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Research Application Summary

### **Promoting Inclusivity in RUFORUM Operations**

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#### **Abstract**

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) established by 10 Vice Chancellors in 2004, is a network of 126 universities in 38 African nations spanning the Continent with a vision to create vibrant transformative universities to catalyze sustainable inclusive agricultural development to feed and create prosperity for Africa. Soon after establishment in 2004, the Network undertook a scoping study to determine the competencies, opportunities and needs of the then 10 member universities and established RUFORUM as a strong instrument for assisting the rural poor beyond food security intervention and the need to increase participation of more universities in networking. Through these support modalities, RUFORUM directly contributed in the short-term to enhanced gender equality and inclusion, and in the long-term to sustainable and inclusive agricultural and socio-economic development. As a network of Universities in Africa, RUFORUM has undertaken measures to promote inclusivity in all its operations including deliberate efforts to increase the pool of women scientists. This includes targeted support to female staff and students and raising the age limits in scholarship and grant awards. These efforts have increased female supported students from 20% Masters and 12 % PhDs in 2004 to 45% at both levels in 2018. These efforts were buttressed by supporting the founding of the Forum for Women Vice Chancellors in Africa (FAWoVC) in 2016 to encourage more women to take leadership roles and provide a platform to significantly influence the development of higher education in the Continent. Since then, FAWoVC has held three convenings that have fostered networking, lesson learning and mentorship among the female Vice Chancellors. RUFORUM has also strengthened capacity of small and fragile States to steer science technology and innovation activities through postgraduate training and research. This has been undertaken through direct support to Masters and PhD students in fragile States including Burundi, Cameroon, Democratic Republic of Congo, Liberia, Mali, Sierra Leone, Somalia, South Sudan, Sudan and Zimbabwe. Relatedly, through the TAGDev programme with support from the Mastercard Foundation, academically bright yet economically marginalized students from the mainstream of society have been supported to access higher education, and to-date 160 Students (110 undergraduates, 50 Masters) have been supported. The purpose of this paper is to highlight the contribution of RUFORUM to inclusiveness, an important aspect for catalyzing the achievement of the 17 Sustainable Development Goals, and the African Union Agenda 2063.

Key words: Equity, fragile States, gender, RUFORUM activities, SDGs, TAGDev

## Résumé

Le Forum Régional des universités pour le renforcement des capacités en agriculture (RUFORUM) est un réseau de 126 universités dans 38 pays africains avec pour vision d'avoir des universités transformatrices dynamiques pour faciliter un développement agricole inclusif durable en Afrique. Peu après sa création en 2004, le réseau a identifié les compétences, opportunités et besoins des dix universités membres, et a établi le RUFORUM pour appuyer les communautés rurales pauvres, au-delà des interventions pour une sécurité alimentaire et la nécessité de faire participer plus d'universités dans le réseau. Grâce à ces modalités, RUFORUM a directement contribué à court terme à l'approche genre, et à long terme au développement agricole et socio-économique durable et inclusif. En tant que réseau d'universités en Afrique, RUFORUM a promu l'intégration dans toutes ses opérations. Ceci prend aussi en compte les efforts ciblant les personnels féminins et étudiants et rehaussant les limites d'âge pour les bourses et subventions. Ces efforts ont fait passer de 20% (Master) et 12% (Doctorat) en 2004 à 45% aux deux niveaux en 2018 les taux de participation des femmes. Par ailleurs, ces efforts ont été renforcés par la création du Forum des femmes Rectrices d'Afrique (FAWoVC) en 2016 pour encourager davantage de femmes à assumer des rôles de leadership et à créer une plateforme pour appuyer le développement de l'enseignement supérieur sur le continent. Depuis lors, le FAWoVC a organisé trois réunions qui ont favorisé le réseautage, l'apprentissage et le mentorat des femmes rectrices. RUFORUM a également renforcé la capacité en technologie et innovation scientifiques dans les États fragiles par le biais de la formation et de la recherche. Cela a été possible grâce à un appui aux étudiants en Master et Doctorat dans ces États, notamment le Burundi, le Cameroun, la République Démocratique du Congo, le Libéria, le Mali, la Sierra Leone, le Soudan du Sud, la Somalie, le Soudan et le Zimbabwe. De même, grâce au programme TAGDev financé par la Fondation Mastercard, des étudiants économiquement marginalisés mais brillants ont été appuyés pour accéder à l'université, et à ce jour, 160 étudiants (110 étudiants de premier cycle, 50 masters) ont été soutenus. Le but de ce document est de mettre en évidence la contribution de RUFORUM à l'intégration, un aspect important pour la réalisation des 17 Objectifs de Développement Durable.

Mots-clés: équité, États fragiles, genre, activités du RUFORUM, ODD, TAGDev

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## Background

With the adoption of the Agenda 2030 for sustainable development, governments vowed to ensure no one will be left behind and to endeavor to reach the farthest behind first (UN General Assembly, 2015). This principle is stated repeatedly in the Agenda as well as in several national and international development documents, pledges, calls to action, interventions and statements. A clear commitment to inclusiveness was specified in the Agenda when Member States "pledged that no one will be left behind" while at the same time recognizing that human dignity is central. The agenda further specifies that all goals and targets be met for all nations, peoples and societies committing to also reach those farthest behind. This clearly demonstrates that inclusiveness, equality and equity are key aspects that need to be achieved and reflected in all strategic development documents of governments and institutions across the World. Since its founding in 2004, the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), a network of African Universities, has undertaken concrete, collective and

focused actions to ensure that the pledge of leaving no one behind indeed includes every person, everywhere as well as to review progress and challenges in realizing this core principle in higher education undertakings. This is reflected in the institutional mission of strengthening the capacities of Universities to foster innovations responsive to the demands of smallholder farmers and value chains through the training of high quality researchers, the output of impact-oriented research, and the maintenance of collaborative working relations among researchers, farmers, market actors, national agricultural research and advocacy institutions, and governments. In order to achieve this mission, RUFORUM developed the necessary capabilities, guided by its seven strategic goals (Fitzgerald and Lindow, 2013) as indicated below.

**Box 1: RUFORUM's Strategic Goals**

1. Masters and doctoral programs responsive to stakeholder needs and national/regional development goals.
2. Shared research and education/training facilities and capacities rationalized for enhanced economies of scale and scope.
3. Innovative education/training research and outreach activities supported by adaptive management structures in universities contributing to policy and development practice.
4. Operational capacity and approaches for innovative, quality and impact-oriented agricultural R4D mainstreamed in universities.
5. Increased participation and voices of women in education/ training, research and production and marketing of knowledge;
6. Increased use of technology to support effective, decentralized learning and sharing of knowledge.
7. A dynamic regional platform for policy advocacy, lobbying, coordination, and resource mobilization for improved education/ training, research and outreach by universities.

In more recent years, attention has been given to building capacity for fragile States in Africa, especially for Burundi, DR. Congo, Liberia, Mali, Sierra Leone, South Sudan and Sudan.

**The thrust on inclusivity in line with the Sustainable Development Goals**

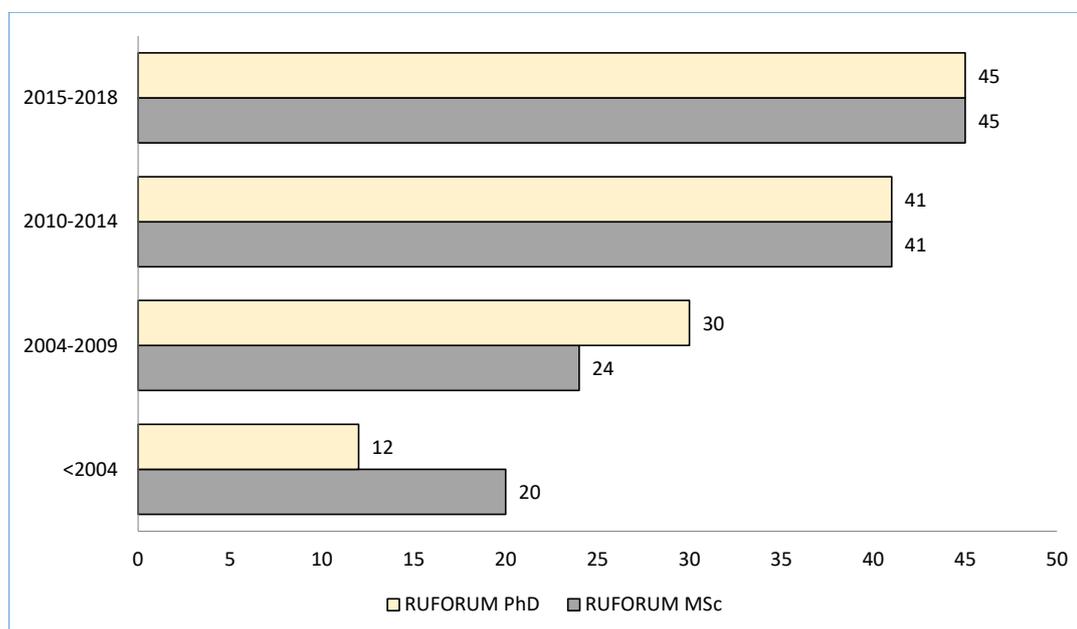
Recognizing the untapped potential of returns to investment in higher education and challenges that Africa's tertiary education sector faces, RUFORUM developed a higher education development agenda "the African Universities Agenda for Higher Agricultural Education, Science, Technology and Innovation (AHESTI)". This agenda seeks to realize vibrant transformative universities that catalyse sustainable inclusive agricultural development to feed and create prosperity for Africa (Waswa *et al.*, 2018). The Agenda has an action plan that provides a more integrated and inclusive Africa that uses its human capital base, institutions and natural resources to drive technological, social and business innovation for development. The human capital development aspect within the agenda is essential in the development and deployment of novel technologies to meet the Agenda's goals and aspirations. This is also inscribed in the Sustainable Development Goals, especially Goal 4 on "ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all" as indicated in Table 1.

**Table 1. RUFORUM linkage to the Sustainable Development Goals**

No.	Strategic objective	Links to SDGs
1	Masters and doctoral programs responsive to stakeholder needs and national/regional development goals.	1, 2, 4, 5
2	Shared research and education/training facilities and capacities rationalised for enhanced economies of scale and scope.	4, 5
3	Innovative education/training research and outreach activities supported by adaptive management structures in universities contributing to policy and development practice.	4, 5
4	Operational capacity and approaches for innovative, quality and impact-oriented agricultural R4D mainstreamed in universities.	4, 17
5	Increased participation and voices of women in education/ training, research and production and marketing of knowledge;	5
6	Increased use of technology to support effective, decentralized learning and sharing of knowledge.	9.5, 17.6
7	A dynamic regional platform for policy advocacy, lobbying, coordination, and resource mobilization for improved education/ training, research and outreach by universities.	17

### **RUFORUM efforts, mechanisms and progress in increasing the pool of women scientists in Africa**

RUFORUM as a network of Universities in Africa has seven strategic objectives that have been guiding operations since inception in 2004. One of the strategic objectives is to enhance the participation and voices of women in education/training, research, and production and marketing of knowledge (Fitzgerald and Lindow, 2013). This thrust aims at achieving greater parity among women and men in Africa so that they more equally share the benefits of agricultural research and training. Mechanisms include addressing the priorities of both women and men when setting training and research goals, implementing research and outreach projects, and measuring and communicating training and research and development outcomes; supporting member universities to deliver courses in the theory and practice of gender-responsive research; knowledge exchange and the development of research projects and products with a gender lens to reduce the burden on women and increase the potential positive impact of research outputs; and, engaging communities focused on empowering women in agriculture. Specifically, RUFORUM in collaboration with other initiatives and partners including African Women in Agricultural Research and Development (AWARD) equips graduates, researchers, academics and communities to create more inclusive and effective agricultural systems. RUFORUM has further incorporated a gender lens in guidelines for student recruitment, award of grants, and scholarships. According to the RUFORUM policy on gender, a target of 40% women enrolment in MSc and PhD programmes and participation in agricultural research was set to be reached by 2015. At the initiation of RUFORUM in 2004, only 20% of the MSc students trained with FORUM (Forum on Agricultural Resource Husbandry, a Rockefeller Foundation funded programme that operated from 1993 to 2002) support were female, while those trained at PhD level were 12%. By 2018, the proportion of female students fully supported by RUFORUM for PhD and MSc increased to 45% (Figure 1).



**Figure 1. Cumulative percentage of female graduates trained with RUFORUM support**

Through RUFORUM granting processes, communities of researchers have been built and equipped with the skills, knowledge, and support systems to develop and implement gender-responsive projects. This has helped advance gender-responsiveness as the norm and standard for higher agricultural research and training in Africa.

RUFORUM support has thus contributed to increased opportunities for equitable participation and the sharing of benefits from agricultural research and training; and improved the outcomes for women farmers and professionals. By building and engaging communities of female agricultural researchers, professors, and senior managers who offer different insights from their male counterparts, RUFORUM contributes to providing an important perspective in addressing the unique and pressing challenges of all farmers, and female farmers in particular, and helps advance gender-responsiveness as the norm and standard for higher agricultural research and training in Africa and globally.

**RUFORUM contribution towards building capacity for fragile States and weak national agricultural research systems in Africa**

Higher education in conflict-affected societies is highly important in stabilization and securitization, restoration of hope and harmony, building of State infrastructures, and peace building through teaching, research mission and socialization effects (Milton and Barakat, 2016). RUFORUM, through the Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA) project identified, commissioned and disseminated information on how capacity strengthening for agricultural research leads to measurable and sustainable impact in conflict-stricken nations as was the case for Rwanda, Burundi

and Sudan. The project enabled research organizations adopt and engage several tools and methodologies in capacity strengthening including, institutional analysis to identify capacity and resource gaps; gender analysis to identify opportunities for targeted gender support; change management for embedding new approaches and addressing systemic capacity issues; and, introducing additional skills such as proposal writing to help win new proposals. The project resulted into the creation of active innovation platforms to engage national research bodies, smallholder farmers, universities, policy makers and private sector to share information and practices; and identification and addressing issues around markets for priority agricultural commodities and value chains. The SCARDA process became the link that sustained NARS active engagement in national development, especially in developing the country Compacts to operationalize the CAADP commitments. A total of 78 students from 15 countries in East, Central, Southern and West Africa received training in topics as diverse as plant breeding, rangeland management and agricultural information and communication management (Table 1).

A substantial number of students submitted and published papers on their research theses to academic journals or presented some of their research findings in international conferences. Some of the graduates applied successfully for PhD programmes and many assumed senior positions in their organizations, such as Programme Leader or Head of Department.

Further, as part of providing opportunities for postgraduate training for students from fragile States and other disadvantaged communities, RUFORUM is presently supporting the training of 68 students (30 Male, 38 female) from conflict and post conflict countries of Burundi,

Table 1. Number of Masters Graduates trained for the different countries under SCARDA

Coordinating Senior Research Organization (SRO)	Country/Participating Focal Institution	No. of MSc graduates
ASARECA	Burundi (ISABU)	5
	Democratic Republic of Congo	2
	Ethiopia	1
	Kenya	1
	Rwanda (RAB)	7
	Sudan (ARC)	15
	Tanzania	1
	Uganda	2
CORAF/WECARD	Congo, Brazzaville (DGRST,	6
	Gambia (NARI)	10
	Ghana (CSIR, NRI)	6
	Mali (IER)	5
SADC/FANR (CCARDESA)	Botswana (DAR &BCA)	8
	Lesotho (NUL)	1
	Zambia (NRDC & UNZA)	8

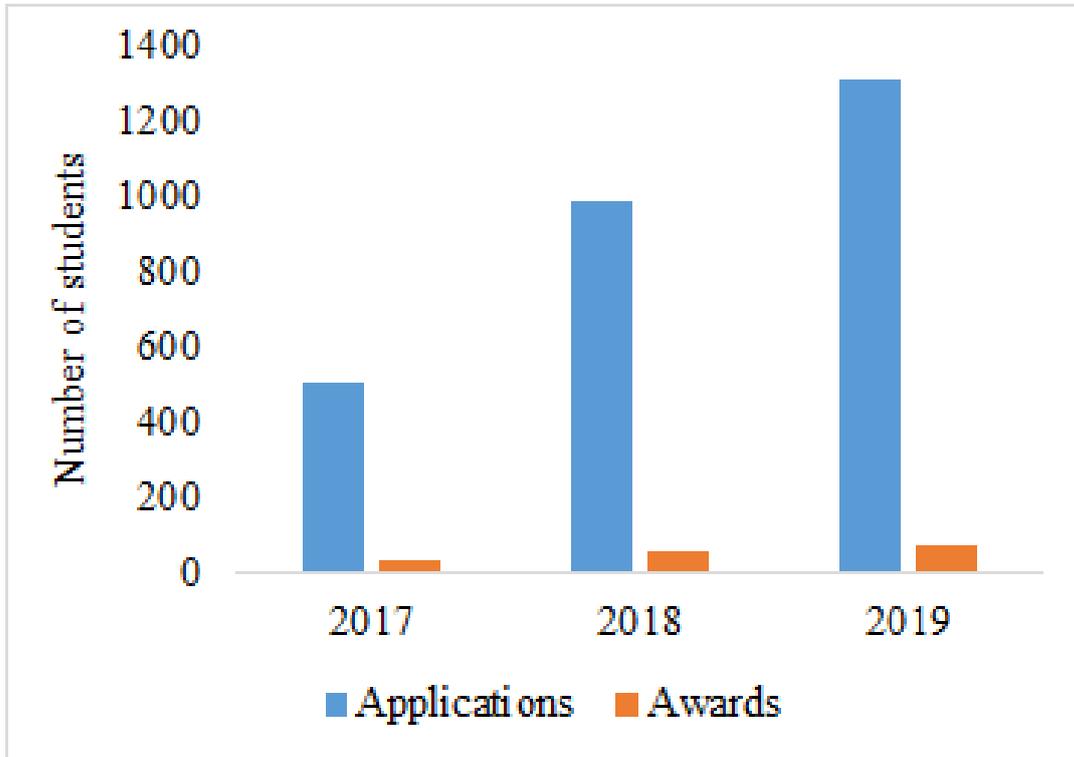
Cameroon, Democratic Republic of Congo, Liberia, South Sudan, Somalia, Sudan and Zimbabwe to undertake Masters (67) and PhD (1) studies in several African Universities. Other students are being trained through the RUFORUM Entrepreneurship Challenge Program (RECAP) to support the development of agricultural enterprises through entrepreneurial skills development.

RUFORUM currently supports disadvantaged rural but talented students to advance entrepreneurship along the agricultural value chain in rural communities throughout Africa through the project “Transforming African Agricultural Universities to meaningfully contribute to Africa’s growth and development (TAGDev).” This project aims at transforming African agricultural universities and their graduates to better respond to developmental challenges through enhanced application of science, technology, business and innovation for rural agricultural transformation. The Project aims at achieving this through piloting a new model of agricultural education at early adopter universities that connects tertiary agricultural education to rural communities, with an emphasis on smallholder farmers; strengthening agribusiness/entrepreneurship at two universities (Egerton in Kenya and Gulu in Uganda) and selected TVET institutions; scaling the new model for agricultural education to other agricultural universities and TVET institutions; and, increasing collaboration and mutual learning among institutions and agencies implementing and influencing innovative Tertiary Agricultural Education for rural transformation in Africa. The programme targets recruitment of talented, motivated students from rural communities as well as from conflict afflicted areas and countries with a passion for agriculture and entrepreneurship. An analysis of the applications submitted by prospective students over the last three years of programme implementation is presented in Figure 2. Over this period, RUFORUM has observed a constantly increasing demand for university education support across Africa. Figure 2 highlights the disproportionality between the number of applications and the number of awards given to applicants.

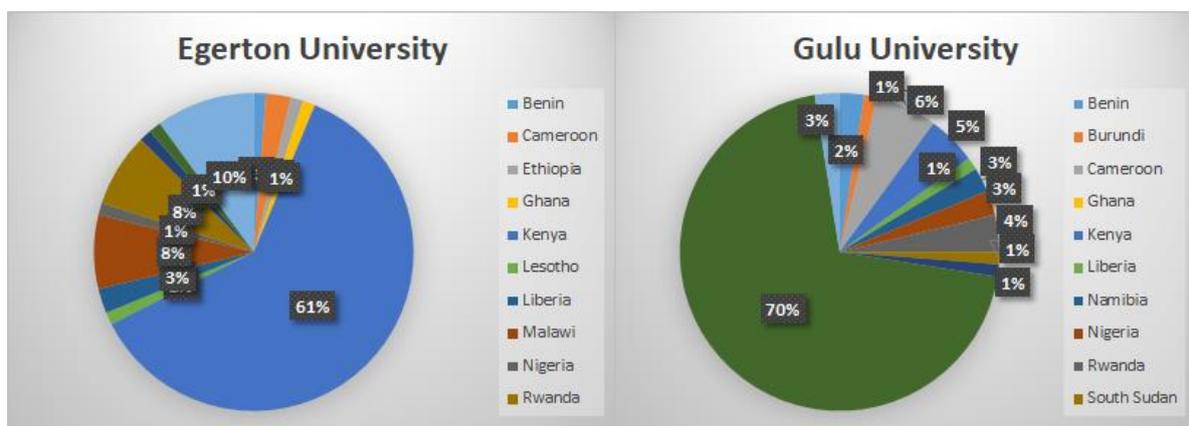
The programme further enhances personal development of students with a suite of innovative skills enhancement programmes including mentorship support, internships, entrepreneurial projects, and linkages to agricultural value chains and finance. The centerpiece of the programme is the “Student-Centered University Outreach Model” at Gulu University (Kalule *et al.*, 2016) and the “Field/Industry/Farm Attachment Program” at Egerton University (Mungai *et al.*, 2019).

The outreach and community engagement models are two-way learning processes intended to expose the student to learn from the farmer and the farmer also to learn from the student. The farm and industry attachments and practical learning sessions reflect the realities that graduates will encounter in the workplace, which is congruent with the kinds of lives they may have to live after school, as well as with the values and ideals of the farming, agribusiness and industry community they will engage with. Through participating in this attachment, students are expected to appreciate the farmers’ (and other value chain actors) situation whereupon, as change agents, they are expected to change when they eventually graduate. Teaching with passion, purpose and value places priority on enhancing the ‘employability focus’ to prepare students for navigating lives where work and life are not separated and traditional boundaries between economy, society and the individual are

collapsing, whilst maintaining the rigors of the subject matter content and cognitive numeracy at the heart of instruction. To-date, 160 students including 50 Masters (28 female) from 10 countries and 110 undergraduate students (57 female) from 9 countries have been supported to access higher education at Gulu and Egerton universities in Uganda and Kenya, respectively (Table 2; Figure 3).



**Figure 2. Increase in student demands for admission into Agricultural academic programmes**



**Figure 3. Current country distribution of the TAGDev supported students at Gulu and Egerton Universities**

**Table 2. Number of disadvantaged students supported to access higher education at Gulu and Egerton University**

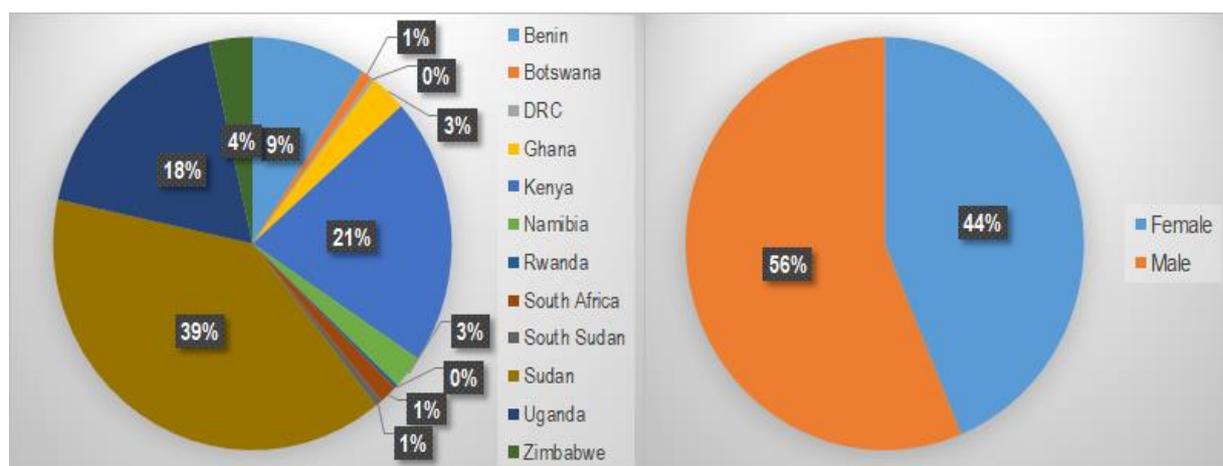
Country of origin	Egerton University	Gulu University	Grand Total
Benin	1	2	3
Burundi		1	1
Cameroon	2	5	7
Ethiopia	1		1
Ghana	1		1
Kenya	49	4	53
Lesotho	1		1
Liberia	2	1	3
Malawi	6		6
Namibia		2	2
Nigeria	1	2	3
Rwanda	6	3	9
Somalia	1		1
South Sudan		1	1
Tanzania	1	1	2
Uganda	8	56	64

### **RUFORUM support towards additional Bachelor, Master and PhD students across Africa**

Given the observed patterns of increase in demand for support, RUFORUM has taken extra steps towards providing full support to Bachelor, Master and PhD students in Agricultural sciences. Some of these students are drawn from the reserve list of the successful applicants of the TAGDev scholarship support. In total 343 students (150 Female vs 193 Male) from 12 African countries (Table 3; Figure 4) are supported through the RUFORUM Community Action Research Programme Plus (CARP+) and the Institutional Nurturing Grant projects. These CARP+ and Nurturing Grants projects are providing capacity building experiences to 15 universities across nine African countries (Benin, Botswana, Ghana, Kenya, Namibia, South Africa, Sudan, Uganda and Zimbabwe).

**Table 3. Number of additional students supported through various RUFORUM projects**

Countries	Number of students	RUFORUM Project
Benin	32	Nurturing Grant and CARP+
Botswana	3	CARP+
DRC	1	CARP+
Ghana	10	CARP+
Kenya	72	CARP+
Namibia	9	CARP+
Rwanda	1	Nurturing Grant
South Africa	5	CARP+
South Sudan	2	Nurturing Grant
Sudan	134	Nurturing Grant and Mini CARP
Uganda	62	Nurturing Grant and CARP+
Zimbabwe	12	CARP+
<b>Total</b>	<b>343</b>	

**Figure 4. Country and gender distribution of the additional students supported through various RUFORUM projects**

### **Catalyzing the founding of the Forum for Women Vice Chancellors in Africa**

Leadership of higher education institutions in Africa is an important aspect for enabling universities achieve respective missions in support of the realization of continental goals, as enshrined within the African Union Agenda 2063. One of such goals is the realization of full gender equality in all spheres of life (Goal 17). Hence, mainstreaming gender within higher education is of supreme importance for enhancing the performance of higher education institutions, and enabling them to play their rightful role within the development process. The previous Millennium Development Goals, target three (3), focused on gender parity in primary and secondary education (Lomazzi *et al.*, 2014). This was found to be inadequate, rather, gender equality and women's empowerment is a requirement for the fulfillment of all the Sustainable Development Goals (UN General Assembly, 2015). It was therefore imperative that leaders in all sectors of education adequately address the issue of gender equality and implement actions that bridge gender gap. As of December 2019, there were about 40 female Vice Chancellors managing universities in Africa out of about 1500 Vice Chancellors from Universities in Africa. These needed to be inspired, mentored and capacitated to keep pace with the other higher education institutions globally. It was against this background that RUFORUM supported the founding of the Forum for Women Vice Chancellors in Africa (FAWoVC) that was officially launched in August 2018 to support girls to join Science Technology Engineering and Mathematics (STEM) education; share lessons and experiences learnt from managing Higher Education Institutions in Africa; and, catalyze the actualization of a critical mass of women scientists and leaders who can play a decisive role in governance and decision making for Africa's development. To further strengthen the capacity of FAWoVC to champion programmes that support gender inclusive participation in Science Technology and Innovation, RUFORUM supported Busitema University in Uganda to competitively secure a grant from the Islamic Development Bank to address the challenge of limited participation of women in science, technology and innovation in Mozambique, Sudan and Uganda.

### **Overall progress to date, emerging issues and challenges**

Inclusiveness in RUFORUM operations has been achieved through several interventions including support to academically disadvantaged students, where to-date, 160 students have been supported under the TAGDev Programme of RUFORUM. Based on the lessons learned from the TAGDev Programme, the ethos learnt have been incorporated as components in all RUFORUM granting procedures. Despite recruitment from economically disadvantaged backgrounds, students at Masters level have demonstrated the ability to complete studies within the required timeframe.

The networking opportunities created by RUFORUM have helped member universities in fragile States, where political or economic conditions were unfavorable, to keep operating at the highest possible level, re-build their depleted staff capacities and re-establish their systems. This is a best practice regionality principle that should be maintained as a core value of mutual support in RUFORUM Network activities. As such RUFORUM should carefully balance between equitable sharing of work as a capacity building tool and the sharing of benefits delivered by a few of the more capable members (centres of excellence/ leadership) on behalf of the entire network.

RUFORUM programmes have played a key role in improving the quality of education in the rapidly changing higher agricultural education environment in Africa. Among the member universities, a few first generation (old in reference to the number of years since their establishment) universities took leadership in establishing the regional training programmes starting in 2008. These have been instrumental in training staff from different African countries and have contributed greatly to the development of some of the newly established universities, and those in fragile countries emerging from conflict. New universities (e.g. University of Burundi, Busitema University, Gulu University, and University of Juba have been nurtured by RUFORUM to start new graduate programmes. Efforts are under way to work with the University of Liberia to start PhD training in the university.

Inter-institutional collaborations have been vital in the strengthening capacity of emerging universities thus consolidating their academic environment and attracting and maintaining world-class faculty to improve the quality of teaching and learning in these institutions. To make these partnerships work well, RUFORUM facilitated institutions and individuals to create academic and research environments conducive to cooperation, assisting each other with initiatives, projects, and partnership linkages. In addition, lead institutions committed to going beyond territoriality, encouraged and nurtured fruitful collaborations and use of their facilities, equipment and other resources for the benefit of other member universities. In addition, collaboration with top-notch research institutions of the North helped raise the standards of member universities through exposure to teaching, research, services and management methods. International cooperation, experience and exposure enabled young researchers and educationists to expand their work, publish in recognized professional journals, and present papers at professional meetings.

RUFORUM scholarships, grants and other institutional policies put great emphasis on participation of Women in order to achieve the target of 50% participation of Women in ST&I as set out by Africa Ministers Meeting held in Nairobi in October 2018 ([http://www.ruforum.org/Biennial2018/sites/ruforum.dd/files/Communique%20Nairobi%20Ministerial%20consultation24Oct18\\_draft.pdf](http://www.ruforum.org/Biennial2018/sites/ruforum.dd/files/Communique%20Nairobi%20Ministerial%20consultation24Oct18_draft.pdf)) To-date, 45% of students benefitting from RUFORUM programmes are women and RUFORUM continues to advocate for equitable participation by Women in all its programmes. Initiatives including the Forum for Women Vice Chancellors in Africa and Strengthen Staff Capacity and Increasing the pool of Women Scientists in African Universities (RISSCAW) will go a long way in increasing women participation in ST&I.

Whilst adhering to inclusiveness, the competitive ability of weak universities in the RUFORUM Competitive Grants System (CGS) has largely been minimal in comparison with the more established universities, resulting into strong universities dominating RUFORUM support. This has however been addressed by using targeted calls for proposals involving “Weak” universities to compete amongst themselves and in other cases, pairing them with the more established universities. Further, despite efforts to increase the participation of Women in ST&I, there are still low enrollment ratios for women in some disciplines, including postgraduate studies, making it a challenge to ensure equitable participation by women in RUFORUM interventions and broader ST&I ecosystem.

### **Looking ahead: The RUFORUM New thrust on Increasing the Pool of Women Scientists and Building Capacity for Fragile States**

Under its Vision 2030 strategy, RUFORUM made seven fundamental commitments related to research excellence and impact, outreach, support to policy dialogue and reform, transformative student education and learning, enhancing innovation and creating opportunities, supporting engagement of women in development process, and knowledge generation and sharing. As part of realizing the full potential of women in agricultural ST&I, RUFORUM has endeavored to increase proportion of women earning agricultural science degrees. However, there is need for additional focused steps to increase the proportion of Women leaders spearheading agricultural development interventions, undertaking postgraduate education and participating in leadership. RUFORUM is thus committed to increasing the pool of women scientists and professionals and to strengthening gender-responsive research for development. Key initiatives will make full use of each nation's scientific and technical talent – regardless of the gender and social/ethnic characteristics of the people involved. Within the RUFORUM Vision 2030, under the CREATE (Cultivating Research and Teaching Excellence) flagship programme, RUFORUM aims at realigning universities' research and teaching functions into a more integrated model with a focus on problem solving and enhancing the capacity of the entire university academic practice and outreach system to contribute to inclusive sustainable development. This will, amongst several interventions, be achieved through developing inbuilt mechanisms to increase the participation of women in science and technology-related training and research activities in all institutions benefiting from RUFORUM schemes. An additional special focus will be given to post graduate training for small and fragile States.

The African Ministers meeting involving ministers and senior leaders of higher education, science and technology on strengthening regional cooperation on higher education, science, technology and innovation in Africa held in 2018 on 23 October Nairobi, Kenya highlighted that gender equality is an imperative, as full participation of women in different development processes would add percentage points to most national growth rates and double digits in many cases. The meeting further recommended a specific program to increase the pool of women scientists in Africa. These recommendations were reiterated at the 16th RUFORUM Annual General Meeting where Ministers of higher education, science and technology endorsed five continental initiatives for strengthening Africa innovation capacity, increasing its competitiveness, enhancing youth employability and entrepreneurship. Specifically, the ministers recommended putting in place mechanisms for strengthening staff capacities and increasing the pool of women scientists in African Universities and other research and development institutions. The five continental initiatives included Strengthening Africa's Innovation and Entrepreneurship Capacity (SASTIE); The Regional Initiative to Strengthen Staff Capacity in African Universities and Increase the Pool of Women Scientists (RISSCAW); Building Africa's Science Technology and Innovation Capacity (BASTIC); University Engagement to support Human Capital Development, Youth Employability and Entrepreneurship for Agricultural Transformation in Africa (HEEAT), and Strengthening Higher Agricultural Education in Africa (SHAEA) were adopted by the ministers. RUFORUM is putting in place mechanism and protocols for operationalizing the five continental initiatives. Already country specific studies on gender-based analysis of the state of ST&I have been undertaken in Liberia, Mali, Mozambique,

Sudan and Uganda (Tizikara *et al.*, 2019; Beshir *et al.*, 2020; Gbakima and Nakayiwa, 2020; Givá and Santos, 2020; Muna Mohamed Elhag and Mutasim Ahmed Abdelmawla, 2020; Sam-Amoah *et al.*, 2020; Sokona, 2020; Waswa *et al.*, 2020; Zinnah and Jackollie, 2020).

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