



The Nigerian Society of Engineers

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Interview with Engr. Tai Sik Lee, President, South Korean Federation of Engineering Organization.

Engr. Tai Sik Lee is the President of South Korean Federation of Engineering Organization.

E-Newsletter: *What is the present challenge and trend of engineering in Korea?*

Engr. Lee: There are occasions where we wonder of life to further other engineering stuffs especially in civil engineering which is one of the leading groups of engineering. Currently we are doing research on house on the moon and mars with NASA. We have linkage with Samsung, Honda automobile and some iron production companies. We are doing manufacturing with some future leading groups in engineering.

E-Newsletter: *What can you say about engineering education in Korea?*

Engr. Lee: In Korea, engineering school is 4 years for the university and 2 years for Masters and 3 to 5 years for PhD. We are doing especially the Engineering Economy and engineering excesses which is very important for international business.

E-Newsletter: *Do you have a specific challenge that engineers in South Korea are faced with?*

Engr. Lee: Oh yes. In 2017 we will orbit the moon and 2020 we will land on the moon. That is for the next generation on new



Engr. Tai Lee

space engine. We are doing smart phones and we are conscious of the IT. We are also concentrating on the ICT industry and manufacturing for automobile.

E-Newsletter: *On the new trend of technology; the renewable energy, are South Korea engineers doing anything specific on the project?*

Engr. Lee: Most important about the renewable energy, especially the solar energy, we are constructing smart solar highway. If we cannot put the highway on the roof, then we will put the solar cells. If we have a project within 20 kilometers, we will produce 200MW power plant production. This is very important for the next generation.

E-Newsletter: *What do you think is the perspective of the new generation that want to embrace engineering?*

Engr. Lee: That is a hard one because the young ones today do not want to study mathematics and physics. Engineering is a very important industry and discipline now and in the future.

E-Newsletter: *Thank you sir.*



Some members of the Nigerian Society of Engineers Port Harcourt Branch in a group photograph on Wednesday 11th December 2013 during the Nigerian Society of Engineers 2013 International Conference in Abuja.



World Engineering Conference on Sustainable Infrastructure,
2nd - 7th November 2014, Abuja-Nigeria.
Theme: *Development of Sustainable Infrastructure in Africa*
<http://www.wecsi2014.org>



Communiqué of the International Engineering Conference, Exhibition and Annual General Meeting of the Nigerian Society of Engineers (NSE) held at the International Conference Centre, Abuja from 9th-13th December, 2013.

PREAMBLE

The International Engineering Conference, Exhibition and Annual General Meeting (AGM) of the Nigerian Society of Engineers (NSE) tagged ABUJA 2013 was held at the International Conference Centre, Abuja from 9th-13th December, 2013. The theme of the Conference was "Strategies for Transforming Agriculture and Water Resources Sectors of the Nigerian Economy".

The five-day event comprised variety of activities including Opening Ceremony, Plenary and Technical Sessions, Nigerian Content Workshop, Group Dynamics for NSE Divisions and Branches, Students' Programme and Young Engineers Forum. The Conference was enriched with other equally important social activities for enhanced interaction amongst the participants. These included Excursions, Spouses Programme, Cultural Nite, Welfare Nite, Annual General Meeting (AGM), Annual Dinner/Dance, Engineering Games and Closing Ceremony. All activities were well attended by Engineers from Research and Development Centres, Academia, Industry, Federal, States and ministries, Departments and Agencies. Others included Policy Makers, Technocrats, Legislators, Development Partners, etc within and outside Nigeria. More than four thousand (4000) participants registered for the Conference. A total number of 14 lead and 74 technical papers on the various sub-themes were presented. Foreign delegates from USA, Canada, Holland, Ghana, Uganda, Senegal, Burkina Faso, Benin Republic and Niger Republic participated fully in the conference.

INTRODUCTION

The opening ceremony was chaired by the President and Commander-in-Chief of the Armed Forces of the Federal Republic of Nigeria Dr. Goodluck Ebele Jonathan GCFR, ably represented by Engr. Professor Chinedu Nebo FNSE, the Honourable Minister of Power. The welcome address was delivered by the President of NSE, Engr. Mustafa Balarebe. Shehu FNSE. The Executive Governor of Kano State, Engr. Rabi'u Musa Kwankwanso FNSE graced the occasion. Osun State Governor was also represented. The keynote address was delivered by Honourable Minister of Water Resources, Mrs Sarah R. Ocheke which generated a lot of interest among the audience. The Honourable Minister of the Federal Ministry of Communication Technology, Engr. (Mrs) Mobolaji Johnson MNSE graced the occasion. Others included the Presidents of World Federation of Engineering Organisation (WFEO), Engr. Marwan Abdel Hamid, Federation of African Engineering Organisation (FAEO), Engr (Dr.) Martins van Veelen and Managing Director of Shell Petroleum Development Company Mr. Mutiu Sunmonu. Six African countries were represented during the Conference. Several dignitaries from the private and public sectors graced the occasion amongst which International Commission on large dams (ICODS) was represented by Engr. Adama Number.

The high point of the ceremony included presentation of Special Awards and Fellowship Conferment on deserving Engineers totaling seven and presentation of Midas Software to six Nigerian Universities. The opening ceremony was concluded with the opening and tour of the Exhibitions led by the representative of Mr. President.

OBSERVATIONS

The following observations were made at the end of the Conference and Annual General meeting:

1. The policy reform and programme on rice revolution plan embarked upon by the present administration is laudable.
2. Indiscriminate importation of tractors, implements and agro processing machines, which can be locally manufactured, is

hindering the effort to promote Agricultural Mechanization with the attendant consequences.

3. In spite of recent progress, the Agricultural sector continues to face challenges related to inefficiency and low productivity. Equally, the value chain approach resource management, involving improved production and postharvest processing systems and value-adding activities, being advocated under the Agricultural Transformation Agenda (ATA) are important for agro-based rural industrialization.
4. The pronouncement of the United Nations (1998) that population growth will create unparalleled demands for basic needs especially food, water and infrastructure, thus the role of engineering profession will be critical in fulfilling those demands at various levels mostly in the developing economies like Nigeria.
5. The acute shortage of skilled manpower to support profitable agricultural production is largely caused by mass rural to urban migration, due to lack of good roads, water, electricity, housing, schools in rural areas. This is compounded by a missing link in the development and training of Engineers for professional development capacity for service delivery and succession plan for continuity.
6. Water is a key driver of economic and social development but should not be considered in isolation.
7. Supply-side solutions alone are not adequate to address the ever-increasing water demands from demographic, economic and climatic pressures. Wastewater treatment, water recycling and demand management measures are also necessary to counter the challenges of inadequate supply.
8. There is a dire need for better data generation, storage, retrieval and management for an effective and strategic planning in the Agriculture and Water sectors.
9. The nation harnesses less than one-fifth of its water potential. There are some hydrological areas and River Basins where difficulties to access water contribute to its physical scarcity. The overwhelming challenge is one of insufficient infrastructure and poor water governance.
10. Sustainable water infrastructure development is essential to wise-use of water, which is needed if all the MDGs are to be attained. Although improved access to water and sanitation is an established MDG, yet a very strong case has been made that improved access to water services will contribute across all of the MDG.
11. The public sector water service providers have performed abysmally low. Much of the success from increased private sector involvement depends on the strength of the private sector and the administrative capacity of the government to regulate their involvement.

Water demand to expand the irrigation area from 313,000ha in 2010 to 805,000ha in 2030 covering both public and small scale private schemes would translate to an increase of 4,355 million cubic metres per annum. This is expected to raise the rice production by 1.8 million tonnes per annum.

13. Nigeria had made considerable investment in water schemes and related activities in addition to being endowed with abundant water resources estimated to be 319 billion cubic meters per annum.
14. There is apparent dearth of data and verified information on Research and Development (R & D) to guide national planning coordination.
15. The wide spread folding up of Agro allied industries across the country, affecting virtually all segments of our national life and economic growth, necessitate the initiation of well coordinated inventory to guide professional bodies like NSE, the private sector and manufacturer association for a visionary intervention.
16. The generation of Agriculture waste and waste water is steadily increasing in Nigeria and less attention is given to converting such wastes to wealth.
17. The consistence and the laudable effort of the NSE to promote Nigerian Content in key Engineering trades and related areas, which culminated in the establishment of the National Content Committee is yielding positive result.
18. The current Agricultural policy of Nigeria contains scanty aspect of mechanization but there is no comprehensive Agricultural mechanization policy in its entirety.

RECOMMENDATIONS

The following recommendations emanated from the Conference and Annual General Meeting:

1. There is the need for a paradigm shift to move the Nigerian Agriculture from subsistence to commercial practices leading to industrial growth.
2. Relevant machinery for small-scale farmers needs to be developed. All tiers of Government should facilitate the synergy between the incubation centers and local entrepreneurs to manufacture the equipment needed. Public and private sectors should support the current efforts of National Centre for Agricultural Mechanization (NCAM) in the extension and commercialization of some of these proven mechanization technologies.
3. Research and Development (R & D) Centres through appropriate legislation should be empowered to carry out Agricultural machineries and implements testing and certification effectively. This will protect the country from being used as a dumping ground.
4. Training is one key component of capacity building, which must be undertaken in all segments of the product value-chain. Nigerian University Commission, National Board for Technical Education and professional bodies such as Nigerian Society of Engineers (NSE) should be encouraged to partner with the Universities and Polytechnics in reviewing Engineering curricula to address societal needs and realities.
5. For institutions of higher learning and R&D Centres to promote and sustain the entrepreneurial mind-set they must be involved in commercialization and marketing of developed technologies.
6. Engineers should be involved at all levels in policy formulation programmes, projects development and implementation to address the identified challenges in Agriculture and Water Resources sectors. Specifically, definite roles can be defined for NSE in the ongoing efforts in ATA, National Water Resources Master plan (NWRMP), National Integrated Master Plan (NIIMP).
7. Government in collaboration with NSE should appraise the establishment and operations of Sty and Fiat Assembly Plants in Nigeria with a view to ascertain why they collapsed and to plan their remodeling and resuscitation to support the laudable Agricultural Mechanization policies and programme.
8. Government in collaboration with relevant professional bodies to commission a team of experts to study the Indian Tata experience which transformed from a Bedford truck marketing outlet to a vehicle manufacturing company with so many models to its credit.
9. NSE in collaboration with Raw Materials Research and Development Commission, National Centre for Agricultural Mechanization and National Office for Technology Acquisition and Promotion should mount programmes to promote technologies and innovations emerging from the National Innovation System.
10. To acquire and transfer technology for the support of critical sectors of Agriculture and Water Resources, there is need for fostering functional linkages between academia, professional bodies, regulatory bodies and the industry.
11. Major reform in the operations of the NSE and COREN to promote Continuous Mandatory Professional Courses and Cumulative Credit Points (CCPs) to allow Engineers gain admission into NSE from base Divisions and eventual registration by COREN into different statutory categories.
12. For Nigeria to increase food and water security, the nation must glean insights from information, understanding trade-offs among policy choices, and establish institutional mechanisms to support execution.
13. The 3rd National Water Resource Master Plan (NWRMP) about to commence operation in 2014, provided definite roadmap on water demand structure for the 5 principal areas of Municipal water, Irrigation, Aquaculture, Livestock and Industry. For the nation to meet this projected water demand, strategies for composite supply drawn from surface and ground sources should be sustained with quality infrastructural development plan.
14. The need for quality and effective data generation and information sharing though generally exceed, most times, the financial capacity for effective intervention, efforts should be intensified for improvement of infrastructure, processes and quality personnel.
15. The reorientation of regional integration and consolidation of resources to develop the capacity that would lead to the establishment of quality infrastructure which can guarantee sustainable and economic competitiveness of the nation is imperative.
16. The stakeholders must be given a voice and real responsibility in a collaborative water infrastructure planning, development and management and to share ownership. Nigeria should put in place appropriate policies and institutional framework to ensure a coordinated development and management of land and water. The Nigerian Integrated Water Resource Management Commission (NIWRMC) and National Water Resource Institute (NWRI) should be supported to facilitate this process.
17. There is the urgent need for collective action to change existing capital out-lay cycle which underfund water infrastructure development and subsequently ensures rapid deterioration of these assets afterwards due to poor operation, maintenance and general post-development management. Governments at all levels, private firms and civil society should mobilize and pool resources for sustainable development and management of critical water infrastructure.
18. In furtherance of the noble course of the Nigerian Content, the establishment of the National Content Board was advocated to replace the erstwhile Committee under the all embracing new Content law with a view to ensuring full implementation of the law and to make the regulation independent of the key players in the relevant Sectors.
19. Definite and all encompassing policy on Agriculture should be developed and passed into law for implementation.

Engr. Mustafa Balarabe Shehu, FNSE
President of Nigerian Society Engineers (NSE)