

COMMUNIQUE OF THE 18TH INTERNATIONAL CONFERENCE AND 38TH ANNUAL GENERAL MEETING OF THE NIGERIAN INSTITUTION OF AGRICULTURAL ENGINEERS (NIAE) HELD AT MICHAEL OKPARA UNIVERSITY OF AGRICULTURE, UMUDIKE, ABIA STATE FROM 2ND TO 6TH OCTOBER, 2017.

PREAMBLE

The 18th International Conference and 38th Annual General Meeting (AGM) of the Nigerian Institution of Agricultural Engineers (NIAE) tagged “Umudike” 2017’ was held at the ICAN Auditorium of the Michael Okpara University of Agriculture, Umudike, Abia State from 2nd to 6th October, 2017. The theme of the conference was “**Dynamics of Agricultural Engineering for Food and Agro-Industrial Production for Economic Recovery in Nigeria**”. It was attended by 174 Agricultural Engineers and other related professionals from various higher institutions of learning within and outside Nigeria; Federal and State Ministries of Agriculture, Departments, Agencies and private organizations. A total of 46 students, including participants registered for the conference. The opening ceremony was attended by over 120 participants and invited guests. A total number of 103 technical papers on the various sub-themes were submitted and reviewed, of which 100 were accepted and published in the conference proceedings.

INTRODUCTION

The opening ceremony was chaired by the President of the Nigerian Society of Engineers (NSE), Engr. Otis Oliver Anyaeji, *FNSE, FAEng*, while the plenary session was chaired by Engr. Prof. Mike Faborode, *FNIAE, FNSE, FAEng*, Secretary General of the Association of Vice Chancellors of Nigerian Universities (AVCNU). Engr. Prof Umezuruike Linus Opara, the President of Pan African Society of Agricultural Engineering and incoming President of International

Commission of Agricultural and Bio-systems Engineering (CIGR) delivered the keynote address. Remarks were made by the Vice Chancellor, Michael Okpara University of Agriculture, Umudike, Prof. Francis Ogbonnaya Otunta, PHF, FNATE, FIIA, JP who was represented by the Dean of the College of Engineering, Prof. Gozie Ihekweaba; the Permanent Secretary of the Ministry of Agriculture, Barr. U. U. Ikonne and the National Chairman, NIAE, Engr. Dr. S. M. Musa, FNSE, FNIAE, Rector, Bauchi Polytechnic, Bauchi, ably represented by the NIAE Vice Chairman, Engr. Dr. Joshua O. Olaoye, FNIAE, Department of Agricultural and Biosystems Engineering, University of Ilorin, Ilorin. Other important dignitaries present at the conference include Engr. Emeritus Prof. F. I. Idike, FNSE, FNIAE, Chairman of NIAE Board of Fellows and Vice Chancellor, Ebonyi State University, Ebonyi State; Engr. Prof. B. A. Adewumi, FNIAE, FNSE, Immediate Past Chairman of NIAE; Dr. Yomi Kasali, FNIAE, Ag. Executive Director, National Centre for Agricultural Mechanization (NCAM); Prof M. K. Othman, the Executive Director, National Agricultural Extension and Research Liaison Services (NAERLS), Ahmadu Bello University, Zaria ably represented by Engr. Akeem O. Lawal; Prof Victor I. O. Ndirika, LOC Chairman and Council Member, Michael Okpara University of Agriculture, Umudike; Engr. Tony Egba, Director, Tropical Engineering Consultants; Engr. Dr Umar Bindir, FNIAE, FNSE. FAEng, ably represented by Engr. Prof. Bashir Aliyu; Prof. S. N. Asoegwu; Engr Prof. Yahaya Mijinyawa; Engr Prof. W. I. Okonkwo and many more.

Six lead papers were presented at the plenary session which addressed issues such as: farm power and machinery; soil and water engineering and applications; emerging technology; farm structures and environment; processing, storage and packaging; and renewable energy. The keynote address focused on ‘The Role of Agro-Industrialisation in Nigeria’s Economic recovery- an Agricultural Engineering

Perspective'. Three workshops on Research/Grant Writing, Path to Accelerating Food Processing Capacities in Nigeria and Cassava Mechanization were accommodated within the conference. At the technical sessions, papers were presented and discussed under the following fields of Agricultural Engineering: Power and Machinery; Farm Structures and Environment; Emerging Technologies; Soil and Water Engineering; and Post-Harvest technology. The opening ceremony and dinner featured the induction of some Fellows of the Institution including Engr. Prof Umezuruike Linus Opara, Engr. Prof Michael Ngadi, Engr. Dr. Y. S. Ademiluyi. Engr Dr. U. J. Etoamaihe and Engr. Dr. O. A. Ogunjirin. The student session was also held.

At the end of the conference, the critical issues were observed and recommendations made to enhance successful implementation and sustainability of Agricultural Engineering Infrastructures for food and agro-industrial raw materials production for economic recovery in Nigeria.

OBSERVATIONS

The following observations were made during the conference:

1. Agriculture in Nigeria is dominated by subsistent to smallholder farmers.
2. With heightened uncertainty and declining availability of income from oil revenue, the diversification of the economy has become a critical national development imperative. Transforming and industrialising agriculture for food and agro-material production and processing offer a logical option.
3. The conference appreciates the various interventions of the Federal and State Governments in agricultural production but observed that the various interventions by the government in the Agricultural sector have not achieved the desired aims due to the neglect or minimum involvement of the Agricultural Engineering. Agriculture without engineering is like a vehicle without wheels.

4. The age long pattern of agricultural practices in Nigeria which principally focus on the use of traditional implements has not yielded the desired results. The sharp rate of annual population increase in Nigeria has worsened the case;
5. Agricultural land development is critical to agricultural production and productivity.
6. There are several locally available agro-industrial raw materials in Nigeria which could be explored to improve the economy.
7. Renewable and alternative energy sources (including solar, bio-mass, bio fuel, hydro-thermal, geo-thermal, etc) are abundantly available in the country and could provide appropriate energy mix for agricultural use.
8. The effect of erosion is ever becoming acute in Nigeria, especially in Eastern Nigeria, which is seriously affecting farm lands and roads.
9. The use of tractor is a central component of farm mechanization, yet Nigeria has far shortfall of number of tractors in use. Also, other components of farm mechanization such as rural electrification, farm structure, energy in agriculture, value addition, agro-industrialization, storage, packaging, agro-processing are still practiced at low level in Nigeria.
10. The paucity of quality, accurate and verifiable data on the agricultural sector indicators is a challenge to be overcome if the country is to achieve its potential in agricultural production.
11. The availability of well trained and highly skilled human and infrastructural capacity is crucial in the agricultural sector to address the pressing challenges of increasing productivity, efficiency and competitiveness in the agricultural and horticultural industries.

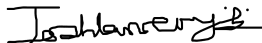
RECOMMENDATIONS

The following recommendations emanated from the conference:

1. We must effectively and sufficiently change the way we practice agriculture and adopt science-based, technology-driven and knowledge intensive agribusiness practices in Nigeria.
2. We must promote and support small, medium and large agribusiness

3. To facilitate industrialization, commercialization and full mechanization, synergy between theoretical research and field practice is recommended.
4. Full mechanization must be imbibed to stimulate the interest of our youths and women in agriculture so as to replace the aged farming population in Nigeria.
5. Land development policies must be put in place and experts (Agricultural Engineers) should be made to run agencies involved in land development.
6. Beyond compiling the list of Nigerian competitive crops, it is recommended that all such crops be exploited at commercial level both for food and industrial end use via adequate value addition.
7. It is recommended that renewable and alternative energy sources must be fully exploited in Nigeria. The Solar Energy Society of Nigeria, Renewable and Alternative Energy Society of Nigeria, NIAE and NCAM should be key players and empowered to play essential roles.
8. Erosion control in Nigeria should incorporate best agricultural engineering practice in order to reclaim the land, roads and other structures.
9. We recommend that full blown mechanization in all ramification at small, medium and large scale must be promoted with agricultural engineering personnel playing key roles.
10. We recommend that standardized and commercial versions of the machines produced within Nigeria and adaptable to our environment that can be mass produced should be encouraged. Agricultural Machinery and Equipment Fabricators Association of Nigeria (AMEFAN), NCAM, NIAE, NSE and Standard Organization of Nigeria (SON) should not relent in producing more codes and standard for components of agricultural machines to enhance mass production and easy manufacturing.
11. Aside involving relevant Government Ministries, registered Agricultural Engineering personnel, NCAM and NIAE must be key players in agricultural development in Nigeria.
12. Government policies should be developed to support and encourage the use of renewable and alternative energy sources at home, farm and industries in Nigeria.

13. Invented machines and mechanization system developed in Nigerian Institutions and Nigerians must be commercialized and patronized within Nigeria, and exported to other nations.


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National Chairman
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