

SOKOINE UNIVERSITY OF AGRICULTURE

COLLEGE OF SOCIAL SCIENCES AND HUMANITIES



A REPORT OF THE 16TH SOKOINE MEMORIAL WEEK HELD AT SOKOINE UNIVERSITY OF AGRICULTURE, MAIN CAMPUS, ON 9TH - 12TH APRIL 2019 MOROGORO, TANZANIA



Theme

Agricultural Productivity and Industrialization for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future

List of Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
BMI	Body Mass Index
CICT	Centre for Information and Communication Technology
CoPD	Committee of Principals, Deans and Directors
CSSH	College of Social Sciences and Humanities
DVC	Deputy Vice Chancellor
HIV	Human Immuno-deficiency Virus
MoU	Memorandum of Understanding
RDVA	Rural Development Volunteers Association
RECODA	Research, Community and Organizational Development Associates
SAT	Sustainable Agriculture Tanzania
SIDO	Small Industries Development Organization
SNAL	Sokoine National Agricultural Library
SUA	Sokoine University of Agriculture
SUGECO	Sokoine University Graduates Entrepreneurs Cooperative
TBC	Tanzania Broadcasting Corporation
TV	Television
VC	Vice Chancellor

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1.0 Introduction

Sokoine University of Agriculture (SUA) organized a week-long series of events to commemorate the Late Edward Moringe Sokoine in line with the University's long-standing tradition of organizing the Sokoine Memorial Lectures. The event took place from 9th to 12th April 2019 at the Main Campus, Sokoine University of Agriculture, and was planned by a committee appointed by the Vice Chancellor together with co-opted members. *The aim is to honour Sokoine's legacy for SUA and Tanzania's development that in turn helps to market and increase visibility of SUA.* Various units (Colleges, school, directorates, departments and centres) showcased their technologies, innovations, products and services.

The theme for this year was: *“Agricultural Productivity and Industrialization for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future”*. While the Guest of Honour for the Sokoine Memorial High Profile Discussion held on 12th April, 2019 was Hon. Samia Suluhu Hassan, Vice President of the United Republic of Tanzania, represented by the Minister for Education, Science and Technology, Prof Joyce Ndalichako; launching of the week held on 10th April 2019 was done by Dr. Leonard Akwilapo, the Permanent Secretary for the Ministry of Education, Science and Technology.

2.0 Terms of Reference

According to the organizing committee's appointment letter, the committee was supposed to implement the following activities:

- (i) To propose activities to be conducted during the Sokoine Memorial Week.
- (ii) To identify an area appropriate for exhibitions.
- (iii) To develop plan of the programme.
- (iv) To execute all protocol arrangements within and outside the University in consultation with the SUA Management.
- (v) To prepare budget for the event.
- (vi) To prepare a cocktail party for guests and invited members who will participate in the high profile discussion, and
- (vii) To attend any other matters necessary for making the Sokoine Memorial Week successful as may be directed by the SUA Management.

3.0 Implementation Modality

The Colleges/school/directorates/departments/centres' committees were formed and proposed activities and exhibitions modality at a unit level. From each unit, one member was selected to participate in the University-wide organizing committee. Activities and budgets from the units were discussed at the University-wide committee meetings, refined and compiled. In addition, planning involved inviting stakeholders from outside the University, including SUA alumni, to display their

products and services. Invitations were sent out widely to various government and non-governmental organizations and individuals to visit the exhibitions. The plans were reported at various University Organs including the Committee of Principals, Deans and Directors (CoPD), Senate and the University Council. Each unit was given a space to display its technologies, products and services, and had exhibitors who were providing explanations to visitors touring the pavilions.

4.0 Activities of the Sokoine Memorial Week

Events covered during the week are briefly presented below.

4.1 Launching of the Sokoine Memorial Week

The Sokoine Memorial Week was launched by Dr. Leonard Akwilapo, Permanent Secretary for the Ministry of Education, Science and Technology on 10th April 2019. Marking the start of the Sokoine Memorial Week, the Guest of Honour toured the *model farm* (Photo 1) and exhibitions where he had an opportunity to see various technologies, innovations, products and services developed and/ or offered by SUA and private sector collaborators, and accordingly provided comments.



Photo 1: Permanent Secretary of the Ministry of Education, Science and Technology, Dr. Leonard Akwilapo (left) accompanied by Vice Chancellor of Sokoine University of Agriculture (SUA), Prof. Raphael Chibunda visiting the Model Farm before launching of the Sokoine Memorial Week 2019

After touring the *model farm* and the exhibitions (Photo 2 and 3), the guest of honour gave an opening speech along the event's theme, that was, "*Agricultural Productivity and Industrialization for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future*" (Appendix 3), the theme that is in line with Tanzania Development Vision 2025.



Photo 2: Director of SUA Pest Management Centre Dr. Ladslaus Mnyone explaining about “Cat Urine Odour Technology” developed at SUA to repel rodents from crop fields and houses

One of the issues that transpired during launching speech was the urge to ensure increasing agricultural productivity and industrialization in line with the 5th government priorities under the leadership of Hon. Dr. John Pombe Joseph Magufuli. The guest of honour commented that it is possible to increase productivity mainly through adoption of agricultural technologies, increased use of fertilizers, use of improved varieties, and adopting modern livestock keeping. *The guest of honour directed that SUA should strive to ensure that the technologies developed by researchers, academicians and students at the University are disseminated to farmers for use to improve agricultural productivity. Awareness of existence of the technologies can be created through mass media and other dissemination techniques.*

While agriculture is potential for poverty reduction in Tanzania, SUA is a key institution for the agricultural sector and has a role to play to increase agricultural productivity for poverty reduction because despite the government’s efforts to transform agriculture, productivity is low in the country. *For instance, by 2015, Tanzania’s rice yield was 671kg/ha compared to 6,500kg/ha in China.*

4.1.1 Promises from the Government of Tanzania

As an effort to increasing productivity, Dr. Akwilapo reported to the audience that the Government of Tanzania has promised to grant Tshs. 750 million to Sokoine University of Agriculture (SUA) through Education and Skills for Productive Jobs Programme (ESJP). This money should be used for the refurbishment of different workshops in the Department of Engineering Sciences and Technology at SUA. *He encouraged SUA staff and students to work hard towards realization of SUA and Tanzania's Development Vision 2025, in general.*

According to Dr. Akwilapo, *SUA has made and has potential to make significant contributions on the transformation of the country's agricultural sector from subsistence farming to modernization and commercialization.* He added that the decision of the government to provide that money for renovation of the workshops at the Department of Engineering Sciences and Technology at SUA aims at commemorating the Late Edward Moringe Sokoine by promoting industrialization in the country.

4.2 Exhibitions

4.2.1 SUA's exhibitors

In total, there were 29 units participated in the exhibitions, 17 from SUA and the rest were from outside SUA. The exhibitors displayed their technologies, products and services for four days consecutively from 9th to 12th April 2019. All colleges and the School of Agricultural Economics and Business Studies participated in the exhibitions. Directorates also participated including Directorate of Undergraduate Studies (DUS) and Directorate of Research, Postgraduate Studies, Technology Transfer and Consultancy (DRPTC). Other participants were Department of Communication and Marketing, SUA Pest Management Centre (SPMC), Institute of Continuing Education (ICE), Centre for Information and Communication Technology (CICT), Sokoine National Agricultural Library (SNAL), Department of Human Resources Management, SUA Hospital and Rural Development Volunteers Association (RDVA).

4.2.2 Non-SUA's exhibitors

Participants from outside the University were CRDB, NMB, Intermech Engineering, RECODA (Research, Community and Organizational Development Associates), Sustainable Agriculture Tanzania (SAT), Shambani Milk, Sokoine University Graduates Entrepreneurs Cooperative (SUGECO), Small Industries Development Organization (SIDO), Tanzania Horticulture Association (TAHA), Superdoll, Agricom and *Mtandao wa Vikundi vya Wakulima Tanzania* (MVIWATA).



Photo 3: SUA's Agricultural Extension Officer, Dr. Elias Mgembe, explaining about "plant and seed technology" to the guest of honour Dr. Akwilapo during Sokoine Memorial Week exhibitions 10th April 2019

Table 1: Some technologies, innovations, products and services showcased during Sokoine Memorial Week, 9th to 12th April 2019

S/N	College/school/directorate/department/centre	Technology, innovation, product or service showcased	Level of development	Challenges of developing the technology	Used/Expected time for a technology to be ready for use
1	SUA Pest Management Centre	<p>(i) Rodent Fertility Control Pills: This involves use of contraceptive hormones (e.g. quinestrol and levonorgestrel) to control reproduction of rodents by causing permanent or temporary sterility in males and females, reducing the number of offspring or impairing the fertility of offspring produced</p>	Under large scale field trial	None at the moment	2-3 years
		<p>(ii) Hermetic bags: These are special bags with single or double layers of nylon material, which prevent rodents from perceiving the smell of stored cereals, thus they leave the bags intact</p>	Initial prototype is already in the market. Large scale trials of improved prototypes underway	Inadequate funding, Affordability	1-2 years
		<p>(iii) Detection of pangolin scales using Giant rats: This approach involves accustoming rats with specific odour volatiles from pangolin shells so as they can be used to detect and protect (thereof) trafficked pangolin shells at the outlets/inlets. Most widely trafficked and endangered mammal in the world 2012-16:</p>	Semi-field trials	None so far	2 years (use on humanitarian basis)

		13,755 kg of scales seized, ~23,000 African pangolins. Preliminary results show that giant rats can successfully detect pangolin scales in any form			
		(iv) Detection of Tuberculosis using Giant rats: Involves detection of Tuberculosis specific odour volatiles from sick people. These rats can screen up to 150 samples within 20 minutes; a work that would require nearly 8 days using existing conventional methods	Scale up	Obtaining WHO permit and local registration (thereof) for deployment in routine diagnosis of TB	Already in use on humanitarian basis (69 TB clinics in Tanzania, 50 TB clinics in Ethiopia)
		(v) Cat Urine Odour: This technology involves the use of cat urine (crude extract or synthetic 'artificial cat urine') to repel rodents from the crop fields and houses	Prototyping and large scale trial	Inadequate funding	3-4 years
2	College of Veterinary Medicine and Biomedical Sciences	(i) Use of molecular tool (DNA barcoding) to identify bush meat and illegal hunting of elephant for the tusks. Identification of the samples is done using DNA barcoding to combat wildlife poaching	Developed	None so far	Ready on use
3	Solomon Mahlangu College of Science and Education	(i) Teaching/Learning materials: Preparation of T/L aids using locally available materials from the school-teacher-students environment	Preparatory (recording and shooting) testing stage	Inadequate funding	The technology is expected to be used in June 2019 as a pilot in Morogoro Municipality

		(ii) Development of Audio and Visual teaching materials (CDs) for secondary schools - Science Subjects			
		(iii) Simple, low cost methods for propagating edible oyster mushroom at small scale in an environmentally friendly manner	Trial stage	Infrastructure cost and market information	Three months
		(iv) GSM and SMS-RADAR based security system in buildings. The system works by sensing the presence of a person within the targeted area and send the information to a distant handset through SMS about the presence of a person in the area. From the SMS-information sent, one can take appropriate action should the sensed person be likely to interfere with safety in the building	Prototype	Inadequate funding	Depending on availability of funds, it can take 2-3 months
		(v) Medicinal/herbal syna soap and herbal products. Giant syna soap making using extracts from medicinal plants such as African milk bush (<i>Synadenium glaucescens</i> Pax) and natural oils (palm kernel, baobab, coconut, castor and olive oil)	Prototype, patenting and scale up	Market information	3 months

4	College of Social Sciences and Humanities	<p>(i) Rural Initiatives for Participatory Agricultural Transformation (RIPAT). Farmers from Kauzeni and Mzumbe wards organised through this approach demonstrated improved babana and orange fleshed sweet potatoes (OFSP) production.</p> <p>(ii) SUA Method This approach was designed and tested in Mbinga and Uluguru agro-ecological landscapes. It showcases important stages for organising and involving farmers to develop sustainable practices for livelihood improvement and environmental conservation. The stages includes understanding the realities, action research and implementation</p> <p>(iii) Rural Development Volunteers (Students') Association (RDVA). This association has been established by SUA students</p>	<p>Validation stage (it has been tested in Arusha, Singida, Tanga. It is now been tested in Uluguru lowland and mountainous areas)</p> <p>Validation stage</p>		
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		undertaking Rural Development degree programme. Members volunteer by providing services to the society in various development-oriented issues such as livelihoods improvement, environmental conservation, sanitation, humanitarian services, etc.	It is more than 5		
5	College of Agriculture	(i) Banana seedlings from tissue culture	Ready to use	Limited Funds	Ready to use
	Department of Crop Science and Horticulture	(ii) Bean seeds (SUA karanga)	Under certification procedures by TOSCI	Limited funds	6 months
		(iii) Rice seeds (Mwangaza)	Ready to use	Limited funds	Ready to use
		(iv) Plant disease diagnostic	Service is available and ready to use	Limited funds for buying consumables	Ready to use
	Department of Food Technology, Nutrition and Consumer Sciences	(v) Pre-cooked Instant Sorghum porridge flour also known as <i>Uji fasta</i>	Testing marketability to various stakeholders	Inadequate funding to support infrastructure for regular/steady flour production and	Ready on use

				conduct of marketing study	
		(vi) Development of household décor using locally available materials e.g. flower vases, artificial flowers, specialized pillows	Preparatory and testing of materials durability, acceptability, marketability	Inadequate time to explore and funding due to study/coursework obligations	1-2 years
		(vii) Fresh/natural juices made from fruit blends and vegetable-based sauces	Testing quality and marketability	Inadequate infrastructure to support bulk production	Ready on use
		(viii) SUA Lishe bread and scones	Testing marketability for bulk production	Inadequate infrastructure to meet national requirements for commercial production	Ready on use
		(ix) Assessment of nutritional status using body mass index (BMI) and counselling on healthy eating and life style	Developed	None	Ready on use
	Department of Animal, Aquaculture and Range Sciences	<p>(a) Aquaculture section The Section displayed two main activities:</p> <p>(i) Aquaponics System (ii) Fish feeds and ingredients.</p> <p>(b) Poultry section The Section displayed one main activity:</p> <p>(i) Improved Semi-intensive</p>	<p>(a) Aquaculture section -Available for use</p> <p>(b) Poultry section -Available for use</p>	<p>Insufficient funds and late fund receiving hampered the preparation process</p> <p>Small space for displaying the technologies caused</p>	<p>(a) Aquaculture section Need at least one month to make enough preparations</p> <p>(b) Poultry section Need at least two months to make</p>

		<p>system for chicken production</p> <p>(c) Range section The Section displayed three main activities:</p> <ul style="list-style-type: none"> (i) Pasture Establishment (ii) Silage making (iii) Hay making <p>(d) Rabbit section The Section displayed one activities:</p> <ul style="list-style-type: none"> (i) Management of different commercial rabbit breeds using simple cage system 	<p>(c) Range section -Available for use</p> <p>(d) Rabbit section Available for use</p>	<p>chaos to both exhibitors and visitors</p>	<p>enough preparations</p> <p>(c) Range section:</p> <ul style="list-style-type: none"> (i) Pasture establishment-need two months (ii) Silage making need three to six weeks (iii) Hay making need one week. <p>(d) Rabbit section Need two to three weeks to make enough preparations</p>
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4.3 Scientific Conference

Unlike previous years, this year's Sokoine Memorial Week included a scientific conference, which was conducted for two days consecutively between 10th and 11th April 2019. The theme for the conference was *“Transforming Agriculture and Natural Resources for Sustainable Development to Attain Industrial Economy in Tanzania”*. The number of keynote speeches and abstracts received for the conference is shown in Table 2.

Table 2: Abstracts/manuscripts received for scientific conference

S/N	Sub theme	Number of keynote speeches and abstracts received
1	Keynote speeches	5
2	Agro-processing and agro-ecology for food security and economic growth	33
3	Sustaining animal health and livestock productivity	18
4	Sustainable environment, natural resources management and tourism	18
5	Trade, socio-economic transformation for improved agricultural productivity and livelihood	41
6	Education for skills development and entrepreneurship	5
Total		115

The conference attracted abstracts and or manuscripts from SUA and outside SUA researchers particularly from University of Dar es Salaam (UDSM) and University of Dodoma (UDOM), including one from abroad. Out of the abstracts received (Table 2), 83% of the authors turned up for presentation. The conference was conducted in three parallel sessions. *This was an avenue for researchers, students and academicians to share and disseminate research results. It was also an opportunity for networking and therefore increasing visibility of SUA researchers and the University at large.*

The post conference activities include review of manuscripts, production of a conference proceeding followed by preparation and production of special issues in the journals hosted at SUA. This includes the Journal of Forestry and Nature Conservation, The East African Journal of Social Sciences and Humanities and Tanzania Journal of Agricultural Sciences. *In view of the high demand for the conference demonstrated this year, the Directorate of Postgraduate Studies, Research, Technology Transfer and Consultancy (DPRTC) is set to hold such conferences everytime, preferably during Sokoine Memorial Week to make the week more colourful. One of the anticipated challenges is possibly lack of enough funds. Even though, introducing a fee for conference participants can, at least, address the*

challenge to a large extent provided the conference attracts participants from all corners of Tanzania, Africa and outside Africa.

4.4 High Profile Discussion and Sokoine Memorial Lecture

On 12th April, Prof. Joyce Ndalichako, the Minister for Education, Science and Technology, presented a lecture to SUA community and the invited guests on agricultural productivity and industrialization. The speech (Photo 4) was preceded by a tour to exhibitions and high profile discussion. Based on the records, more than 600 people attended during high profile discussion, 17 were invited guests from Morogoro and outside Morogoro, and about 100 were secondary school students from within Morogoro Municipality.



Photo 4: The Minister for Education, Science and Technology, Prof. Joyce Ndalichako (Left) speaking during closing of Sokoine Memorial week at Sokoine University of Agriculture's Main Campus in Morogoro on 12th April, 2019

The high profile discussion was led by four keynote speakers (Table 3), two being from SUA, namely Prof. Amon Z. Mattee and Dr. Anna A. Temu, and two being those who worked with the Late Edward Moringe Sokoine, namely Paul Kimiti and Getrude I. Mongella.

Table 3: Sub-themes discussed during high profile discussion

S/N	Sub-theme	Keynote speakers
1	Contribution of the Late Edward Moringe Sokoine on Tanzania’s Development: historical perspectives	Paul Kimiti
2	Contribution of the Late Edward Moringe Sokoine on Agriculture and Industrialization: historical perspectives	Gertrude I. Mongella
3	Contribution of Agricultural Sector to the National Economy: contemporary issues	Prof. Amon Z. Mattee
4	Agricultural Entrepreneurship and Development	Dr. Anna A. Temu

The discussion began by brief presentations from each of the keynote speakers. While Kimiti and Mongella focused on the way they knew the Late Edward Moringe Sokoine and his efforts in promoting agriculture and industrialization, Prof. Mattee talked about contemporary issues regarding contribution of the agricultural sector on Tanzania’s economy, and Dr. Anna Temu talked about agricultural entrepreneurship and development. The presentations were followed by questions and contributions from the participants. The keynote speakers responded to the questions and finally provided concluding remarks based on the discussion.

4.4.1 Contemporary and historical issues for agriculture and industrialization in Tanzania

- (i) Participants contemplated and emphasized that in order to attain to this year’s theme of the Sokoine Memorial Week, it is important to ensure that the value chain in agriculture is working effectively from production, processing to when products are taken to the market. Success in industries highly depends on an effectively functioning value chain. What we learn from the Late Edward Moringe Sokoine is, despite of being a top government leader he made sure that enforcement of the value chain from the lowest level is implemented. For that matter, increasing productivity and processing of agricultural produce through small and or large scale industries is essential.
- (ii) Markets for agricultural produce are affected by seasonal production, which affects supply of industrial raw materials in the country that in turn can affect industrialization process.
- (iii) There is an increasing challenge of employing agricultural extension officers who are not committed to work. The Late Sokoine had suggested that **“as a country, we should have few extension officers who are truly committed and should ensure that they are well paid and provided with uniform and horses, provide them with training and retrench those who are not committed to the job”**. *Based on the quotation, SUA is well positioned to inculcate a sense of*

commitment among extension officers because it is the only long standing agricultural university in the country mandated for training agricultural extension officers.

- (iv) Agricultural activities are differentiated by gender in most societies including Tanzania. Women perform most of the activities relative to other gender groups. Mama Mongella commented: **“We need a complete revolution in agriculture so that women in Tanzania can benefit from agricultural technologies”**. In order to address this challenge, researchers at SUA and other institutions should develop agricultural technologies with a gender lens to liberate women.

4.4.2 Government’s efforts to improve agriculture

- (i) The Government of Tanzania (GoT) is struggling to improve agriculture in the country. For example, the Prime Minister, Hon. Kasim Majaliwa, is working to ensure that extension officers are transferred from district councils to the Ministry of Agriculture. Furthermore, the government is implementing Sustainable Development Goal 2 (SDG 2) focusing at *zero hunger*, and one of the interventions is to improve extension services.
- (ii) The Government of Tanzania (GoT) is committed to increasing agricultural productivity and has embarked on a journey to industrializing the economy. However, participants questioned declining government efforts to support Agricultural Secondary Schools, which are key to inculcating spirit of agricultural development among the students. In fact, participants suggested that agricultural secondary schools should be brought back because they were introduced deliberately to build foundation for agriculture.
- (iii) The Guest of Honour, Prof. Ndalichako, through her speech, also contributed to the high profile discussion. She started by extending greetings from Her Excellence Hon. Samia Suluhu Hassan, the Vice-President of the United Republic of Tanzania. Then, she went on explaining the ways the fifth Government under the Leadership of the Hon. Dr. John Pombe Joseph Magufuli is implementing the legacy of the Late Sokoine by fighting corruption and embezzlements of funds. She mentioned some of the government efforts to improve agriculture in the country to include: (i) supporting teaching agriculture, theoretically and practically, (ii) improving learning environments like building science laboratory capable of carrying 400 students at SUA, (iii) the government provided 7.5 billion Tanzania Shillings to the Sokoine University of Agriculture to construct laboratory and students’ hostel, (iv) COSTECH has provided 400 million at SUA to renovate soil laboratory, (v) during his visit at SUA in May 2018, the President of the United Republic of Tanzania, His Excellence Dr. John Pombe Joseph Magufuli offered 10 tractors

to the University. *With these government's efforts, SUA through its mandates, should ensure that it reaches the farmers.*

- (iv) The government is insisting change in mind set among civil servants, working with integrity, patriotism and commitment, which were the character of the Late Edward Moringe Sokoine. The Guest of Honour said: **“We are required to take examples that were set by the Late Sokoine through putting the nation first and not our self-interests”**.
- (v) About technical and agricultural secondary schools, the Guest of Honour reported that the government has spent 7 billion Tanzania Shillings to renovate seven technical schools and starting from next year 2020, such school will be offering technical trainings. The Guest of Honour directed that from January 2020, agricultural secondary schools will start offering specialized agricultural trainings. The government is also working to ensure that the use of ICT is introduced in secondary schools.
- (vi) Regarding the Government efforts to bring about industrial economy, the Guest of Honour informed that the Government offers trainings through different programmes and also encourages self-employments in agriculture (farming and livestock keeping). The government also provides loans to special groups including people with disabilities, women and youths. The Guest of Honour therefore urged the youth to organize themselves in groups in order to benefit from government's opportunities.

4.4.3 Directives from the Guests of Honour to SUA

- (i) SUA should strive to ensure that the technologies developed by researchers, academicians and students at the University are disseminated to the farmers to improve agricultural productivity.
- (ii) SUA staff should *“work hard”* towards realization of the University's vision, which is *“To be a leading University in the provision of quality knowledge and skills in agriculture and allied sciences”*. *This can be achieved through promotion of development in agriculture, natural resources and allied sectors through training, research and delivery of services.*
- (iii) SUA should take a leading role in inculcating a sense of commitment among graduates, especially extension officers, because it is the only long standing agricultural university in the country, which is mandated for training agricultural extension officers.
- (iv) Agricultural activities in Tanzania and elsewhere are differentiated by gender and women perform most of the activities relative to other gender groups. In order to address this challenge, researchers at SUA and other institutions

should develop agricultural technologies with a gender lens to liberate women particularly in agricultural communities.

- (v) The Government of Tanzania (GoT) provides loans to special groups including people with disabilities, women and youth. Therefore, youth should organize themselves in groups in order to benefit from Government's opportunities.

4.5 Hospital Services Department

During Sokoine Memorial Week, the Hospital Services Department at SUA offered education, counselling, testing and diagnoses services to some communicable and non-communicable diseases including hypertension, diabetes, benign of prostate hypertrophy, Body Mass Index (BMI) and HIV/AIDS voluntary testing counseling. This was in line with implementation of the SUA-CSP of 2016 – 2021 especially on the strategic objective number 7 that aims at reducing the impacts of AIDS, communicable and non-communicable diseases. These services were offered for free for 4 days consecutively between 9th and 12th April 2019 to anyone visited the pavilion and requested for any of the services. Table 4 summarizes services offered by the Hospital Services Department.

Table 4: Services offered by hospital department

S/N	Service	Beneficiaries	Positive results	Remarks
1	Hypertension	878 (43.6% women)	96(10.9%) had high blood pressure, and received counselling services	80% of those accessed the services were from SUA community (staff and students)
2	Diabetes	196	34(17.3%) had diabetes and received counselling services	56.6% of those accessed the services were from SUA community (staff and students)
3	HIV/AIDS voluntary testing and counseling	386	4(1%) had HIV. They were counseled and advised to visit SUA health center for further services	85.2% of those accessed the services were from SUA community (staff and students)
4	Testing Benign Prostate of Hypertrophy	16 (40 years and above)	3(18.8%) had indicators of the problem. counseled to visit SUA health center for further testing and treatment	
5	Heart diaseses and women problems (<i>uvimbe kwa akina mama</i>)	12	Received counselling services	

5.0 Achievements

(i) Publicity

The Sokoine Memorial Week provided an avenue for wider publicity of SUA technologies, products and services. Overall, the public responded well and, as a result of an increased awareness, some have started asking for some services from the University. For example, the Department of Soil and Geological Sciences has received calls from farmers seeking soil testing services. Publicity was ensured through the following:

Pre-Sokoine Memorial Week

- The Vice Chancellor, accompanied by the Chairman of the Sokoine Memorial Week Organizing Committee, advertised the event live through TBC1 and TBC Taifa. This was also an avenue to market the University.
- TV and radio programmes which covered pre-Sokoine Memorial Week included: radio advert through SUA FM (*Ijue SUA ya Leo*) and Abood FM; television advert through SUA TV and Abood TV.
- Social media used included WhatsApp and Facebook. These were used to share advertisements.
- SUA website was also used to share advertisements.
- Newspaper advertisement appeared through Habari Leo.
- The event was also advertised to the public within Morogoro Municipality through PA system.
- Banners hanged at various locations within Morogoro Municipality.
- Documents printed for public consumption included brochures, dialogue booklets, SUA flags and backdrop banner.

During and Post-Sokoine Memorial Week

- The high profile discussion conducted on 12th April, 2019 was covered live through TBC for 2 hours. This marketed and increased visibility of the University.
- Post-Sokoine Memorial Week live programmes were broadcasted through TBC1 and TBC Taifa, ITV and SUA online TV.
- Social media used included WhatsApp, youtube and Facebook. These were used to share news stories, pictures, video clips taken from various pavilions. *A total of 752 viewers viewed the event on youtube through SUA Website, and facebook viewers until 23rd May were 24,637.*
- SUA website was also used to share post-Sokoine Memorial Week news.
- At least seven post-Sokoine Memorial Week articles appeared in Habari Leo and Mwananchi newspapers.

(ii) Learning

The week offered an opportunity for members of the public to learn from research findings and other services offered by SUA. Researchers, students, academic and administrative staff were available to offer advisory services and explanations to visitors. Video clips, printed materials and various equipment were used to demonstrate SUA technologies, products and services. Recorded number of members of the public visiting each booth and learning through the exhibitions was above 1,500. For example, the number of visitors attended to by SNAL exhibitors was 1,126 of which 680 were males and 446 females while for the College of Veterinary Medicine and Biomedical Science, visitors attended were 1,500. Moreover, a good number received some information about SUA through newspapers, television, radio and social media, including facebook, youtube and whatsapp. Banners, posters, brochures and leaflets which were available during the week were also instrumental in disseminating the information about the University.

(iii) Inspiration to secondary school students

Students from different secondary schools toured the pavilions, and more 100 students from Morogoro Lutheran Junior Seminary, SUA and Mafiga Secondary Schools attended and participated during high profile discussion.

(iv) Community health services

The Hospital Services Department offered diagnosis and advisory services for free on different issues including Hypertension; Diabetes; Benign Prostate Hypertrophy; Breast cancer; Cervical cancer; Body Mass Index (BMI) and Nutrition Advisory; HIV Counseling and Testing, to mention few. The services were available for free four days between 9th and 12th April 2019.

(v) Reflection

The week provided an opportunity for the University to learn from various stakeholders regarding the extent to which the services offered meet the demand as well as the expectations of various stakeholders. Comments were raised in various pavilions as well as during the high profile discussion.

(vi) Promotion of SUA graduates and on-going students' innovations and activities

SUA graduates and on-going students participated as individual exhibitors. One of the graduates displayed leather products, another one forest products and

efficient semi-intensive chicken production technology. The on-going student displayed low cost drip irrigation technology.

(vii) Linkages and collaborations

Through the event, the University strengthened its linkages with other organizations. The following are cases in point:

- RECODA which has an MoU with SUA was one of the exhibitors
- SAT, SUGECO and Shambani Milk Limited have been initiated and are managed by SUA graduates and were actively involved in the event as exhibitors
- TAHA, whose Director is a SUA alumnus, participated as exhibitors
- RDVA, which is an association initiated by Bachelor of Rural Development Students, was one of the exhibitors and was able to attract 12 new members during the exhibition period, with some others (43) showing interest by collecting registration forms. Moreover, the students were able to demonstrate to the public one of their extracurricular activities which is intended to give them an opportunity to participate in development activities, though still on studies. One remarkable contribution of their participation in the exhibitions was the act of instilling volunteerism spirit among the youth. Secondary school students and SUA students benefited from the explanations from RDVA members regarding various initiatives they implement which are meant to instill volunteerism among the youth.
- Linkages with CRDB, NMB, Intermech Engineering, SIDO, Superdoll, Agricom and MVIWATA were also strengthened as these organizations participated fully in the exhibitions.

6.0 Evaluation

The committee was able to successfully implement its activities as per the terms of reference as summarized in Table 5.

Table 5: Accomplishment of the terms of reference

S/No	Terms of reference	Implementation
1	To propose activities to be held during the Sokoine Memorial week	Activities were proposed
2	To identify the area appropriate for exhibitions	Three options were deliberated upon during the committee meetings whereby one, that is, grounds near the Multipurpose Hall (one bordering the football pitch) at SUA Main Campus was chosen
3	To develop plan of the programme	Programme was developed
4	To execute all protocol	This was done and was successful. Dignitaries

	arrangements within and outside the University in consultation with the SUA Management	who participated in the event were contacted by the University, following the necessary protocol, well in advance
5	To prepare budget for the event	Budget was developed and shared with various University organs
6	To prepare a cocktail party for guests and selected members who participate in the high profile discussion	The activity was done well
7	To attend any other matters necessary for making the Sokoine Memorial week successful as may be directed by the SUA Management	A number of activities that deemed necessary were implemented as directed by the University Management

7.0 Problems and Challenges

- (i) Inadequate funds: SUA management increased budget for Sokoine Memorial from 80 Million in 2018 to 90 Million in 2019. However, this covered only 68% of the entire budget. Thus, some activities proposed earlier on, such as preparation of documentaries, were shelved because of inadequate funds. Also, the scientific conference did not get funds for reviewing and publishing manuscripts.
- (ii) Too short time allowed for touring the exhibitions by the Guest of Honour. As a result she did not visit some pavilions despite being fairly long awaited by the exhibitors. This is a recurrent challenge, even though; it is difficult for a guest of honour to visit all pavilions.
- (iii) Low morale of SUA staff to participate. Launching of the event on 10th April 2019 was attended by few SUA staff possibly because teaching activities were going on.

8.0 Conclusions

Sokoine Memorial Week 2019 was successful to a large extent, in terms of exhibitions, scientific conference, high profile discussion and health services. The Hospital Services Department, for example, accomplished the activities during the week in line with SUA CSP 2016/21. However, lack of adequate funding was a major obstacle to success. While the University Management is highly commended for facilitating the event and for improving on publicity (as compared to the past events), the organizing committee recommends doing more on awareness and promotion in order to attract more participants from wider coverage.

9.0 Recommendations and Opportunities for Future Engagements

The following is a synthesis of recommendations and opportunities for future from submissions by exhibitors within and outside SUA, visitors, and also from the organizing committee.

- (i) To address the challenge of inadequate funds, the Sokoine Memorial activities should be commercialized. Participants during scientific conference and outsider exhibitors should pay for their participation. SUA journals that benefit by getting papers for publication emanating from the event should also contribute.
- (ii) The organizing committee should prepare a plan in advance regarding pavilions that the guest of honour can visit because it is difficult to visit all pavilions.
- (iii) About low morale of SUA staff to participate, it is recommended that SUA leaders at all levels should sensitize and encourage staff to participate in the activities during Sokoine Memorial week. In addition, the SUA community should consider Sokoine Memorial Week part and parcel of her daily business, especially in the world of growing competition. The community needs to feel indebted to market her activities, technologies, products and services to attract demand and collaborations.
- (iv) The event saw more of SUA community and members of the public from Morogoro Municipality. The organizing committee should endeavour to attract more visitors. Doing more on awareness creation and promotion of the event would help. Also, it is important to invite more stakeholders especially from industry and agricultural sectors outside SUA to participate as exhibitors. To attract more visitors, the organizing committee should consider including, during the week, “*crowd puller activities*” such as college competitions on exhibitions, sports and games, and giving certificates of participation.
- (v) SUA researchers should consider writing books of interest to the public for sale during Sokoine Memorial Week. When visiting SNAL, some visitors inquired books on crop and livestock husbandry practices and about the Late Edward Moringe Sokoine’s history. In addition, SUA through Department of Communication and Marketing should consider preparing a documentary about the Late Sokoine: this includes writing book(s) about him and his legacy. On writing books, the College of Social Sciences and Humanities (CSSH) can consider conducting joint research between SUA, people who worked with the Late Sokoine and historians from other universities in Tanzania.
- (vi) SNAL should consider establishing a museum whereby the Late Sokoine’s information can be stored both for teaching and attracting tourists.

- (vii) SUA through Department of Communication and Marketing should consider procuring a good PA system that can be used during events like Sokoine Memorial Week instead of hiring, which is normally expensive.
- (viii) Exhibitors should ensure availability of Kiswahili versions of the brochures, posters and banners so as to ensure wider coverage in terms of people who can understand the messages put across.
- (ix) Although it is expensive, live coverage should include exhibitions in addition to the high profile discussion for marketing and visibility of SUA products and services.
- (x) The organizing committee should consider allowing secondary school students to participate more actively, for example by preparing songs or poems about the Late Edward Moringe Sokoine.
- (xi) Scientific conference bringing together researchers, academicians, students and other development stakeholders should be mandatory each year during Sokoine Memorial Week. Preparations for the conference should begin earlier including advertisements through mass media, newspapers, SUA website, SUA FM, other radios, televisions and social media. Deliberate invitations to apply should be made to include Universities and research institutions in Tanzania and outside the country. A fee should be introduced for participants. Such conference is potential for marketing SUA, increasing visibility, networking and partnership.
- (xii) Each year, a report on Sokoine Memorial Week should be published in print and online through SUA website for quick dissemination.
- (xiii) When patented, different departments at SUA should publicize their technologies through different outlets including mass media.
- (xiv) SUA, through Department of Engineering Sciences and Technology, should develop “*gender sensitive agricultural technologies*” that can help liberate women in agricultural communities in Tanzania, and thus contribute to moving the country to becoming industrial and middle income country by 2025.

Acknowledgements

We thank the Guest of Honour Prof. Joyce Ndalichako for a good work in addressing the SUA community and the general public during high profile discussion, and Dr. Leonard Akwilapo for launching of the Sokoine Memorial Week. We also thank the University Management for entrusting the planning activity to the Sokoine Memorial Week organizing committee, and for working hand in hand with the committee to ensure a successful event. We are grateful to the University management for supporting the event financially. We also extend our thanks to members of SUA community, students and collaborators including SUA projects for their support and participation. The SUA projects that supported the event financially include ACE II IRPM & BTM (MoEST), Building Stronger University (BSU) (DANIDA), Predict Project (USAID), Timbe rush (DANIDA) and IMLAF (DANIDA).

Appendix 1: Sokoine Memorial Week Organizing Committee Members

S/N	Name	College, School, directorate, Center or department
1	Dr. J.S Kabote	Chairman
2	Prof. V.C.K Silayo	Vice Chairman
3	Prof. Christopher Mahonge	CSSH - Representative
4	Dr. Emmanuel Malisa	DDS – Secretariat
5	Dr. Innocent Babili	ICE - Representative
6	Prof. S.W Chenyambuga	CoA - Representative
7	Dr. Claudius D. Luziga	College of Veterinary Medicine and Biomedical Sciences - Representative
8	Mr. Constantine Shio	College of Forestry, Wildlife and Tourism - Representative
9	Dr. Silvia Materu	Solomon Mahlangu College of Science and Education - Representative
10	Dr. Judith Valerian	School of Agricultural Economics and Business Studies - Representative
11	Jabir Jabir	SNAL- Representative
12	Dr. Abdul Katakweba	Pest Management Centre (SPMC) - Representative
13	Mr. Calvin E. Gwabara	SUA media
14	Dr. Nyambilila Amuri	Directorate of Postgraduate Studies, Research, Technology Transfer and Consultancy
15	Ms. Mariam L. Mwayela	Communication and Marketing

Co-opted Members

S.No	Name	Unit
1.	Mr. Clement Siwiti	Finance
2.	Mr. Marumbo	Estates and Works
3.	Mr. O. Mtunguja	Security
4.	Dr. O. Kaswi	Hospital Department
5.	Dr. Ayub Churi	CICT
6.	Mr. Peter Mwakiluma	CHRAO
7.	Dr. Suzan Augustino	DUS
8.	Prof. Kim A. Kayunze	CSSH
9.	Dr. Justus V. Nsenga	CSSH
10.	Mr. A. Mhandeni	CSSH
11.	Mr. David Muyenjwa	Procurement
12.	Mr. B.I. Kadago	Communication and Marketing

Appendix 2: Ratiba ya Wiki ya Maadhimisho ya Kumbukizi ya 16 ya Hayati Edward Moringe Sokoine Tarehe 9 Hadi 12, 2019

MUDA/SAA	TUKIO	MHUSIKA
Tarehe 7 hadi 8 Aprili 2019		
8.00 Mchana – 12.00 Jioni	Kuandaa maonesho	Kamati ya maandalizi na wadau wote
Tarehe 9 Aprili 2019		
2.00 Asubuhi hadi 12.00 Jioni	Maonesho na Huduma za Upimaji wa Afya na Ushauri	Wadau Wote
Tarehe 10 Aprili 2019 (Siku ya Ufunguzi)		
2.00-2.30 Asubuhi	Waoneshaji kufika sehemu ya maonesho	Waoneshaji
2.30-3.00 Asubuhi	Wanajumuiya kufika sehemu ya maonesho	Wanajumiya
3.00-3.15 Asubuhi	Mgeni rasmi kuwasili	Makamu Mkuu wa Chuo na viongozi wengine
3.15-3.30 Asubuhi	Mgeni rasmi kupokelewa na kutembelea shamba darasa	Makamu Mkuu wa Chuo na viongozi wengine
3.30-4.30 Asubuhi	Mgeni rasmi kutembelea mabanda ya maonesho	Makamu Mkuu wa Chuo na viongozi wengine
4.30-4.40 Asubuhi	Mgeni rasmi kuingia ukumbini	Makamu Mkuu wa Chuo na viongozi wengine
4.40-4.50 Asubuhi	Kumkaribisha Makamu Mkuu wa Chuo kutoa neno la ukaribisho, kutambua wageni na kuzungumza na wanajumuiya ya Chuo	Mwenyekiti wa Kamati ya Maandalizi
4.50-5.20 Asubuhi	Neno la ukaribisho na kuzungumza na wanajumuiya ya Chuo	Makamu Mkuu wa Chuo
5.20-5.35 Asubuhi	Balozi Joseph Sokoine Kuzungumza	Balozi Joseph Sokoine
5.35-5.40 Asubuhi	Makamu Mkuu wa Chuo kumkaribisha mgeni rasmi	Makamu Mkuu wa Chuo
5.40-6.20 Asubuhi	Mgeni rasmi kuzungumuza na wanajumuiya wa Chuo na kufungua rasmi wiki ya kumbukizi	Mgeni rasmi
6.20-6.35 Mchana	Neno la shukurani	Naibu Makamu Mkuu wa Chuo (Utawala na Fedha)
6.35 Mchana	Mgeni rasmi Kuondoka Ukumbini	Makamu Mkuu wa Chuo na viongozi wengine

6.35-12.00 jioni	Mkutano wa Kisayansi (Scientific Conference), Maonesho na Huduma za Upimaji wa Afya na Ushauri kuendelea	Kamati ya Maandalizi, Daktari Mkazi, Wanajumuiya ya SUA na Wadau Wote
Tarehe 11 Aprili 2019		
2.00 Asubuhi hadi 12.00 Jioni	Mkutano wa Kisayansi (Scientific Conference), Maonesho na Huduma za Upimaji wa Afya na Ushauri kuendelea	Kamati ya Maandalizi, Daktari Mkazi, Wanajumuiya ya SUA na Wadau Wote
Tarehe 12 Aprili 2019 (Siku ya Kufunga)		
2:30 – 3:00 Asubuhi	Wageni Kuwasili	Kamati ya Maandalizi/Mshereheshaji
3:00 – 3:30	Mgeni Rasmi kuwasili na kuweka jiwe la msingi kwenye ujenzi wa Maabara Mtambuka (Multipurpose Laboratory)	Makamu wa Rais/Waziri wa Elimu, Sayansi na Teknolojia na Makamu Mkuu wa Chuo
3.30-4.00 Asubuhi	Kutembelea shamba darasa	Mgeni rasmi, Makamu Mkuu wa Chuo/ Waziri wa Elimu, Sayansi na Teknolojia na Viongozi wengine
4.00 - 4:30 Asubuhi	Mgeni Rasmi kutembelea Mabanda ya Maonesho	Makamu Mkuu wa Chuo /Waziri wa Elimu, Sayansi na Teknolojia
4:30 - 4:45 Asubuhi	Mgeni Rasmi kuwasili Ukumbini	Makamu Mkuu wa Chuo
4:45 – 5.00 Asubuhi	Neno la utambulisho wa wageni na taarifa fupi ya Makamu Mkuu wa Chuo kuhusu Chuo na wiki ya Kumbukizi ya Hayati Edward Moringe Sokoine	Makamu Mkuu wa Chuo
5.00 – 6.00 Mchana	Wasilisho kutoka kwa Wachokoza Mada	Wachokoza Mada
6.00 – 7.00 Mchana	Michango kutoka kwa Washiriki	Washiriki Wote
7.00 – 7.20 Mchana	Mchango Maalum kutoka kwa Waziri wa Elimu, Sayansi na Teknolojia	Mhe. Waziri wa Elimu, Sayansi na Teknolojia
7.20 – 8.00 Mchana	Hotuba/Mhadhara wa kumbukumbu ya Hayati Edward Moringe Sokoine kutoka kwa Mgeni Rasmi	Mgeni Rasmi
8.00-8.10 Mchana	Neno la Shukrani	Naibu Makamu Mkuu wa Chuo (Taaluma)

Appendix 3: Launching speech delivered by the permanent secretary Ministry of Education, Science and Technology Dr. Leonard Akwilapo on 10th April, 2019

**AGRICULTURAL PRODUCTIVITY AND INDUSTRIALISATION FOR
TANZANIA'S DEVELOPMENT: LESSONS FROM THE LATE EDWARD
MORINGE SOKOINE AND PROSPECTS FOR THE FUTURE**

**OPENING SPEECH FOR COMMEMORATION OF THE LATE EDWARD
MORINGE SOKOINE, DELIVERED BY THE PERMANENT SECRETARY
MINISTER FOR EDUCATION, SCIENCE AND TECHNOLOGY, DR. LEONARD
AKWILAPO, AT THE MAIN CAMPUS, SOKOINE UNIVERSITY OF
AGRICULTURE, MOROGORO, ON WEDNESDAY 10TH APRIL 2019**

Prof. Raphael T. Chibunda, the Vice-Chancellor, Sokoine University of Agriculture;
Prof. Peter R. Gillah, the Deputy Vice-Chancellor (Academic), Sokoine University of Agriculture;
Prof. Frederick Kahimba, the Deputy Vice-Chancellor (Administration and Finance), Sokoine University of Agriculture;
Principals, Deans and Directors, Sokoine University of Agriculture;
Distinguished Stakeholders from the Agricultural Sector;
Representatives from Regional and Local Government Authorities;
Sponsors of the Conference & Exhibitions;
Representatives from Non-Governmental Organizations;
Media Partners and Press;
Distinguished Guests;
Conference Participants;
Ladies and Gentlemen.

First and foremost, I wholeheartedly thank the Management of Sokoine University of Agriculture for inviting me to be the Guest of Honour to officiate the opening ceremony of this year's commemoration of the Late Edward Moringe Sokoine. I consider the invitation to be a privilege and an honour to me to be associated with

the event of commemorating the great man of our nation, the Late Edward Moringe Sokoine.

The Late Edward Moringe Sokoine after whom Sokoine University of Agriculture (SUA) has been named was a no-nonsense man, a leader whose love and commitment to this country were unquestionable. Among the things he took serious for the national development were agricultural productivity and industrialisation.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

This year's theme for commemoration of the Late Edward Moringe Sokoine that is titled "*Agricultural Productivity and Industrialisation for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future*" is timely because it is related to our current national plans and to some of the strategies which the Late Edward Moringe Sokoine had for our national development.

Taking time to reflect on those strategies in the form of a commemoration like this one that you have organised gives us opportunities to learn from the past in order to improve our current and future plans to improve the strategies for agricultural productivity and industrialisation.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Before I talk of what the Late Edward Moringe Sokoine did about industrialisation and agricultural productivity for our country's development, let me talk briefly of the three main concepts that make this year's theme for commemoration of the Late Edward Moringe Sokoine—**agricultural productivity, industrialisation and Tanzania's development**— and give a brief history about the same issues in our country.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

About agricultural productivity, it is known that this concept is measured as the ratio of agricultural outputs to agricultural inputs. It is also known that such measurement can be done by comparing different outputs in terms of their amounts or market values to many different types of inputs such as labour and land. Such kind of measurement is partial measurement of productivity, unlike total factor productivity (TFP) whereby agricultural productivity is calculated by comparing an index of agricultural inputs to an index of outputs. In this speech I will talk more about partial measures of productivity, particularly with respect to yield of agricultural products.

Agricultural productivity is enhanced by various factors, the main ones of which are agricultural mechanisation, high yield varieties; fertilisers and other agro-chemicals including pesticides and herbicides, education, irrigation, genetic engineering, optimum plant density, animal feeds made more digestible by processing, and keeping animals intensively. Where these aspects are used optimally, agricultural productivity is normally higher than where they are not used at all or where they are not well used.

Agricultural productivity has a lot of advantages; including getting more food, income from local and international markets, and raw materials for agro-processing industries thereby contributing to poverty alleviation. However, increase in agricultural productivity should not be compromised with sustainability and sustainable development; it should be done with strategies to ensure that future generations will also have the resources they will need to live decent lives. However, our overall agricultural productivity (% growth) is still low (3.3% in 2015 as reported in our Five-Year Development Plan document of 2016/17 – 2020/21, but our plan, as stipulated in the same document, is to raise it to at least 4.0% by 2025. With respect to production per unit area of land cultivated, we also still have low yields; for example, according to the World Bank's collection of development indicators, compiled from officially recognized sources, Tanzania's rice yield in 2011 was 671 kg

per hectare, while China that is the world's largest producer of rice recorded about 6,500 kg per hectare.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Coming to industrialisation, the concept can be defined as a process by which an economy is transformed from being primarily agricultural to one based on manufacturing of goods, individual manual labour is replaced by mechanised mass production, and craftsmen are replaced by assembly lines.

Industrialisation plays many roles in a nation's socio-economic development process. These roles include increasing productivity, absorbing labour force, promoting savings, boosting the process of capital accumulation, offering higher investment opportunities, and increasing economies of scope making countries that are able to produce more varieties of goods becoming far more likely to undergo rapid economic growth.

In view of those advantages and others not listed here, industrialisation has been included in the Sustainable Development Goals, as Goal Number 9 (Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation), unlike in the previous 8 Millennium Development Goals where it was not included.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

The third one of the three concepts in the theme of this year's commemoration of the Late Edward Moringe Sokoine is Tanzania's development. Development is a multi-dimensional concept whose precise definition is hard to coin, but any positive change, particularly in socio-economic well-being, could be regarded as development. Using indicators of various positive changes is easier than defining the term development. In the context of the theme of this year's commemoration of the Late

Edward Moringe Sokoine, I am talking of development in terms of Tanzania's Development Vision 2025 (TDV 2025). Therefore, the Tanzania's development I am talking about is high quality livelihood, peace, stability and unity, good governance, a well-educated and learned society, and a competitive economy capable of producing sustainable growth and shared benefits, as outlined in the TDV 2025 document. Besides those indicators, to realise Tanzania's development, gross national income (GNI) has to be consistent with that of a middle income country, which is US \$1,045 to 4,124 for low middle income countries and US \$ 4,125 to 12,734 for high middle income countries, unlike high income countries whose GNI is US \$12,735 and higher, all in 2016 prices, as specified in the World Bank's Policy Research Working Paper Number 7528 of January 2016.

Mr. Vice Chancellor,

Ladies and gentlemen,

Industrialisation and agricultural productivity are interlinked, and the linkages are reciprocal. For example, the industrial revolutions that occurred in Europe and in Northern America in the 18th and 19th centuries respectively were much brought about by increased agricultural productivity from which some of the capital was obtained for establishment of industries. In turn, the factories produced more modern tools, equipment and agrochemicals for higher agricultural productivity.

Mr. Chancellor,

Ladies and gentlemen,

After talking about the three main concepts in the title for this year's commemoration of the Late Edward Moringe, now I am going to talk briefly about what our Government has done about them.

With regard to agriculture in general, and agricultural productivity specifically, we have had good plans in terms of policies and strategies since we gained our political Independence. For instance, the post-independence period (1961-1967) was marked by an emphasis on improved peasant farming through extension services and

provision of credit and marketing structures; the 1983 agriculture policy recognised the need to support both the smallholder and the large scale sector, and explicitly stated that it would be wrong to promote agricultural growth at the expense of villagers; and the 1997 Agricultural and Livestock Policy focused more on commercialisation of agriculture so as to increase income levels. The National Agriculture Policy of 2013 was formulated with the objective to develop an efficient, competitive and profitable agricultural industry that contributes to the improvement of the livelihoods of Tanzanians and attainment of broad based economic growth and poverty alleviation. These focuses and objectives are stated in the policies mentioned above.

The history of industrialisation in Tanzania can be traced before the First World War (WWI) when German colonizers established a company called the German East Africa Company in the current Mainland Tanzania, with primary focus on manufacturing low value, labour-intensive agricultural goods. Under the British colonial rule, local investment in the manufacturing sector was discouraged in spite of its already low levels. In the later years of the British rule, particularly after the Second World War (WWII), the industrial sector began to receive concerted attention from the then administrators; efforts started to be put into the production of primary products such as cotton, sisal, and tobacco for export and replacing imported ones. That kind of manufacturing was called import substitution industrialisation (ISI) and was mainly about processing simple consumer goods.

After gaining political Independence in 1961, between 1961 and 1967, industrial development in Tanzania was defined in the three-year development plan (TYP) for 1961–4 and in the First Five-year Plan (FFYP) for 1964–9. The TYP aimed at promoting growth mainly through increasing investment in activities which were expected to bring quick and high returns. The TYP and FFYP shared the broad objective of raising per capita incomes, attaining full self-sufficiency in trained manpower, increasing the number of wage earners, and raising life expectancy by 1980. There was success; for instance, there was a 50 per cent increase in the number of manufacturing establishments between 1961 and 1965, and the GDP share of manufacturing value added increased from around 8.4 per cent in 1964 to

10.2 per cent in 1967 as reported by BoT in 1982 and by the Bureau of Statistics in 1978.

The Second Five-year Plan (SFYP) of 1969–74 attempted to bridge disconnection between industrial development and rural development through nationalisation of the internal wholesale trade in 1971. This forced manufacturers to sell specified goods to and purchase inputs from the State Trading Corporation (STC). This led to a decline in the size of the private sector and an increase in the number of publicly owned establishments. By 1973, the public sector's contribution to GDP had risen to 32 per cent from 5 per cent in 1966 (Szirmai and Lapperre, 2001) and in 1973 accounted for 46.7 per cent (up from 15.5 per cent in 1967) of all total manufacturing employment (Skarstein and Wangwe 1986). The increased role of the state in that era was accompanied by an increase in GDP share of manufacturing as well as gross manufacturing value added. Between 1967 and 1973, Tanzania recorded the most rapid growth of manufacturing value added (for enterprises employing ten or more personnel) in its history.

In spite of the successes of industrialisation during the Second Five-Year Plan, it failed to improve the absorption capacity of technology transfers. Therefore, a long-term industrial strategy covering twenty years (1975–95), was formulated with the goals to attain growth, structural change, employment, income distribution, regional distribution, worker participation, and self-reliance. This long-term strategy aimed at increasing the relative importance of the manufacturing sector and reducing dependence on imports so as to achieve the seven national goals which were increasing industrial growth, structural changes, employment generation, income distribution, regional distribution, workers' participation, and self-reliance.

In 1987, the government established the Tanzania Industrial Research Development Organization (TIRDO), with the intention of conducting industrial research and offering consultancy services to industry. TIRDO was formed with expectations to promote technology utilization and use of local resources.

The long-term industrial strategy failed to improve export performance; by 1990, the level of recorded merchandise exports had increased, but at a decreasing rate which was far below that of 1981 (Msami and Wangwe, 2016).

In 1996, a twenty-five-year Sustainable Industrial Development Policy for Tanzania (SIDP2020) began to be implemented with the aim of enhancing sustainable development of the industrial sector with the aim to achieve sustainable industrial sector growth in order to create favourable levels of employment, economic transformation, equitable development, substitute imports, and promote exports.

To supplement efforts required to attain SIDP goals, the Export Processing Zones (EPZ) Act was established in April 2002, and its implementation effectively started in March 2003 with the objectives to attract and promote investment for an export-led industrialization, to increase foreign exchange earnings, to create and increase employment opportunities, to attract and encourage transfer of new technology, and to promote the processing of local raw materials for export (value addition).

In June 2010, an Integrated Industrial Development Strategy (IIDS) 2025 was also adopted in order to promote efforts to achieve the SIDP goal of bringing the economy to a state of sustainable industrial development. The IIDS 2025 was formulated with the objective to provide concrete strategies to implement SIDP 2020 and build a competitive industry by establishing a competitive business environment and improving existing development corridors—concentrated infrastructure development and promoting agriculture-led industrialisation. The strategy targeted six sub-sectors, namely agro-processing, textiles, leather, fertilizer and chemicals, light machinery, and iron and steel.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Tanzania's Government efforts to promote industrialisation for national development do not end there. We all know that the National Five-Year Development Plan Phase II (FYDP II) of 2016/17 – 2020/21, whose motto is

“Nurturing Industrialization for Economic Transformation and Human Development”, with the main objective of enhancing the pace of progress towards the Tanzania Development Vision 2025, stipulates Industrial development targets to be attained by 2025. They include the manufacturing subsector contributing 18.0% to the GDP by 2025 from 5.2% in 2015 and the mining sector contributing 4.6% to the GDP in 2025/26 from 3.4% in 2014/15.

For information, we also have Tanzania’s Industrialisation Journey 2016 – 2056 for which our President, Dr. John Pombe Joseph Magufuli, in the Foreword of the document, states the following: ***“Industrialisation is, therefore, an essential and central component of a wider nation-building project of the modern Tanzanian state to which I have dedicated my presidency. My Government’s objective is to propel the country and its people to higher standards of living (High Middle Income Status by 2036 and to catch up with the developed world by 2066”***.

Mr. Vice Chancellor,
Ladies and gentlemen,

When I was talking about Tanzania’s development indicators a while ago, I said that my view of development is within the context of Tanzania Development Vision 2025 (TDV 2025). With respect to high quality livelihood, life expectancy has increased from 52 years between 1990 and 1997 to 66.7 years in 2017, according to the revised World Population Prospects 2017 report that was released by the United Nations Department of Economic and Social Affairs Population Division in 2017. With regard to Tanzania being a well-educated and learned society, the Government’s decision to provide free education at the primary and ordinary secondary school levels since January 2016 is a good step towards having a well-educated and learned society. With respect to having a competitive economy capable of producing sustainable growth and shared benefits, during the time of implementation of the First Five-Year Development Plan (FYDP I) and the Second Phase of National Strategy for Growth and Reduction of Poverty (MKUKUTA II), both during the fiscal years 2010/11 - 2015/16, Tanzania’s economy recorded an annual average growth rate of 7%, and about that level has been maintained, which is well above

Africa's average annual economic growth that was 4.6% from 2000 and 2016. With respect to gross national income (GNI), Tanzania's GNI per capita income rose from US\$ 749.3 in 2010 to US\$ 1,043 in 2014, which implies that Tanzania is almost becoming a middle economy country as compared to the minimum GNI per capita that is required for a country to be regarded as a middle-income country, which is US\$ 1,045.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

My aim in this short speech is not to talk about current and future plans for agricultural productivity, and industrialisation and Tanzania's development because someone senior to me will talk about them before the end of this year's commemoration. I have confined my speech to historical backgrounds with respect to the three concepts of this year's theme for the commemoration of the Late Edward Moringe Sokoine in order to remind the participants of this year's commemoration and Tanzanians in general to guide the open dialogue and discussions to be held in this commemoration.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

After talking about the concepts of agricultural productivity, industrialisation, and Tanzania's development conceptually, historically, linkages among them and efforts that our Government has made to improve them, now I am going to talk about what the Late Edward Moringe Sokoine did on them.

**Mr. Vice Chancellor,
Ladies and Gentlemen,**

The Late Edward Moringe Sokoine was born in 1938 in Monduli, Tanzania, and was the Prime Minister of Tanzania twice from 13th February 1977 to 5th November 1980 and from 24th February 1983 to 12th April 1984. He passed away in a car accident on

12th April 1984 at Dakawa in Morogoro while he was travelling from Dodoma to Dar es Salaam.

**Mr. Vice Chancellor,
Ladies and Gentlemen,**

As the Prime Minister of Tanzania, the Late Edward Moringe Sokoine led this country with a sense of responsibility, accountability and a very high level of commitment. He was among the greatest patriots this country has ever had, a man of great character and a leader dedicated to the development of his people and of the country as a whole. It is 35 years today since we lost that true son of our soil. In commemorating him, we have all reasons to reflect on his thoughts which contributed to building the foundation for economic development in the country.

Those who knew the Late Edward Moringe Sokoine remember that he was a visionary leader, and a man of standards and action. These attributes were indicated by his hard work, tireless efforts and commitment to the development of Tanzania.

According to Professor Issa G. Shivji, during the third Sokoine Memorial Lecture, which he delivered here at SUA on 16th April 1993, there were four major elements in the thought of the Late Edward Moringe Sokoine related to our country's development. These are: (1) National Independence, (2) Food Self-sufficiency, (3) National Market, and (4) Investment in agriculture and pastoralism.

**Mr. Vice Chancellor,
Ladies and Gentlemen,**

Three of the four above elements that the Late Edward Moringe Sokoine emphasised on for the national development are related to the theme of this year's commemoration of the Late Edward Moringe Sokoine that is food self-sufficiency, national market and investment in agriculture and pastoralism.

About food self-sufficiency, the Late Sokoine was a great advocate of producing sufficient food for the country; hence he constantly emphasised on modernisation and development of agriculture and pastoralism. His vision of food self-sufficiency was national. Increasing food self-sufficiency would definitely come from increased agricultural and livestock productivity, which would be enhanced by agro-industrialisation. Moreover, national market for our products would be better if we processed our products, a thing which would need industrialisation to produce highly and add value to the products.

Regarding investment in agriculture and pastoralism, the Late Sokoine emphasised on such things as modernising agriculture and pastoralism; creating market for pastoral products; sending technology and experts to villages and even encouraging people with money to invest in agriculture.

**Mr. Vice Chancellor,
Ladies and Gentlemen,**

Thinking deeply of the above things that the Late Sokoine strove to advance for our national development, one finds that in various ways our current efforts to develop our country reflect what our great patriotic leader, the Late Hon. Edward Moringe Sokoine, desired to achieve. That is why we are honouring him by remembering his initiatives, and I believe it is for that reason that I have been asked to speak about "*Agricultural Productivity and Industrialisation for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future*". Increasing agricultural productivity and industrialisation rationally has high potential to enable us develop and attain our national development vision to become a middle income country by 2025.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

To conclude my speech, I say that Tanzania's determination to attain the socio-economic development status of a low middle income country by 2025 will depend on

our good plans about industrialisation and agricultural productivity and optimal implementation of the same plans, among other things. SUA as a University which is at the forefront of training manpower to increase agricultural productivity through agro-industrialisation has a big role to play for Tanzania to realise the plans to increase agricultural productivity and agro-industrialisation. I urge you, staff and students, to play well your roles towards that end.

I wish all of you technically sound discussions in the dialogue that follows good presentations and discussions of the papers in the scientific conference that you are holding, and good plans for the future in view of all the outcomes of this year's commemoration of the Late Edward Moringe Sokoine.

It is my pleasure to declare this year's four-day commemoration of Edward Moringe Sokoine open.

THANK YOU FOR LISTENING TO ME

Appendix 4: Closing speech delivered by her excellence Minister for Education, Science and Technology Prof. Joyce Ndalichako on 12th April, 2019

**AGRICULTURAL PRODUCTIVITY AND INDUSTRIALISATION FOR
TANZANIA'S DEVELOPMENT: LESSONS FROM THE LATE EDWARD
MORINGE SOKOINE AND PROSPECTS FOR THE FUTURE**

**CLOSING SPEECH FOR COMMEMORATION OF THE LATE EDWARD
MORINGE SOKOINE, DELIVERED BY HER EXCELLENCE MINISTER FOR
EDUCATION, SCIENCE AND TECHNOLOGY, PROF. JOYCE NDALICHAKO AT
THE MAIN CAMPUS, SOKOINE UNIVERSITY OF AGRICULTURE,
MOROGORO, FRIDAY 12TH APRIL 2019**

Prof. Raphael T. Chibunda, Vice-Chancellor, Sokoine University of Agriculture;
Prof. Peter R. Gillah, Deputy Vice-Chancellor (Academic), Sokoine University of
Agriculture;
Prof. Frederick Kahimba, Deputy Vice-Chancellor (Administration and Finance),
Sokoine University of Agriculture;
Principals, Deans and Directors, Sokoine University of Agriculture;
Keynote Speakers;
Distinguished Stakeholders from the Agricultural Sector;
Representatives from Regional and Local Government Authorities;
Sponsors of the Conference & Exhibitions;
Representatives from Non-Governmental Organizations;
Media Partners and Press;
Distinguished Guests;
Conference Participants;
Ladies and Gentlemen.

First and foremost, I would like to thank the Management of Sokoine University of
Agriculture for inviting me to be the Guest of Honour to officiate the closing
ceremony of this year's commemoration of the Late Edward Moringe Sokoine.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

This year's theme for commemoration of the Late Edward Moringe Sokoine that is titled "*Agricultural Productivity and Industrialisation for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future*" is timely because it is related to our current national plans and to some of the strategies which the Late Edward Moringe Sokoine had for our national development.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Before I talk about what the Late Edward Moringe Sokoine did about industrialisation and agricultural productivity for our country's development, let me talk briefly about the current plans of the Fifth Government that is led by His Excellence Dr. John Pombe Joseph Magufuli, particularly with respect to the three main concepts that make this year's theme for commemoration of the Late Edward Moringe Sokoine—agricultural productivity, industrialisation and Tanzania's development.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Agriculture—in its broad sense of crop, livestock, fishery and forestry production systems—is a back bone of our economy because it is very important as it provides employment to most people in our country; it is the source of food and raw materials for some industries; it generates foreign exchange which is necessary to import various goods; and it generates savings that can be used for capital to finance industrialisation, among other things. The agricultural sector in Tanzania provides about 66.9% of employment and accounts for about 23% of GDP, 30% of exports and 65% of inputs to the industrial sector, as documented in the National Five-Year Development of 2016/17- 2020/21.

Although agriculture is so important, its productivity is low, for example our overall agricultural productivity (% growth) was still low (3.3%) in 2015 as reported in our

Five-Year Development Plan document of 2016/17- 2020/21. Moreover, our overall real agricultural growth rate (%) in 2015 was still 3.4% while Africa's agricultural growth rate improved after 2005 to about 7% (2017) per annum in 2017. That growth rate of 3.4% per annum was much lower than the growth rate of 6.0% recommended by Maputo and Malabo Declarations for effectiveness of the agricultural sector. Therefore, the Government has plans to increase the growth rate to 13.1% and the agricultural productivity (% growth) to 4.0% by 2025 as stipulated in the Five-Year Development Plan document. Not only that, but also the Agricultural Sector Development Programme Phase II (2016/17- 2015/26) stipulates enhanced agricultural productivity and profitability strategies, specifically about improved agricultural research, improved extension services, and improved access to agricultural inputs. The strategies to improve agriculture in those ways are based on Government's understanding of the facts that agricultural productivity is enhanced by various factors, the main ones of which are agricultural mechanisation, high yield varieties, fertilisers and other agro-chemicals including pesticides and herbicides, education, irrigation, genetic engineering, optimum plant density, animal feeds made more digestible by processing, and keeping animals intensively.

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Coming to industrialisation, the Government is very well aware that industrialisation plays many roles in a nation's socio-economic development process, which include increasing productivity, absorbing labour force, promoting savings, boosting the process of capital accumulation, offering higher investment opportunities, and increasing economies of scope making countries that are able to produce more varieties of goods becoming far more likely to undergo rapid economic growth.

In spite of that importance of industrialisation, our level of industrialisation is low. For example, as indicated in the National Five-Year Development Plan (2016/17- 2020/21), the contribution of the manufacturing sub-sector to GDP (at current prices) was 5.2% in 2015 while the real growth rate (%) of the same sub-sector was

6.5% in the same year. The Government plans to raise them to 18.0% and 12.2% respectively by 2025 as shown in the National Five-Year Development Plan (2016/17- 2020/21).

The contribution of the mining sector to the GDP at current prices (%) was 3.4% in 2014/15, and the Government plans to raise it to at least 4.6% by 2025/26. The contribution of the construction sub-sector to the GDP was 10.4% in 2014/15, and the Government plans to raise it to at least 11.8% by 2025/26 as shown in the National Five-Year Development Plan (2016/17-2020/21).

**Mr. Vice Chancellor,
Ladies and gentlemen,**

Those are not the only plans for improving industrialisation in our country; we also have *Tanzania's Industrialisation Journey 2016 – 2056* for which our President, Dr. John Pombe Joseph Magufuli, in the Foreword of the document, states the following: *“Industrialisation is ... an essential and central component of a wider nation-building project of the modern Tanzanian state to which I have dedicated my presidency. My Government's objective is to propel the country and its people to higher standards of living (High Middle Income Status by 2036 and to catch up with the developed world by 2066”*.

During the first 20 years of Tanzania's Industrialisation Journey 2016 – 2056, the main focus of industrialisation is planned to be following industries:

1. Garments, textiles and footwear;
2. Iron and steel, metal products, light machinery and equipment;
3. Electronics assembly;
4. Food processing, agro-processing, fisheries (particularly fisheries/aquaculture, soybeans, palm oil, sunflower oil, cotton-seed oil, sugar, wheat and rice at an industrial scale, and mass consumer goods);
5. Construction industry and materials;
6. Solar and other renewable energy;
7. Lithium-ion batteries and electric car; and

8. Mineral processing and other value-adding industrial activities

Mr. Vice Chancellor,

Ladies and gentlemen,

About Tanzania's development, we have clearly defined our indicators of development in our national Development Vision. These are high quality livelihood, peace, stability and unity, good governance, a well-educated and learned society, and a competitive economy capable of producing sustainable growth and shared benefits, as outlined in the TDV 2025 document. Besides those indicators, to realise Tanzania's development, gross national income (GNI) has to be consistent with that of a middle income country, which is US \$1,045 to 4,124 for low middle income countries and US \$ 4,125 to 12,734 for high middle income countries, unlike high income countries whose GNI is US \$12,735 and higher, all in 2016 prices, as specified in the World Bank's Policy Research Working Paper Number 7528 of January 2016.

We are not dreaming by saying that we are going to be a middle income country by 2025; in 2014 we were almost there. While to become a middle income country one needs a gross national income (GNI) of at least US \$ 1,045 per capita per year, we attained a GNI of USD 1,043 in 2014, although the GNI declined in subsequent years.

Mr. Vice Chancellor,

Ladies and gentlemen,

After talking about the plans that the Fifth Government has in order to bring about Tanzania's through improvement in agricultural productivity and industrialisation, now I am going to talk briefly about what the Late Edward Moringe Sokoine about them.

Mr. Chancellor,

Ladies and Gentlemen,

There were four major elements in the thought of the Late Edward Moringe Sokoine which are related to our country's development. These are: (1) National Independence, (2) Food Self-sufficiency, (3) National Market, and (4) Investment in agriculture and pastoralism.

**Mr. Chancellor,
Ladies and Gentlemen,**

Three of the four above elements that the Late Edward Moringe Sokoine emphasised on for the national development are related to the theme of this year's commemoration of the Late Edward Moringe Sokoine that is food self-sufficiency, national market and investment in agriculture and pastoralism.

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**Mr. Chancellor,
Ladies and Gentlemen,**

Thinking carefully about the above things that the Late Sokoine strove to advance for our national development, one finds that in various ways our current efforts to develop our country reflect what our great patriotic leader, the Late Hon. Edward Moringe Sokoine, desired to achieve. That is why we are honouring him by remembering his initiatives, and I believe it is for that reason that I have been asked to speak about "*Agricultural Productivity and Industrialisation for Tanzania's Development: Lessons from the Late Edward Moringe Sokoine and Prospects for the Future*". Increasing agricultural productivity and industrialisation rationally has high potential to enable us develop and attain our national development vision to become a middle income country by 2025.

**Mr. Chancellor,
Ladies and gentlemen,**

Before I finish my speech, I take this opportunity to remind you and all Tanzanians in general to pay high attention to environmental issues in all your activities to increase agricultural productivity and industrialisation. This will enable us to avoid compromising our current development endeavours with future generations' ability to obtain their needs.

Now, I am happy to declare this year's four-day commemoration of Edward Moringe Sokoine closed.

THANK YOU FOR LISTENING TO ME.



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