ably represented by our own Ambassador Sani Adamu Jauro, the Project Coordinator Agro-climatic Resilience in Semi-agro Climatic Resilience Landscapes ACRReSAL) Gombe. Your Excellency sir, you are very much aware considering your concern on environment that geographers are the custodian of the environment. We are concerned with the environmental protection, preservation and conservation in order to attain sustainable livelihood and economic development of our dear state and the country at large. In that direction, we produce graduate who are not only conscious of the environment and its resources, but also participate actively in environmental education for the betterment of our societies. All these, I believe are in line with the policies and programmes of this present administration. The Gombe Goes Green (3G), NEWMAP & ACRReSAL are typical examples of this administration’s efforts and concerns towards environment.

In view of that, we are optimistic that the representation of Ambassador Sani Jauro is timely relevant, and relevantly timely in the conference. The ZANG and the Department of Geography, GSU are looking forward to seeing your support and partnership for the overall success of the policies of this government towards the environment. I wish you safe journey back to your various destinations.

Thank you,

**Yusuf Umar Ahmad, PhD.**

Head, Department of Geography, GSU  
& Chairman, Technical Advisory Committee



## **PREFACE**

The 1<sup>st</sup> Northeast Zonal Conference of the Association of Nigerian Geographers held between the 25th and 28th September 2023 and hosted by the Department of Geography, Faculty of Science, Gombe State University, Nigeria with the theme: **Climate Change, Land Degradation and Security: A Geographic Perspective**. The conference came at the right time considering the current challenges facing the Northeast region more especially climate change, land degradation and insecurity.

A total of 105 papers were received for both physical and virtual presentations under five major sub-themes namely: Climate Change and Adaptation (25), Environmental Sustainability (24), Geo-information System (20), Population, Gender and Health (21) and Water Resources (17) respectively.

These diverse sub-themes suggested a comprehensive approach to addressing the pressing challenges, covering agriculture, environmental sustainability, geo-information systems, security, transportation and communication, population, gender and health, and water resources. This conference could potentially lead to valuable insights, collaboration, and solutions for the region.

Most of the papers were well researched and based on sound empirical evidences with policy recommendations for both the government and other relevant stakeholders. The discussions and communiqué will further push the frontier of discourse on climate change, land degradation and security well beyond, political rhetoric's towards providing practical solutions to the intractable problems of our time. The book of proceedings is expected to make impact on the regional, national and global discourse on the climate change and land degradation.

This book of proceedings has been subjected to rigorous peer review which has downsized the number of articles from 105 to 60 that were submitted for presentations. Therefore, only papers presented at the conference and peer reviewed were included in the book.

**Prof. Lazarus Abore Mbaya**

Chairman, LOC.



## FOREWORD

The 1<sup>st</sup> North-East Zonal Conference of the Nigerian Association of Geographers (ZANG) has come at the appropriate time when the worldwide discourse is dominated by climate change, land degradation and insecurity which are considered as serious challenges to humanity in the 21<sup>st</sup> century.

In the North-East region for example, there are number of environmental and ecological challenges which affect the socioeconomic well-being of the people in the area. The predominant environmental challenges in the region include deforestation, desertification, soil erosion, climate change and biodiversity loss.

However, most state governments and other relevant agencies have been seriously concerned in this direction, yet the issues have not been adequately addressed. In line with this, it is pertinent to note that the issue of environment should be seen as everybody's business which require holistic approach as it affects all spheres of life.

In view of the foregoing, I commend the effort of the Department of Geography, Gombe State University for hosting this maiden conference of the association. The conference was well organized and patronized with a total number of 105 manuscripts submitted. However, after peer view, only 60 manuscripts were accepted, presented and published in these proceedings. Based on this, I recommend this book of proceedings to all and sundry. Its contents will not only add value to the literature, but will also educate common man and policy-makers on the challenges of the environment around us with the view to finding lasting solutions.

**Prof. Aliyu Usman El-Nafat**, MBBCH, FWACS, FICS, OFR.  
Vice-Chancellor



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