

# CHALLENGES FACING AGRICULTURAL HIGHER EDUCATION TRAINING AND INNOVATIONS IN TANZANIA: A CASE OF SOKOINE UNIVERSITY OF AGRICULTURE

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## **ABSTRACT**

*Market-driven agriculture and agricultural innovation systems place new demands on the knowledge and skills of agriculture. However there is a big challenge in trying to increase the quantity and quality of experts at tertiary level to meet this demand in most African countries. For example in Tanzania there has been tremendous increase in student enrollments in higher learning institution in the last 10 years, but the distribution of students seems to be skewed to arts and humanities degree programmes at the expense of science and agriculture. This paper highlights some of the possible causes of this phenomenon. Although science and agriculture may have low financial return at an individual level their impact at societal level might be great. It can be deduced that if this trend continues unabated the shortage of experts in the field of agriculture will cost the country dearly in terms of importing expatriates. It is therefore recommended that in view of the immense importance of agriculture to the attainment of the country's economic development agriculture should be accorded a "special and strategic national manpower needs" status. The Government should provide incentives for bright students to study science and agriculture by offering sponsorship to outstanding students at both undergraduate and postgraduate level. The criterion for sponsorship should be demonstrable desire to become a farmer, to work with farmers, and to help farmers. Those who receive sponsorship should sign a special contract to work in the field of agriculture for a specified period. Also, special remuneration package should be established for those working in the field of agriculture in order to provide incentive for prospective students in high schools to join science and agriculture; and the government and civic society organizations should embark on a massive campaign to destigmatize agriculture.*

## **1.0 INTRODUCTION**

### **1.1 Background**

In Tanzania, the agricultural sector contributes up to about a third of the gross domestic product, and much more through linkages with manufacturing, distribution and service-related sectors. Moreover, a large proportion of the population lives in rural areas and depends mainly on agriculture for livelihood. The country has substantial potentials to achieve faster and diversified economic growth necessary to raise welfare of her people. But Tanzania is experiencing development problems. The economy is characterized by large share of agricultural goods, predominance of primary exports, low degree of industrialisation and of economic diversification, high population growth rate, and high level of indebtedness. These problems are manifested in poverty as indicated by low income per capita, hunger, diseases, and low life expectancy. Escaping from these economic hooks, and creating sustainable development has been a dream of the government since independence. However, so far little has been achieved towards this goal.

The Poverty and Human Development Report 2007, indicate that, in terms of growth in real GDP per capita, poverty in Tanzania has declined by 39 percent between 2001 and 2007. However, the proportion of the population that cannot meet their daily basic needs has declined by only 2.4 percent from 35.7 to 33.3 percent during the same period. At the same time, the number of people living in poverty has increased by 1.0 million people from 11.7 million. This happened because the reduction in the percent of poor people was insufficient to compensate for the increase in the population, which has been growing at a rate of about 2.6 percent per year.

Although poverty affects both urban and rural people, it is those leaving in the rural areas of the country who are hit hard. For example, between 1991 and 2007 the percent of population living below basic needs poverty line in the capital city of Dar es Salaam decreased from 28.1 percent to 16.2 percent, while in the rural areas the decrease was very marginal, from 40.8 to 37.4 percent. This accentuates the notion that poverty is basically a rural phenomenon.

Based on this trend the Millennium Development Goal (MDG) and the National Strategy for Economic Growth and Poverty Reduction (NSEGPR) target of reducing poverty to 19% by 2015 and 2010 respectively will be missed. This observation is an eye opener on the likely failure of whatever model pursued by government and its development partners to achieve economy growth through agriculture. Countries that were, more or less, at equal footing with Tanzania at the time of independence in the 1960s have tremendously transformed their economies.

To have a significant contribution to economic development, agriculture should be modernized by being transformed from predominantly home-consumption oriented farm units to more specialized, productive and market oriented enterprises. The modernization process requires substantially increasing the total output and productivity in a manner that will directly benefit the average small producers while providing sufficient food surplus to support a growing urban industrial sector (Farris, 1983). In order to address the challenges facing agriculture in the country, there is a need for increasing trained manpower which would apply science and technology in managing the sector.

## **1.2 Role of science and technology training in agricultural transformation**

Scientific research plays a key role in creating new products or new and/or more appropriate techniques of production. This in turn provides employment and creates wealth. A good example in

Tanzania is tissue culture bananas which has created new markets and transformed livelihood of communities in Kagera region. Over the last two decades, banana production in Kagera region has been on the decline, mainly due to lack of clean planting material. Traditional methods of banana propagation perpetuated the problem of diseases and pests. The Agricultural Research Institute of Maruku, in collaboration with local universities and Kagera Development Programme (KADEP) developed tissue culture banana, which is not only clean, but also high propagation capacity that provides large numbers of plantlets within a short time and take a short time to produce fruit. Many farmers have therefore benefited from the technology and now are producing enough for both food and for commercial purposes.

### **1.3 Tapping the potential of science and technology in agri-food chains**

An effective tertiary education system in agriculture and natural resources management would contribute enormously to rural development. For the education system to be effective, the structure, content and delivery mechanisms for educational programmes must be linked to social and economic development needs. The focus of a higher education training institute should be put on value addition and development of entrepreneurial skills. Researchers should develop and disseminate technologies for increased agricultural productivity and sound natural resource management or utilize the benefits offered by the emerging technologies including information and communication technology, and safe use of biotechnology. Other strategies include encouraging labour intensive investments to take advantage of the large pool of workforce available; formulation of development projects that are sustainable, appropriate and have the support of the stakeholders; promotion of large-scale irrigation projects, which the potential to solve the problem of chronic food insecurity.

The desire for improved agricultural productivity as stipulated in a number of government policies and strategies aimed at reducing poverty has prompted increased attention on agricultural education and training. Universities, Faculties and Colleges of Agriculture have been given broad mandates to ensure that training is improved in terms of both quality and quantity in order to cope with the demands of increased agricultural productivity and profitability.

FAO data show that there is a critical need for a large number of well trained extension workers in many developing countries, including Tanzania. According to the 2007/08 budget speech of the Minister for Agriculture, Food Security and Cooperatives, Tanzania requires more than 15,000 extension workers while at present there are only 3374 making a shortfall of 11,703 extension workers. The figure of 15,000 extension workers does not take into consideration agricultural human resource required for the research and training institutes as well as the private sector and other agencies. Thus the number may be under-estimated.

Despite this enormous demand, it is increasingly becoming difficult to get a substantial number of students to train in agriculture. This paper attempts to show the magnitude of this problem using Sokoine University of Agriculture in Tanzania as a case.

## **2.0 SOKOINE UNIVERSITY OF AGRICULTURE (SUA) IN TANZANIA**

### **2.1 The University in context**

Sokoine University of Agriculture was established on the 1st July 1984 by Parliamentary Act No. 6 of the same year. The University was created from the former Faculty of Agriculture, Forestry and Veterinary Science of the University of Dar es Salaam. It is situated 3.0 km from the centre of Morogoro Municipality, which is about 200 km west of Dar es Salaam.

According to the information available on the University webpage (<http://www.suanet.ac.tz/about/about.php>), the University has four Faculties and six Directorates/Institutes, excluding those in the constituent college. They are the Faculties of Agriculture, Forestry and Nature Conservation, Veterinary Medicine, and Science; the Institute of Continuing Education (ICE), the Development Studies Institute (DSI), and Directorate of Research and Postgraduate Studies (DRPGS). Others are the Computer Centre, Sokoine National Agricultural Library (SNAL), SUA Centre for Sustainable Rural Development (SCSRD), and SUA Pest Management Centre (SPMC).

The University offers undergraduate training, leading to the awards of degrees in BSc (Agriculture General), BSc (Agronomy), BSc (Home Economics and Human Nutrition), BSc (Horticulture), BSc (Animal Science), BSc (Food Science and Technology), BSc (Agricultural Engineering), BSc (Agricultural Education and Extension), BSc (Agricultural Economics and Agribusiness), BSc (Aquaculture), BSc (Forestry), BSc (Wildlife Management), Bachelor of Veterinary Medicine (BVM), BSc (Biotechnology and Laboratory Sciences), BSc (Environmental Sciences & Management), and BA (Rural Development). The University also offers postgraduate training leading to the award of Master of Science and PhD in the respective fields of Agriculture, Agricultural Economics and Agribusiness, Food Science, Human Nutrition, Forestry, Management of Natural Resources and Sustainable Agriculture (MNRSA), Veterinary Medicine, Preventive Veterinary Medicine (MPVM), and Rural Development.

In keeping with the policy requirements, SUA has in the recent years accelerated the pace of transforming from their historic ivory tower status towards a state that is sensitive and responsive to clients or society's needs. It is strongly argued that agricultural

education and training needs to satisfy the needs and requirements of very diverse groups including the private sector, employed and under employed people, professionals and others wishing to change careers.

In 1997 the University formulated its first Corporate Strategic Plan (CSP) to the year 2005 and beyond (SUA, 1997). One of the objectives of CSP was to improve the quality of academic programmes so as to educate students to become life long learners, productive citizens and leaders in society. To achieve this, the academic programmes were reviewed and a semester system was introduced, special efforts were made to increase the enrolment of female students, and steps were taken to increase enrolment of students from 1,253 in 1997 to 4,000 students by 2005. In the course of implementing the CSP, the number of degree programmes increased from 12 in 1997 to 16 in 2005, and the student population increased from 1,126 in 1997 to 2,673 in 2005, missing the target by 1,327 students.

With the conclusion of the CSP in 2005, the university formulated the second CSP for 2005 – 2010, in which the target is to increase student enrolment up to 8,418 by 2010, and to introduce at least three new degree and three non-degree programmes (SUA CSP, 2005). As of now, one year from the conclusion of the second CSP, SUA is offering 20 degree programmes and the population of students has grown to only 4,000. This means, the target of the second CSP is going to be missed too.

## **2.2 Challenges facing SUA in expanding enrolment**

Upon investigation it was realized the falling enrollment rate is not a unique problem to SUA; it is a problem facing almost all science course. There has been tremendous increase in student enrollments in Universities and colleges in Tanzania in the last 10 years, mainly due to increase in public and private universities and colleges from 9,646 in 1995/96 to 41,419 in 2006/2007. However,

more than 70% of students enrolled in universities and colleges are pursuing arts and humanities courses, while about 30% only are pursuing science and ICT programmes. Sokoine University, which is basically a pure science higher learning institution, suffers the most.

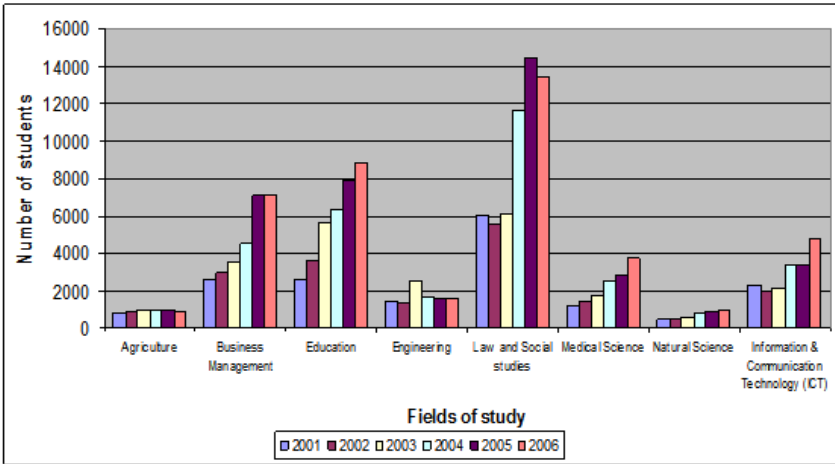
From Table 1, it could be noted that there is a significant difference between the number of students applying for admission at SUA and those applying to join other higher learning institutions. Compounding annualized growth rate indicates that the growth rate of applications for Mzumbe University and Iringa University College of Tumaini University are 29.4% and 21.6% respectively. This is more than double the growth rate for SUA, which is only 10%. Records also show that since the establishment of Tanzania University Commission (TUC) to coordinate University education, SUA has always been asked to make a second selection of applicants after some candidates turned down SUA's offer. It hasn't happened that students enrolled at other higher learning institutions opt for SUA.



**Table 1: Comparison of application rates for selected universities**

Academic Year	Application		
	Sokoine University (SUA)	Mzumbe University (MU)	Iringa University College (IUCO)
2000/01	1390	844	200
2001/02	1976	1180	250
2002/03	2268	3640	300
2003/04	2796	4483	347
2004/05	3396	6302	430
2005/06	2906	9736	1218
<b>Growth Rate (%)</b>	<b>10.1</b>	<b>29.4</b>	<b>21.6</b>

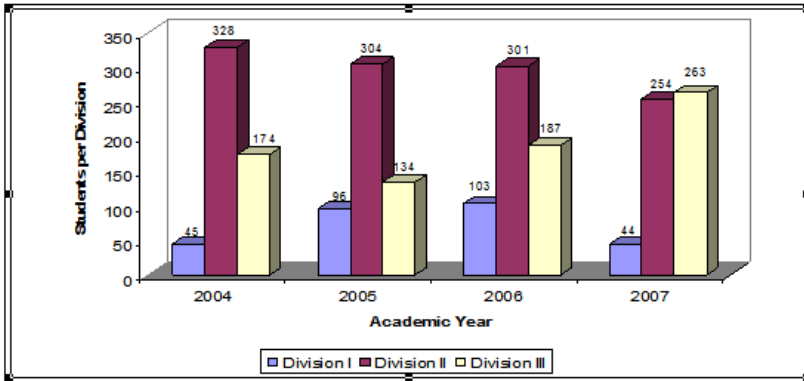
The above observation is supported by the findings of the study that investigated number of students enrolled in different fields of study. It was found that Law and Social Science fields are leading in attracting students (Figure 1). Between 2000 and 2006 this field absorbed 57,302 students equivalent to 33.4% of all students enrolled in higher learning institution in the country. This was followed by Education and Business Studies which accounted for 20.5% and 16.2% respectively. Analysis indicate that Agricultural field in the same period of time enrolled 5,461 students being only 3.2% of all students enrolled in higher learning institution in Tanzania. But this was a little bit higher than the number of students enrolled in Natural Science fields, which make up 2.5% of the entire student population in higher learning institution during 2000/2001 and 2005/2006 academic year.



**Figure 1: Student enrolment by category of field of study**

A critical examination of Figure 1 reveals that there are several fields of study whose enrolment is as low as in the case of agricultural field. These are engineering, medical science and natural science. But it could be noted that the enrollment trends are different. Whereas for other degrees there is a bit of increasing trend, for agricultural studies the trend is constant. This sends a strong message about the dwindling future of the field.

On the other hand, the quality of students being admitted at SUA is deteriorating. Examination of students enrolled at the university between 2004 and 2007 indicates that the number of Division I and Division II is declining while the number of Division III is increasing (Figure 2).



**Figure 2: Student enrollment at SUA by performance grade in high school**

The number of Division I students increase from 45 in 2004 to 103 in 2006 but dropped to 44 in the following year. Similarly, the number of Division II students has been decreasing steadily from 328 in 2004 to 304 in 2005, to 301 in 2006 and 263 in 2007. On the contrary, the number of Division III has increased from 134 in 2005 to 187 in 2006 and to 263 in 2007.

Analysis of the quality of students joining other higher learning institutions indicates a significant increase. For example, data from Mzumbe University and Iringa University College show that more and more Division I and Division II science students are enrolling in arts and humanities programmes.

### 2.3 Reasons for unattractiveness of agricultural science fields

A number of reasons can be put forward to explain the shift from natural sciences to arts subjects.

#### **2.3.1 AVAILABILITY OF JOBS AND PAY PACKAGE AFTER GRADUATION**

Field information indicates that jobs for arts and humanity graduates are readily available, but for graduates of science and

agriculture in particular job placements are very limited. While it takes about 3 months to one year for an arts graduate to secure employment, it takes one to two years for the agricultural graduate to get a job. It is really a paradox in which there is both, low supply and low demand of this category of experts. The market seems to be saturated with scientist. This low demand leads to low pay package for scientists. Data collected from the field indicate that arts and humanity graduates make as much as thrice the income of the science graduate per annum. This coupled with laborious nature of science occupations repels potential students to join the science field.

### ***2.3.2 DURATION OF STUDY AND TUITION FEE***

Most science and agricultural programmes take longer to study than arts and humanity programmes. For example, whereas most arts degrees take only 3 years to accomplish, it takes 4 to 5 years to accomplish a degree in science. For example, it takes 4 years to attain a degree in Agricultural Engineering and 5 years to obtain a degree in Veterinary Medicine. Moreover, the tuition fee for most science degree programmes is relatively higher than arts and humanity programmes due to their practical components. For example, the tuition fee to pursue a three year Bachelor of Arts in Rural Development at SUA costs TSh. 3,000,000 (US\$ 2,300), whereas for the five year Bachelor of Veterinary medicine the cost is TSh. 6,300,000 (US\$ 4,900). In Tanzania, students finance their higher education through borrowing money from the Higher Education Students Loan Board (HESLB). Taking all that into consideration, economically rational students mindful of high return on investment and shorter payback period, will not opt to take loan facility for studying science degrees. Although knowledge and skills in science and agriculture at the level of an individual might not be that important in terms of personal gains, the skills in this area are crucial at societal level in facilitating the development process of agriculture, a sector that supports more than 80% of the population in the country.

### **2.3.3 *STIGMA ON AGRICULTURE***

To many people including some senior officials in the government and the private sector in Tanzania agriculture means land tillage and all the sufferings it takes, bearing in mind that land tillage is carried out by hand hoe and other rudimentary tools. They miss an understanding that agriculture is a very wide field encompassing economics, business, forestry, biotechnology, veterinary medicine, environmental management, nutrition, aquaculture, sociology, animal science just to mention a few. From that perspective, courses such Home Economics and Human Nutrition, Food Science and Technology, Biotechnology and Laboratory Science, Forestry, Wildlife Management, Environmental Science and Management, Tourism and Hotel Management, even Aquaculture are not considered part of agriculture.

Students who study these courses at SUA are considered to have studied them in connection with “agriculture”. However, when these courses are offered at non-agricultural universities in the country such as the University of Dar es Salaam (UDSM), Mzumbe University (MU), Dodoma University or even at emerging private universities like Tumaini University, and Saint August University, they would not be considered agricultural subjects. Therefore there is a tendency to consider SUA graduates in these courses as relatively partially trained because their training is considered to have been inclined to agriculture, which means land tillage to the public. In fact SUA graduates can work as engineers, economists, marketers, food scientists, environmental specialists, mathematician, statistician, wildlife experts, foresters, sociologist, and so on.

That token, agriculture in Tanzania, is a highly stigmatized activity. This can be exemplified by ridiculous statements that portray farming as an inferior activity. For example it is not uncommon to note the following:

- A person telling a friend “if you have nothing to do go and farm”
- A teacher telling a dull student “better go and farm”
- People reacting to nonsense “Don’t speak to us as if we are farmers”
- A leader warning “criminals in towns will be arrested and sent to the country sides to farm”
- Parents telling their kids “you have to study hard otherwise you will end up farming”
- Ask a young boy or girl what he or she will do when he or she grows up; none will mention farming.
- Ask a person who is about to retire from employment what he/she will do upon retirement; he or she will say I will go farming.
- Parents become disappointed when their daughters introduce their fiances as farmer

All these and similar statements send signals to the young generation that farming is an inferior activity that should be engaged in by those who are desperate. Because of the stigma on agriculture, students who enroll at SUA, do so as a last resort after failing to secure admissions at other universities and colleges of higher learning. In a survey of 283 undergraduate students from different degree programs at SUA in 2006 it was found that, overall, 52.1% of the students interviewed did not prefer to come to SUA; 92.9% felt that SUA can not compete effectively with other higher learning institutions in attracting students; in terms of pride, 44.3% felt that they are inferior, 33.6% felt that they are equals, whereas 22.1% felt that they are superior. Furthermore, most students said that they would not recommend SUA for their relatives and friends seeking to join higher learning institutions. With regard to the reason for unattractiveness of SUA the survey revealed that 59.5% of the interviewed students associated this with the university name that includes the word “agriculture”.

However, 29.4% associated SUA's unattractiveness with threat of being discontinued as a result of failing science courses, and 11.1% felt that SUA's unattractiveness is linked to its low publicity.

About whether the SUA's name should be changed, 87.3% of all respondents indicated that it should be changed. This was a unanimous response from all the degree programmes. The responses by students from different degree programmes were BSc. Agricultural Economics and Agribusiness (100%), Food Sc. & Technology (100%), BSc. General (94.7%), Bachelor of Veterinary Medicine (94.6%), and 90% from the BSc. Biotechnology (See Appendix 1). A total of 16 names were proposed as indicated in Table 2 without any specific order. Of all the names, "Sokoine University" ranked first by being mentioned by 64% of all respondents.

**Table 2: New names suggested for Sokoine University of agriculture**

S/No.	Proposed name
1	Any name exclude agriculture
2	Morogoro University (MU)
3	Sokoine International University (SIU)
4	Sokoine Memorial University (SMU)
7	Sokoine University (SU)
6	Sokoine University College of Agriculture (SUCA)
5	Sokoine University of Biology and & Physical Sciences (SUBPS)
8	Sokoine University of Morogoro (SUM)
9	University of Sokoine (US)
10	Sokoine University of Agricultural & Technology (SUAT)
11	Sokoine University of Life Sciences (SULS)
13	Sokoine University of Tanzania
14	Sokoine University of Science (SUS)
15	Sokoine University of pure Science (SUPS)
16	Sokoine University & Research Centre (SURC)

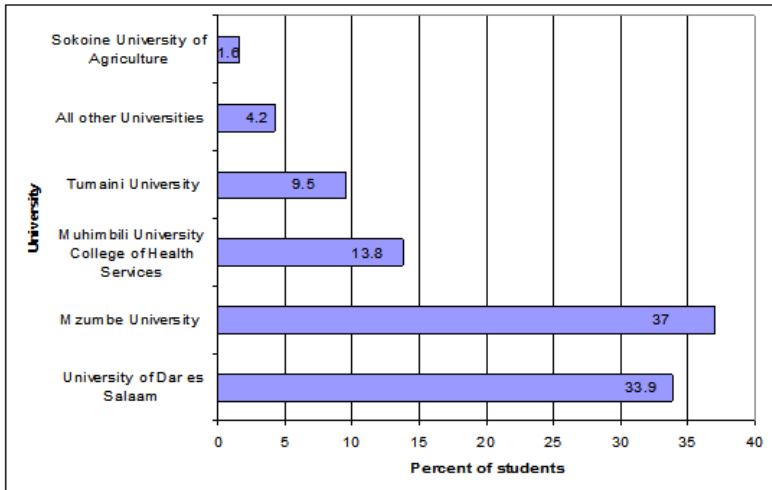
Similarly, a survey of 189 high school students, that is, prospective university students, from 9 different schools in Morogoro region indicated that agricultural profession was not their dream career. Of all the students interviewed, only 0.5 percent was interested in agriculture. Otherwise the majority (54%) were dreaming of studying business related courses. This was followed by law (36%) and medicine (26%) (See Table 3).



**Table 3: Comparison of application rates for selected universities**

<b>Career</b>	<b>Frequency</b>	<b>Percent</b>
Business studies	54	28.6
Law	36	19
Human medicine	26	13.8
Engineering	21	11.2
Sociologist	15	7.9
Teacher	13	6.9
Other fields	12	6.3
Journalist	11	5.8
Agricultural Scientist	1	0.5
Total	189	100

High school students were also asked their preferred higher learning institution upon graduation. It could be noted that Mzumbe University ranked highest by being preferred by 37% of all the students interviewed. This was followed by University of Dar es Salaam (33.9%), Muhumbili University College of Health Services (13.8%), and Tumaini University (9.5%). Sokoine University was one the Universities that were preferred by least students. Only 1.6% of all the students interviewed mentioned SUA as the preference university.



**Figure 3: Preference of students to higher learning institutions in Tanzania**

### ***3.0 CONCLUSION AND RECOMMENDATION***

Market-driven agriculture and agricultural innovation systems place new demands on the knowledge and skills of agriculture. However there is a big challenge in trying to increase the number of experts at tertiary level to meet this demand. This is explained by low salary and unavailability of job placements at graduation, relatively high tuition fee, and stigma on agriculture. There has been tremendous increase in student enrollments in higher learning institution in Tanzania in the last 10 years. But the distribution of students seems to be skewed to arts and humanities degree programmes at the expense of science and agriculture. Although science and agriculture may have low financial return at an individual level their impact at societal level might be great. It can be deduced that if this trend is left to continue unabated the shortage of experts in the field of agriculture will cost dearly this country in terms of importing expatriates. It is therefore recommended that

(i) In view of the immense importance of agriculture to the attainment of the country's, agriculture should be accorded a “**special and strategic national manpower needs**” status. The Government should provide incentives for bright students to study science and agriculture by **offering sponsorship** to outstanding students at both undergraduate and postgraduate level. The criterion for sponsorship should be demonstrable desire to become a farmer, to work with farmers, and to help farmers. Those who receive sponsorship should sign a special contract to work in the field of agriculture for a specified period.

Special remuneration package be established for those working in the field of agriculture. This would provide incentive for prospective students in high schools to join science and agriculture

(iii) The government should increase the pool of high school science students who can apply for science-based training programmes at tertiary level. This will mean improving the science-teaching facilities at secondary school level as well as putting more effort at the training of science teachers.

(iv) Government and civic society organizations should embark on a massive campaign to destigmatize agriculture.

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## 5. Appendices

### Appendix 1: Responses from undergraduate students at SUA

Degree Program	Was SUA your preference university?			Would you advise a relative to join SUA?			Do you think SUA is competitive?			Whether the name should be changes		
	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Bsc. Agric. Economics	6	23	29	23	5	28		29	29	29		29
	20.7	79.3%	100.0%	82.1%	17.9%	100.0%		100	100	100.0%	0.0%	100.0%
Bsc.Agric. Extension & Education	11	8	19	11	8	19		19	19	16	3	19
	57.9	42.1%	100.0%	57.9%	42.1%	100.0%		100	100	84.2%	15.8%	100.0%
Bsc.Agr. Engineering	2	4	6	4	2	6		6	6	5	1	6
	33.3	66.7%	100.0%	66.7%	33.3%	100.0%		100	100	83.3%	16.7%	100.0%
Bsc.Agric. General	8	11	19	8	6	14	2	17	19	18	1	19
	42.1	57.9%	100.0%	57.1%	42.9%	100.0%	10.5%	89.5%	100%	94.7%	5.3%	100.0%
Bsc.Agronomy	4		4	3		3		4	4	3	1	4
	100		100	100		100		100%	100%	75	25	100
Bsc.Animal Science	14	13	27	10	11	21		27	27	24	3	27
	51.9	48.1%	100.0%	47.6%	52.4%	100.0%		100%	100%	88.9%	11.1%	100.0%
Bsc.Biotechnology & Lab Sc.	11	9	20	15	3	18		20	20	18	2	20
	55.	45.0%	100.0%	83.3%	16.7%	100.0%		100%	100%	90.0%	10.0%	100.0%
Bsc.Food Science & Technology	7	17	24	22	2	24	7	17	24	24		24
	29.2	70.8%	100.0%	91.7%	8.3%	100.0%	29.2%	70.8%	100%	100.0%	0.0%	100.0%
Bsc.Forestry	17	11	28	26		26	5	22	27	20	8	28
	60.7	39.3%	100.0%	100		100	18.5%	81.5%	100%	71.4	28.6	100.0
Bsc.Home Econ. & Human Nutrit.	11	19	30	23	5	28	1	29	30	26	4	30
	36.7	63.3%	100.0%	82.1%	17.9%	100.0%	3.3%	96.7%	100%	86.7%	13.3%	100.0%
Bsc.Horticultural	9	6	15	12	1	13	4	11	15	7	8	15
	60	40.0%	100.0%	92.3%	7.7%	100.0%	26.7%	73.3%	100%	46.7%	53.3%	100.0%
Bsc.Veterinary Medicine	22	15	37	27	10	37		37	37	35	2	37
	59.5	40.5%	100.0%	73.0%	27.0%	100.0%		100%	100%	94.6%	5.4%	100.0%
Bsc.Wildlife Management	14	11	25	21	4	25	1	24	25	22	3	25
	56.0	44.0%	100.0%	84.0%	16.0%	100.0%	4.0%	96.0%	100.0%	88.0%	12.0%	100.0%
Total	136	147	283	205	57	262	20	262	282	247	36	283
	48.1	51.9%	100.0%	78.2%	21.8%	100.0%	7.2%	92.9%	100%	87.3%	12.7%	100.0%

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	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Bsc. Agric. Economics	6	23	29	23	5	28		29	29	29		29
	20.7	79.3%	100.0%	82.1%	17.9%	100.0%		100	100	100.0%	0.0%	100.0%
Bsc. Agric. Extension & Education	11	8	19	11	8	19		19	19	16	3	19
	57.9	42.1%	100.0%	57.9%	42.1%	100.0%		100	100	84.2%	15.8%	100.0%
Bsc. Agr. Engineering	2	4	6	4	2	6		6	6	5	1	6
	33.3	66.7%	100.0%	66.7%	33.3%	100.0%		100	100	83.3%	16.7%	100.0%
Bsc. Agric. General	8	11	19	8	6	14	2	17	19	18	1	19
	42.1	57.9%	100.0%	57.1%	42.9%	100.0%	10.5%	89.5%	100%	94.7%	5.3%	100.0%
Bsc. Agronomy	4		4	3		3		4	4	3	1	4
	100		100	100		100		100%	100%	75	25	100
Bsc. Animal Science	14	13	27	10	11	21		27	27	24	3	27
	51.9	48.1%	100.0%	47.6%	52.4%	100.0%		100%	100%	88.9%	11.1%	100.0%
Bsc. Biotechnology & Lab Sc.	11	9	20	15	3	18		20	20	18	2	20
	55.	45.0%	100.0%	83.3%	16.7%	100.0%		100%	100%	90.0%	10.0%	100.0%
Bsc. Food Science & Technology	7	17	24	22	2	24	7	17	24	24		24
	29.2	70.8%	100.0%	91.7%	8.3%	100.0%	29.2%	70.8%	100%	100.0%	0.0%	100.0%
Bsc. Forestry	17	11	28	26		26	5	22	27	20	8	28
	60.7	39.3%	100.0%	100		100	18.5%	81.5%	100%	71.4	28.6	100.0
Bsc. Home Econ. & Human Nutrit.	11	19	30	23	5	28	1	29	30	26	4	30
	36.7	63.3%	100.0%	82.1%	17.9%	100.0%	3.3%	96.7%	100%	86.7%	13.3%	100.0%
Bsc. Horticultural	9	6	15	12	1	13	4	11	15	7	8	15
	60	40.0%	100.0%	92.3%	7.7%	100.0%	26.7%	73.3%	100%	46.7%	53.3%	100.0%
Bsc. Veterinary Medicine	22	15	37	27	10	37		37	37	35	2	37
	59.5	40.5%	100.0%	73.0%	27.0%	100.0%		100%	100%	94.6%	5.4%	100.0%
Bsc. Wildlife Management	14	11	25	21	4	25	1	24	25	22	3	25
		45.8%	33.3%	20.8%	100.0%	36.0%	32.0%	32.0%				100.0%
<b>Total</b>		156	77	29	262	62	124	94				280