



Editorial

Higher Education in Africa: Current status and perspectives for inclusive transformation

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ABSTRACT

African universities are expected to help tackle challenges facing the African society and realise the aspirations of the Africa Agenda 2063 and the UN Agenda for Sustainable Development Goals 2030 in the current context of globalization of higher education. Unfortunately, there have been substantial challenges affecting Higher Education in Africa, notably the disparities in gender inclusion, limiting the potential of women, and the decline in average public expenditure per tertiary education student, making Sub Sahara Africa tertiary education enrollment ratio the lowest in the world. This editorial introduces the third issue of the fifth volume of the African Journal of Rural Development. In this edition, we have published nine papers addressing issues related to higher education in Kenya, Uganda, Democratic Republic of Congo, Cameroon, Zambia, Mozambique, Ethiopia and Sudan. In particular, the issue brings insights into the future of the African University, the importance of regional academic training programs, the gender disparities in participation in Science, Technology and Innovation, and the mechanisms for financing and strengthening higher education in Africa. It is our hope that the readers will find this information useful to guide further decision in the efforts towards transforming the higher education sector in Africa.

Keywords: Academic programmes, gender equality, public investment, Science, Technology and Innovation; RUFORUM

RÉSUMÉ

Les universités africaines devraient pouvoir contribuer à relever les défis auxquels est confrontée la société africaine, et réaliser les aspirations de l'Agenda 2063 de l'Afrique, et de l'Agenda des Nations Unies pour les Objectifs de Développement Durable 2030 dans un contexte actuel de mondialisation de l'enseignement supérieur. Malheureusement, on note toujours des défis importants affectant l'enseignement supérieur en Afrique, notamment les disparités dans l'égalité-genre, limitant le potentiel des femmes, et la baisse des dépenses publiques moyennes par étudiant de

l'enseignement supérieur, faisant du taux d'inscription dans l'enseignement supérieur en Afrique subsaharienne le plus faible. Cet éditorial présente le troisième numéro du cinquième volume de la Revue Africaine du Développement Rural. Dans cette édition, nous avons publié neuf articles abordant des questions liées à l'enseignement supérieur au Kenya, en Ouganda, en République démocratique du Congo, au Cameroun, en Zambie, en Mozambique, en Éthiopie et au Soudan. En particulier, les articles présentent un aperçu sur l'avenir de l'Université en Afrique, l'importance des programmes régionaux de formation universitaire, les disparités entre les sexes dans la participation aux sciences, à la technologie et à l'innovation, et les mécanismes de financement et de renforcement de l'enseignement supérieur en Afrique. Nous espérons que les lecteurs trouveront ces informations utiles pour orienter les décisions futures dans les efforts visant à transformer le secteur de l'enseignement supérieur.

Mots clés: Égalité-genre, investissement public, programmes académiques, Science, Technologie et Innovation, RUFORUM

1. On the future of the African University and needed interventions

In this issue, Akec (2020) reviewed the opportunities for better future of the African higher Education through university lens based on global and regional trends influencing reforms in higher education sector, and proposed necessary policy interventions in order to realise that future. In reviewing the functions of higher education in major western economies (Asby, 1958; Kerr 2001), Akec (2020) explained how education evolved from Greek academies to modern multiversity. The massification and spread of higher education throughout the world was the outcome of the need for a wider sharing of knowledge, and the evolution from one-to-one learning to one-to-many mode of instruction (Ernst and Young, 2017). The initial functions of higher education changed quickly from the ivory towers principle which underpinned the idea of university as institution devoted purely to research and pursuit of knowledge for its own sake to the idea of university being an instrument of service to society. Akec (2020) provided a substantial

background on the reforms that affected the functions of universities globally, basing on the Humboldtian and the Napoleonic Models as well as the French, the Italian and the Japanese Models. The author further emphasized on the third mission apart from teaching and research, as the main pathway for transformation as well as the need for integration of technology in learning in African education. On reflecting on the state of African higher education Akec (2020) explained the factors and trends driving change in higher education systems in Africa, and proposed areas of focus for change. The focus on financing, massification, innovation and better leadership is central for African universities to continue to respond effectively to national and regional agenda and remain relevant to African communities and societies.

In response to the need to develop high-level skills, institutional capacities and critical technical skills, RUFORUM, a network of 129 universities in 38 African countries launched in 2008 doctoral regional training programmes in selected African

universities. Mweetwa *et al.* (2020) revisited RUFORUM's contribution to rebuilding Africa's research capacity through graduate training, and in particular, the then established programs, and how far they have gone in training Master and Doctorate holder professionals in the continent. The establishment of these training programs followed the implementation of RUFORUM strategic vision, which was informed by the needs assessment among the then 10-member universities in Kenya, Malawi, Mozambique, Uganda and Zimbabwe. Based on a demand-led curriculum, seven PhD programmes in rural innovations, food science, soil and water Management, fisheries science, agricultural economics, plant breeding and dryland resource were developed. Further five Master programmes in Agrometeorology and Natural Risk Management, Monitoring and Evaluation, Agricultural Information and Communication Management Plant Breeding and Seed Systems, and Research Methods, were also developed. These programmes have contributed to training over 420 doctorates in Africa, thereby contributing to the development of the continent (Mweetwa *et al.*, 2020). Further, the attractiveness of these RUFORUM regional programmes has resulted into their introduction and adoption by other universities on the continent. To increase African universities competitiveness, appropriate continental initiatives are needed to strengthen university's science, technology and innovation.

2. On the gender participation in Science, Technology and Innovation

The low access of women to education (less than 20% of African women have access to education) is a major constraint hindering

inclusive education and continental growth for the benefit of present and future generations. STEM (Science, Technology, Engineering and Mathematics) sector has been recognized as one of the evolving and expanding fields in the current job potential and opportunity context. Whereas projections suggest that employment in wind and solar energy for example will rise to 8.4 million jobs by 2030, Africa's current stock of skilled graduates is still highly skewed towards the humanities and social sciences, and the proportion of students in STEM averages less than 25 percent (<http://africapolicyreview.com/stem-education-and-african-development/>).

In this issue, four papers addressed gender inclusive participation in Science, Technology and Innovation. Nakayiwa *et al.* (2020) presented a gender focused baseline study on the ST&I ecosystem from four African countries, namely Uganda, Sudan, Mozambique and Ethiopia. The authors observed that female participation in ST&I education is still low and declines sharply at the graduate and academic leadership levels. For instance, in Uganda, despite the affirmative action to increase female enrolment in higher education, participation in STEM programs is still limited (NCHE, 2019), and only 28% of academic and research positions are occupied by women (Nakayiwa *et al.*, 2020). Similar observation was made in other baseline study countries such as Mozambique where numbers of female students at higher education level have remained low compared to the male counterparts. To resolve the situation, the authors recommend policy frameworks at national and institutional level that target the overall education pipeline and provide a facilitating environment that supports

students in STEM and females in the R&D employment sector.

The three other papers also addressed gender aspects in ST&I in Zambia (Phiria and Mwaanga, 2020), Ethiopia (Moges, 2020) and Cameroon (Kinge *et al.*, 2020). A striking common pattern from these studies was the extremely low participation of women in ST&I. For instance, Phiria and Mwaanga (2020) presented a ST&I analysis using a gender-based assessment of ST&I ecosystem in Zambia through a desktop review and key stakeholder discussions approach. The authors found that, although the Government of Zambia has developed policies and strategies to encourage female participation in science, technology and innovation, the latter is still low as in other SADC countries and Africa in general. They recommended a number of critical actions for promotion of women leadership in science and technology and innovation oriented careers. Similar to the observation in Zambia, Kinge *et al.* (2020) reported that the enrolment in ST&I fields is skewed toward males, and more students and lecturers are encountered in the natural sciences, while health sciences, agriculture and engineering record significantly low participation of females. They also reported a more pronounced disparity in the field of engineering where female students are near absent. In Ethiopia, Moges (2020) used both primary and secondary sources of information including journal articles to provide insights into the gender dimension of science, technology and innovation eco-system. The author also found out that the participation of women in the ST&I ecosystem was low in Ethiopia. In particular, undergraduate female

enrollment in science and technology ranged from 31% in 2014 to 34% in 2018, while that of postgraduate female was lower, declining from 31% to 16% (Moges, 2020). For the academic staff, 19.3%, 11.2% and 6.9% of the women were holders of first degree, masters and PhD degrees in science and technology fields of study, respectively. Similar low participation was observed in the research and industry sector. The author attributed such a low participation to the lack of academic preparation for STEM fields, attitude toward science fields, lack of women's self-confidence, lack of women role model scientists, lack of adequate support from higher education institutions and gender disparity in employment. The author suggested that collaborative effort from ST&I stakeholders is critical to implement gender equality -related policies and strategies of the country.

3. On financing and strengthening higher education in Africa

In this issue, three papers addressed financial investments in higher education in the Democratic Republic of Congo (Majaliwa, 2020), in Uganda (Owuor *et al.*, 2020) and Kenya (Mukhwana *et al.*, 2020). Majaliwa (2020) provided an overall overview of the current statistics (including investment) on Higher and Technical Education in DRC, with a focus on ST&I. In essence, it was noted that majority of the HEIs offer technical training followed by university training and pedagogical training (Majaliwa, 2020). The majority of HEIs, particularly the private HEIs are largely dependent on family funding. The author further explained the challenges for Higher Education, including, limited academic

autonomy in selecting leaders and designing programme curricula, proliferation of HEIs, and a plethora of administrative staff both in the ministry and in the HEIs. Finally, the author made substantial recommendations for strengthening the sector, particularly the need to ensure adequate funding of the education system and its future expansion, and to build capacity of HEIs academic and administrative staff, through south-south and north-south partnerships (See Majaliwa, 2020).

Owuor *et al.* (2020) provided a theoretical analysis of public expenditure on education in Uganda. The current increase in resource allocation to tertiary education universities seems to be mainly due to an increase in the number of public tertiary institutions. The authors pointed out that the level of funding at tertiary education level (0.3%) does not reflect the aspirations of the second National Development Plan (1% of GDP). The authors suggested that the current public finance model should take into account the returns to the investment approach and not merely look at provision of social services. For a country like Uganda that has 63% of the total population below the age of 24 years and 50% below the age of 15 years, human capital development through purposive skilling and knowledge formation is critical to achieve the aspirations its vision 2040.

In a discussion paper, Mukhwana *et al.* (2020) presented the status of financing higher education in Kenya, and the development achieved amid the challenges of insufficient funding. The author noted that that has been an increase in tertiary education funding in the recent years, however, unfortunately, this increase has not kept pace with the increasing student

enrollment and numbers. As such, for the country to achieve its expansionary goals for the higher education sector in a financially sustainable manner, it is imperative that the Government increases development funding to the institutions considering the vast growth of the subsector and rapid changes in technology (Mukhwana *et al.*, 2020). Similarly, more investment funding needs to be made in research and outreach for the higher education sector to leverage their impact in society.

CONCLUSION

In this issue, we showcase the recent development of the higher education sector and the gender disparities in access to ST&I education in selected African countries. A striking common pattern across these countries was the extremely low participation of women in ST&I. Although several governments have developed policies and strategies to encourage female participation in science, technology and innovation, the latter is still low in Africa in general. A number of critical interventions were recommended, among which is the need to promote women leadership in science and technology and innovation oriented careers, and for more investments in ST&I in Higher Education but with special attention to addressing the gender disparity.

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STATEMENT OF NO-CONFLICT OF INTEREST

The authors declare that there have no conflict of interest.

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