

Research Application Summary

**Public-Private partnerships for skills development at Sokoine University of  
Agriculture, Tanzania**

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**Abstract**

Changing youth labour market conditions in Tanzania necessitate the acquisition of demand-driven skills for the successful school-to-work transition of Tanzanian graduates particularly in rural and semi-rural areas. In tertiary education at agricultural higher education institutions (HEIs), private sector linkages enable students to develop industry-facing skills, preparing them to undertake rigorous research in their respective areas of expertise while developing marketable skillsets for their successful entry into the workforce. Public-private partnerships are effective mechanisms for incorporating demand-driven skills into higher education curricula with the aim of fostering economic growth and reducing youth unemployment. This case study details public-private engagement for the purposes of attaining higher education objectives using the example of the formalization of a partnership between John Deere, Sokoine University of Agriculture (SUA), and the Innovative Agricultural Research Initiative (iAGRI). The partnership was designed to deliver training programmes to students and graduates to address the labour market skills gap and facilitate the transfer of knowledge in the area of agricultural mechanization. The initiative to provide the students and farmers with the skills and training needed for achieving increased production, more secure livelihoods and higher incomes. The first phase of the activities engaged 54 participants in practical training in the use of tractor implements, estimation of crop yields, determination of sowing and planting dates and basic tractor maintenance and repair. This paper outlines lessons learned and results of the training for the purpose of adding to the existing knowledge base of public-private partnerships for the achievement of HEI-based skills acquisition.

**Key words:** enterprise development, labour-market, private sector linkages, school-to-work transition, Tanzania, workforce development, youth unemployment

**Résumé**

La modification des conditions du marché du travail de la jeunesse en Tanzanie nécessite l'acquisition de compétences axées sur la demande pour la réussite de la transition de l'école

au travail des diplômés tanzaniens en particulier dans les zones rurales et semi-rurales. Dans l'enseignement supérieur des Etablissements d'Enseignement Supérieur Agricole (EES), les liens avec le secteur privé permettent aux étudiants de développer des compétences faisant face à l'industrie, les préparant à entreprendre des recherches rigoureuses dans leurs domaines de compétence respectives, tout en développant de compétences du marché pour leur entrée réussie sur le marché du travail. Les partenariats public-privé sont des mécanismes efficaces pour l'intégration des compétences axées sur la demande en programmes d'enseignement supérieur dans le but de favoriser la croissance économique et de réduire le chômage des jeunes. Cette étude de cas détaille l'engagement public-privé aux fins de la réalisation des objectifs de l'enseignement supérieur en utilisant l'exemple de la formalisation d'un partenariat entre John Deere, Sokoine University of Agriculture (UAS), et l'Initiative Novatrice de Recherche Agricole (iAGRI). Le partenariat a été conçu pour offrir des programmes de formation aux étudiants et aux diplômés pour combler le déficit de compétences du marché du travail et de faciliter le transfert des connaissances dans le domaine de la mécanisation agricole. L'initiative de fournir aux étudiants et aux agriculteurs les compétences et les formations nécessaires avaient pour besoin l'accroissement de la production, des moyens de subsistance plus sûrs et des revenus plus élevés. La première phase des activités avait réunie 54 participants à la formation pratique dans l'utilisation des instruments de tracteur, l'estimation des rendements des cultures, de la détermination des semences et des dates de plantation et de l'entretien de base du tracteur et de la réparation. Le présent document décrit les leçons apprises et les résultats de la formation dans le but d'ajouter à la base de connaissances des partenariats public-privé pour la réalisation de l'acquisition de compétences à base de HEI.

Mots clés: les entreprises de développement, le marché du travail, liens avec le secteur privé, transition de l'école au travail, la Tanzanie, le développement de la main-d'œuvre, le chômage des jeunes

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## Introduction

Agriculture employs 80% of the population in Tanzania (World Bank, 2012), yet youth have increasingly looked to other professions for employment with cultural perceptions of agriculture being predominantly negative (Kimaro *et al.*, 2015). Opportunities to work in higher value add agribusiness and to engage in income-generating opportunities outside of traditional agricultural pathways are often untapped. Increasing global unemployment and rising rates of underemployment have been exacerbated by existing and widening skills gaps. Furthermore, the current climate of increasing demand for food production coupled with youth unemployment is an opportunity for enterprising and entrepreneurial graduates.

According to the Integrated Labour Force Survey, there are nearly 15 million youth aged 15-35 years in Tanzania with over 15% considered economically inactive (NBS, 2014). To meet both rising demands for industry-facing skillsets and in recognition of youth underemployment, agricultural education and training (AET) programmes in tertiary institutions are developing programmes targeting skills development and encouraging entrepreneurship. The development of entrepreneurial and agribusiness skills has been cited as an opportunity

to decrease mass out-migration and address trends in rural to urban migration (Elder, 2015). Key reasons for the lack of agricultural entrepreneurial activities for youth in rural areas include lack of agricultural technical and vocational education and training (TVET) that addresses labour market needs (Deotti and Estruch, 2016).

There is an increasing recognition of the role of youth as stakeholders; however, the engagement of youth in agriculture remains a challenge. Curricula of agricultural higher education institutions often lack a sufficient focus on developing entrepreneurial and industry-facing skills. Indeed curriculum reform is recognized as a significant challenge in African higher education (USAID, 2014). Linking with the private sector is a pathway for targeting curriculum reform for the purposes to address skill gaps of young graduates.

This paper describes an initiative to provide skill enhancement training for youth and farmers in Tanzania. It is a tripartite arrangement involving John Deere, Sokoine University of Agriculture (SUA), and the Innovative Agricultural Research Initiative (iAGRI). The iAGRI is one of the USAID Feed the Future projects.

**The iAGRI Project.** The Innovative Agriculture Initiative (iAGRI) is a Feed the Future project funded by the United States Agency for International Development (USAID). The iAGRI project aims to prepare the next generation of agricultural leaders in the public and private sectors to strengthen the core institutions of agricultural research and education in Tanzania. The Ohio State University (OSU) is the managing entity for a consortium of six U.S. universities that include Michigan State University, Virginia Tech, Tuskegee University, University of Florida and Iowa State University. Key partners in Tanzania include Sokoine University of Agriculture (SUA) and the Ministry of Agriculture, Livestock and Fisheries (MALF). The project prepares teachers, researchers, extension practitioners, and students in Tanzania to cooperatively and effectively address the needs of smallholder farmers and the agribusiness sector.

**The Tractor Training and Research Programme (TTARP).** In the Tanzania Agriculture and Food Security Investment Plan (United Republic of Tanzania, 2011), limited facilities such as farmer training centres are identified as a constraint to improving agricultural productivity. The plan also cites the importance of agricultural extension, research, and training in improving nutrition and food technologies. With these constraints in mind, the TTARP was developed as a comprehensive training program to strengthen the industry skills of Sokoine University of Agriculture (SUA) students, graduates, farmers and agripreneurs. In Tanzania, there are approximately 7 tractors per 100 km<sup>2</sup> of land (World Bank, 2012) against the global average of 19.7 tractors per 1,000 hectares. Many of the existing tractors in Tanzania are in disrepair, creating a need for not only qualified tractor owners/operators, but for farmers, entrepreneurs, and extension agents to be trained in their care.

There are an estimated seven tractors per 100 km<sup>2</sup> of arable land in Tanzania (World Bank, 2012). Overall, there has been a 300% increase in the number of tractor in use in Tanzanian between 1995 and 2007 (PASS Trust, 2013). However, along with increased mechanization,

training is an essential component to improving yields and extending the benefits of mechanization to smallholder farmers. Through public-private partnerships under the TTARP, students have the opportunity to develop industry-facing skills, enabling SUA to fulfil its role as an institution dedicated to educating emerging scientists, but also its role in linking farmers with the skills and training needed to facilitate increased production, more secure livelihoods, and higher incomes.

**Tripartite Partnership and Mutual Interest.** The development of the TTARP was done in close cooperation with key stakeholders including the Ministry of Agriculture, Livestock and Fisheries, Southern Agricultural Growth Corridor of Tanzania (SAGCOT), Tanzania Private Sector Foundation (TPSF), the Tanzania Chamber of Commerce, Industry, and Trade, the Tanzania Horticultural Association (TAHA), the Tanzania Agriculture Society and participation of business leaders, farmers and extension workers. Sokoine University of Agriculture was the target Higher Education Institute (HEI) in the partnership. This partnership between an institution of higher education (HEI), the private sector and the Ministry of Agriculture enabled a collaboration based on mutual interest, resources and unique value-add for each of the partners.

The partnership involved the donation of a fully-equipped, 75 horsepower tractor from John Deere to SUA. The tractor was donated for use for continued practical training in agricultural mechanization for BSc. students at SUA and for applied research to be conducted by members of academic staff and MSc. and PhD. students. It was also envisaged that SUA would incorporate the training of farmers in future phases of the programme.

**Training.** A total of 120 participants were engaged in this first round of training sessions. These included 90 students, 8 farmers, and 6 MALF staff selected for the first cohort of training. Of these 120 individuals, a targeted group of 54 participants were trained on setting up and running Agricultural Contracting Services through intensive training over the course of six days. The comprehensive training featured training in three modules: 1) tractor operations, 2) tractor mechanics, and 3) tractor-hire business management for farmers and tractor operators. In addition, 50 participants were trained on project sales and practical knowledge of tractor implements. The aim of the targeted selection of participants was to ensure that the trainees are provided with significant knowledge or skills conducted with a planned, structured curriculum and have the greatest potential to acquire new knowledge or skills that s/he can translate into action.

The majority of the participants did not have an understanding of markets and marketing principles from a business point of view. Consequently, these skills were targeted in order to improve the participants' awareness of how to successfully market their business. This training followed an initial skill training to help the trainees fully harness their understanding of how agricultural mechanization can tap into existing markets and promote growth of the agriculture sector of Tanzania.

## **Conclusion**

Agriculture is a main driver of Tanzania's economy. However, limited investment in mechanization is a major constraint hampering agricultural productivity. Through public-private partnerships, cutting-edge research can be paired with the ability of the private sector to upscale technologies that directly benefit farmers. The targeted skills and knowledge transfer of agricultural mechanization to the participants is an important advancement in increasing farmer productivity, entrepreneurship opportunities and increasing incomes.

The tractor training programme engaged youth in agriculture in meaningful and practical experience. Few impact evaluation studies have been conducted on the integration of entrepreneurship skills into agricultural education and training programmes. A cross-sectional qualitative assessment would provide further insight into the impact of the training. Similar studies have documented outcomes such as a change in entrepreneurial mind-sets as a result of tailored programmes (Valerio *et al.*, 2015). An additional component addressing access to finance could also be incorporated to develop funding pathways for participants.

Agricultural Education and Training (AET) programmes that aim to increase the ability of youth to pursue opportunities that combine technology, skills and knowledge alongside business skills such as marketing, accounting and sales have the ability to increase the entrepreneurial mind-set of graduates. Training opportunities can incorporate business plan development, marketing and sales strategies, financial management and record keeping provide a holistic approach to engaging youth in rural areas in agricultural entrepreneurship endeavours with the aim of transforming job seekers into job creators. The programme has effectively developed synergies between the private and public sector by engaging key stakeholders during the planning process to identify and address the skills gap of young graduates while meeting industry demands.

Strengthened cooperation between higher education institutions and the private sector can increase the quality of education and training initiatives. Private sector linkages have the potential to encourage and empower students by preparing them not only to undertake rigorous research of their respective areas of expertise, but also to develop marketable skills essential for entering the workforce. The improved use of modern mechanization technologies was developed through the public-private partnership to boost agricultural productivity and increase opportunities for graduates of tertiary education.

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