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Bottlenecks for a powerful and applied agricultural university education in Uganda

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Abstract

Agricultural sector and industry in Uganda are lacking well trained and educated staff, besides a formal strong developed agricultural education and extension system. Alumni of agricultural universities have serious problems to find jobs and are seen in many cases as “unemployable”. An important reason for this situation is seen in lacking practical knowledge, skills and experiences. In comparison, Germany has since 55 years an excellent vocational training system that is also combined with higher theoretical education through universities of applied sciences and other educational institutions.

The study examines the current state of practice-oriented elements in university education in Uganda and compares it with the German approach. For the analyses the B.Sc. in Agriculture of HSWT in Bavaria is compared with the one of MMU in Uganda by using first results of the Erasmus+ Project BASIS (Boosting Agricultural Studies In Sub-Saharan Africa). A focus is given to the university - farmers relation to provide placements including length, supervision and effectiveness of placements in agricultural study courses. In addition practical elements in the lectures.

The data base for the study is the comparison of curricula by using the BASIS findings, key person interviews, farm visits and the own participation at this placement process during a 6 months internship in Uganda. The used method is a descriptive analysis of the two B.Sc. courses, placement farms and structures in Uganda and Germany.

The results indicate that despite a formal functioning system with placements there is a serious lack of suitable placement farms and a deficiency in practice-oriented elements in lectures. Placements lack both a distinctive impact on students and sufficient supervision by the university. Furthermore, the collaboration between higher education institutions (HEIs) and practical farmers is minimal. To improve employability of B.Sc. in Agriculture alumni it is important to develop on one side an efficient network of placement farms to give students an insight in farm realities and needs and on the other side to develop and use practical elements in lectures in the study course itself.

Keywords: Placement & practical education, applied sciences, linkage between farms and universities

Introduction

In the year 2023, the total population of Uganda was 48.5 million (World Bank Group, 2024). This figure is expected to increase significantly, reaching over 87 million by 2050. (UN DESA, 2022). The gross domestic product (GDP) of Uganda is demonstrating positive growth. The fiscal year 2021/22 saw a 4.7% growth rate. The agricultural sector contributed 24.1% to the GDP (UBOS, 2022). Despite the expansion of the economy, the rate of unemployment has concurrently risen. The 2021 Ugandan National Labour Force Survey revealed that the national unemployment rate was 11.9%. In comparison, the youth employment rate was higher, at 16.5%. The report defines the term "youth" as individuals between the ages of 18 and 30. A comparable increase is evident in the Sustainable Development Goal (SDG) figure 8.6.1, which indicates that 41.1% of Uganda's youth were not engaged in education, employment, or training (NEET) (UBOS, 2021). The objective of SDG 8.6 was to reduce the proportion of NEETs by 2020 (United Nations, 2024). However, this goal was not met due to an annual increase in the percentage of NEETs. It can be observed that the unemployment rate in urban areas is higher than in rural areas. Additionally, the agricultural sector is experiencing a decline in the number of young people entering the workforce, with many opting to pursue employment opportunities in the service sector, to establish their own small businesses or work informally, particularly in urban areas. The urbanisation can be attributed to the lack of appeal of a career in agriculture and the rural environment for young people, which is also a consequence of the limited employability of students (Ahaibwe & Mbowa, 2014; Magelah & Ntambirweki-Karungonjo, 2014; World Bank Group, 2015). Furthermore, the risk of unemployment is amplified with the attainment of higher levels of education (Egessa et al., 2021). It is evident that action is required of the Ugandan higher education sector. The function of universities is to provide students with the knowledge and skills required for further employment opportunities. Should graduates be unable to gain employment in their field of study or be deemed unemployable, it would necessitate a re-evaluation of the mission of the university in question. It has been demonstrated that students' employability can be improved through the acquisition of enhanced skills, vocational training and the establishment of connections with industry and farms (Egessa et al., 2021; Makumbi, 2018; Mgaiwa, 2021). This is also targeted by the SDG 4.4, which is designed to achieve the following: "By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship" (United Nations, 2024).

In comparison, a practical education and training system has been established in Germany for 55 years. Different levels of theoretical knowledge are combined with work placements and practical training on farms. Universities also include practical modules in their curriculum to ensure that graduates acquire the knowledge, skills and abilities they need to find employment.

This paper compares and analyses the practical elements and current curriculum of the B.Sc. Agriculture at the Mountains of the Moon University (MMU) in Fort Portal, Uganda. It also compares it with the methods of the B.Sc. Agriculture at the University of Applied Sciences Weihenstephan-Triesdorf (HSWT) in Germany. Emphasis is placed on the delivery of work placements, the integrity of application relevance and the relationship between university and farms to ensure the applied teaching of skills that students will use in their future work.

Material and Methods

The MMU was established in 2005 in the Tooro region of western Uganda. It is located in Fort Portal and offers the main programme branches agriculture, tourism and environmental sciences among others. The campus, situated outside of town, provides students with the opportunity to engage with rural development and agriculture on a practical level. In 2022, the Ugandan government assumed control of the university, thereby making it a public institution (MMU, 2024). This study compares the B.Sc. in Agriculture at MMU with the B.Sc. in Agriculture at the University of Applied Sciences Weihenstephan-Triesdorf (HSWT) in Germany.

The focus is on the implementation of practical elements, placements and the application of acquired knowledge at both universities. A similar approach is employed by the European Erasmus + Project BASIS (Boosting Agricultural Studies in Sub-Saharan Africa), whose primary objective is to "reshape student practice and shift it from teaching to competence-based practical work and introduce farm placements to ensure better student employability" (BASIS, 2024). The two universities are participants in this project, and the initial findings from their respective fields are presented in this paper. Additional insights were gathered through key informant interviews, farm visits, and direct involvement in the placement process during a six-month internship in Uganda. The methodology employed was a descriptive analysis of the two B.Sc. courses, placement farms, and structures in Uganda and Germany.

Results and Discussion

A comparative analysis of the curricula of the two universities offering the Bachelor of Science in Agriculture reveals that both institutions require students to undertake a compulsory placement on a practical farm. While MMU divides this into two eight-week periods, with one focusing on crop production and the other on animal husbandry, at HSWT the placement lasts a minimum of 20 weeks throughout the entire fifth semester. Although the complete duration of the placements appears to be similar, the intensity of the placements varies considerably. The HSWT requires a total of 870 practical hours and an additional 30 contact hours to pass the placement, whereas the MMU requires 300 practical hours of which 50% are contact hours for both placements combined. It is evident that MMU places a greater emphasis on reports and presentations, which in Germany are regarded as a secondary concern. The cooperation between student and field supervisor is very low compared to Germany. Furthermore, the overarching objectives of the placement vary. At MMU, students are expected to develop the ability to collaborate with a diverse range of individuals, enhance their communication skills and foster a positive and independent work ethic. The German placement is based on the acquisition of agricultural skills, including practical farm management, decision-making and the evaluation of production processes. It is expected that students will be able to work independently on a typical farm and will have a grasp of the underlying rationale behind the structures in place.

This applied and strongly practical-oriented scheme is based on the traditional German vocational training system. The scheme was established 55 years ago and involves students and pupils being sent to practical working farms where they receive instruction and training in the dissemination of their knowledge. Their objective is not to exploit students for personal gain or to utilize their labor on the farm. Instead, remuneration is provided in exchange for their commitment to training the next generation of farmers in sustainable agricultural practices within the country. Additionally, farmers are open to collaborating with educational institutions, as they can benefit from the scientific research, impact, and innovations these institutions offer. A collaborative structure based on trust and mutual benefits is lacking in Uganda. The primary challenge is to identify suitable agricultural establishments that can effectively educate students. Technical and vocational education centres frequently accommodate a considerable number of students concurrently, akin to a national demonstration farm. As a result of this characteristic, the placements are regarded as a mere formality, lacking the requisite educational input. The same outcomes are yielded by the BASIS findings, which demonstrate similarities amongst the participating Senegalese and Togolese higher education institutions.

Conclusions and Outlook

The current practice and placement approaches at MMU can be further developed by integrating significant milestones within the agricultural training curriculum. The primary challenge is the incorporation of appropriate, representative, and participatory agricultural enterprises. It is recommended that students be provided with opportunities to engage in practical agricultural activities within their own regions, adopting a hands-on approach.

This will also enhance their future employability. In addition to Sustainable Development Goals (SDGs) 4 and 8, other goals such as reducing hunger and emphasizing the importance of rural areas through the dissemination of applicable agricultural knowledge could be advanced. Achieving these and other goals depends on the integration of practical and experiential learning alongside traditional academic curricula. Therefore, it is essential to establish a close connection between universities and farmers to foster robust relationships of trust and facilitate knowledge exchange. Universities require data and assistance in the practical field, while farmers can improve their practices through the application of university research findings and advice. Similarly, collaboration with industry partners is crucial. In summary there is a need for closer collaboration between higher education institutions, practical farmers and industry partners to enhance the employability and skillset of future employees. Ultimately, a symbiotic relationship between these three entities can lead to improvements in all aspects of education and living standards.

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