# Special Workshop E
# Modernising Agricultural Engineering Programmes to meet Africa's Agenda 2063: The Africa We Want

**Date:** 21st September 2020
**Time:** 11.00 – 16:00 (Nigeria: GMT+1)
**Venue:** ZOOM Virtual Online Meeting

Session: Breakout rooms (**Group 1**)

| **Group 1:** Panel members |
|---|
| Ms Mary surname (Affiliation, country) |
| Ms Ayah Fildah (Makarere University, Uganda) |
| Ms Boeboe Neethling (PASAE) |
| Prof firstname Olayanju (VC; Landmark University) |
| Prof. Mike Ngadi (McGill University, Canada) |
| Prof. Babatunde Ogunsina (Obafemi Awolowo University) |
| Prof. Nicholas surname (Affiliation, Country) |
| Prof. firstname Adeloye (Affiliation, Country) |
| Facilitators: Prof. Linus Opara (Stellenbosch University, South Africa)<br>Prof. Folarin Alonge (University of Uyo, Nigeria) |
| Rapporteur: Prof. Fawole (University of Johannesburg, South Africa) |


Executive Summary

The dialogue focused on question 1: "***Are the Agricultural Engineering Curricula offered at various institutions meeting the needs of industry? If not, what needs to change?*** It was understood that curricula are at the heart of any profession. For example, the difference between Agricultural Engineering and Medicine is based on the difference in the skills and competences in both disciplines – and hence the curricula. All the participants are based in Africa except Prof. Ngadi, who is based in Canada. The discussion was lively, with insightful contributions from all the participants.

There was a consensus that the current curricula offered at various institutions in Africa are not meeting the needs of the industry.

The purpose of this report was to summarise the main recommendations raised.


1. **Linkages between academia, industry and policy**
   The group discussed the need to define who "the industry" is; the end-users of knowledge. This will help foster the much-needed synergy between knowledge creation and its application. The need to have the buy-in of policymakers was also noted. The need to overhaul the current industry training schemes was recommended. For example, the students' industrial work experience scheme (SIWES) in Nigeria.

2. **Need for a complete overhaul of the curricula and program structure**
   Several participants noted that the current curricula and program structure required a complete overhaul. Three contextual changes were given particular prominence; that (i) the curricula were outdated, (ii) the current heavy credit load was irrelevant, and (iii) the program structure was not efficient.
   More generally, the view was expressed by many that there was a need to include practical applications in the curricula and expose students to modern technologies and advanced applications such as digitalisation, data science, drone tech, machine learning, artificial intelligence and robotics. In order to incooperate these topics in the curricula, there is, therefore, a need to overhaul the current credit load. There is also a need to provide the necessary facilities and equipment for practical trainings. It was also argued that the current agricultural engineering program provides little connection between engineering principles and engineering inclined agricultural systems knowledge. For example, in Nigeria, the first three years are spent learning other engineering principles; only in the fourth and fifth years that students start learning about applications. This means there is no proper grounding or solid foundation in agricultural systems knowledge. This needs to be addressed. A participant also noted the direct impacts of the stereotypes associated with the name “agric engineering” – that graduates find it difficult to get jobs because of the name – due to competition between agric engineering and other engineering disciplines. This led to the recommendation to consider a name change and or the need to make the name more attractive.

3. **Paradigm shift: integration of local knowledge and custom-made approach to solving Africa’s problems**
   Concerns were also expressed about the current rat race and catch-up approach we often adopt in Africa. It was argued that there was a need to embrace “Afritechnology” – by integrating local knowledge and rather focus on how local solutions could be improved or optimised to solve local problems. This will not only encourage adoption of technology in the industry, but it will also promote African knowledge systems. This perspective was not necessarily in contrast with that of other participants on the need to embrace modern technologies and advanced applications. The need to train students on critical thinking ability, was also raised. This will allow for students to provide customised solutions to problems in local industries.