



African Population and  
Health Research Center

# BURUNDI

## DATA VALIDATION WORKSHOP REPORT

Examining Participation and Quality of  
Experiences of Women in Science Technology  
Engineering and Mathematics (STEM) in  
Burundi



Royal Palace Hotel, Bujumbura, Burundi  
Monday 05th December 2022

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# Acronyms

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<b>APHRC</b>	African Population and Health Research Center
<b>IUCEA</b>	Inter-University Council for East Africa
<b>STEM</b>	Science, Technology, Engineering and Mathematics
<b>ULBu</b>	Light University of Bujumbura/ Université Lumière de Bujumbura

# 1. Introduction

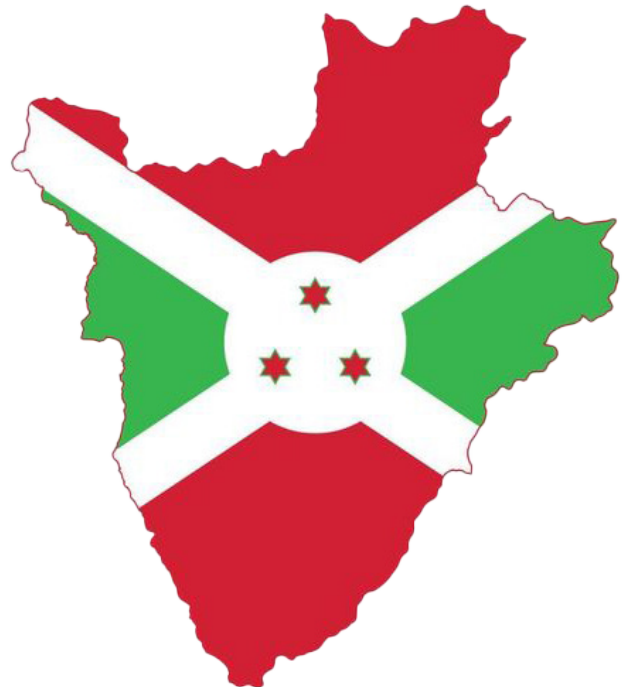
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Postgraduate training in Science, Technology, Engineering, and Mathematics (STEM) is crucial for the development of strong science systems in sub-Saharan Africa, which are essential for achieving the Sustainable Development Goals. Despite its importance, the full potential for scientific progress is often hindered by barriers that prevent women from participating in STEM-related careers.

Effective supervision and mentorship have been shown to have a significant impact on the success of postgraduate students in STEM fields, particularly for underrepresented groups like women. However, to address the challenges faced by women in STEM, it is first necessary to have a clear understanding of the extent of the problem. Unfortunately, limited data on the number of women studying and working in postgraduate STEM programs especially in East Africa makes it challenging to identify gaps in supervision and mentorship specifically for women.

Burundi is a small landlocked country in East Africa and has been facing political and economic instability for decades which has negatively impacted education and professional development opportunities. However, in recent years, there have been efforts to promote STEM education in the country, including initiatives to increase the number of women and girls studying STEM subjects.

Additionally, the socio-economic status and cultural beliefs in Burundi may also contribute to the underrepresentation of women in STEM fields. Despite these challenges, there are still women in Burundi who are pursuing and excelling in STEM careers. In order to achieve gender equality in STEM fields in Burundi, it is important to continue to raise awareness about the importance of STEM education and to provide more opportunities for women and girls to pursue STEM careers.



Burundi

## 2. Validation Workshop

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APHRC conducted a study to examine the gender disparities in STEM postgraduate supervision and mentorship in Burundian universities that are members of the Inter-University Council for East Africa (IUCEA). This study was funded by the International Development Research Centre (IDRC), Canada and utilized a mixed methods approach, including a scoping review, qualitative interviews, online surveys and analysis of secondary data.

On December 5, 2022, APHRC and IUCEA collaborated with Light University of Bujumbura/ Université Lumière de Bujumbura (ULBu) faculty members to host a data validation workshop at the Royal Palace Hotel in Bujumbura, Burundi. The workshop was attended by prominent guests, including the Permanent Executive Secretary of the National Commission of Science, Technology, and Innovation, a representative from IUCEA, and university rectors in Burundi. The aim of the workshop was to review and validate the findings of the study.

### 2.1. Workshop Objectives

The objectives for the workshop were:

1. To present preliminary findings from the study on Participation and Quality of Experiences of Women in STEM.
2. To discuss the key study findings and formulate recommendations.
3. To gather feedback from the key stakeholders on how the data can be more representative of the research area.
4. To discuss, improve and adopt a framework for mentorship and supervision within the East Africa.

### 2.2. Opening Remarks

During the session, various speakers highlighted the significance of the data validation workshop in enhancing our comprehension of ways to enhance women's participation and career advancement in STEM postgraduate programs in Burundi. The workshop was deemed a vital milestone in improving outcomes for women in STEM fields and as a crucial step towards improving outcomes for women in STEM.



## i. Dr. Yves Ndayikunda - Rector of Light University of Burundi



*Dr. Yves Ndayikunda*

In his opening remarks, the Rector warmly welcomed all participants, including representatives from IUCEA and APHRC, as well as the Permanent Executive Secretary of the National Commission of Science, Technology, and Innovation. He highlighted the purpose of the workshop, which was to review and validate findings of a study on the participation and experiences of women in STEM postgraduate programs in Burundi.

The rector emphasized on the importance of the workshop and its role in expanding knowledge on improving women's engagement in STEM fields. Highlighting on the significance of the ongoing 16 days of activism against gender-based violence he stressed on the need for everyone to work together towards gender equality. The findings of the study he said, would play a crucial role in advancing opportunities for women and girls in STEM.

Dr. Ndayikunda stated that sustainable, inclusive, and participative development requires the consideration of women and girls. In Burundi, he added, ULBu is the only university offering a Master's program in Gender therefore demonstrating its commitment to promoting gender equality in the sciences. He further highlighted the significance of the study in the context of the global efforts to increase gender equality and women's participation in STEM fields and

in providing evidence-based insights into the current state of women's experiences in STEM postgraduate training programs in Burundian universities. This evidence would inform and guide efforts to address the barriers that women face in pursuing STEM careers and ensure that their experiences are positive and supportive.

"There is a need for continued collaboration between universities, research institutions, and government organizations to address the gender gap in STEM and promote equal opportunities for women. By working together, they can create a more inclusive and equitable environment for women to pursue their passions and achieve their full potential in STEM fields," he concluded.



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## ii. Dr. Anne Khisa - African Population and Health Research Center



*Dr. Anne Khisa*

Dr. Anne Khisa thanked the Burundian government and ULBu for hosting the meeting. She highlighted APHRC's focus on public health

research and its 20-year commitment to research and capacity-building. Dr. Khisa decried the low representation of African research in peer-review, calling for more African research to improve the current statistics. She emphasized the importance of including women and girls in the rapidly growing science, technology, and innovation sector, and stressed the need for men's support.

The low representation of women in STEM fields was not only an issue in Burundi, but a global challenge, she stated. "It is therefore crucial that we have efforts geared towards increasing the participation of women in STEM education and careers as it leads to a more diverse and inclusive workforce, and ultimately contributes to the overall development and progress of society," she went on.

Dr. Khisa called for systemic change and more effective policies, programs and initiatives that support and encourage women's participation in STEM fields. She observed that men play a great role in supporting and promoting women's participation in STEM, and a collaborative effort between men and women is crucial in achieving gender equality in STEM. The future of STEM fields depends on the equal participation of women and men, she said. She called for action to make this a reality.

### iii. Dr. Salome Guchu – Inter-University Council for East Africa



*Dr. Salome Guchu*

Dr. Guchu acknowledged the important role of IUCEA in promoting and supporting higher education and research in East Africa. She noted that IUCEA is dedicated to enhancing staff mobility, providing scholarship opportunities, and promoting research programs and projects to support the development of higher education in the region. She said that it is important to understand the current situation and role of IUCEA, so that they can make informed decisions on how to improve their operations and better serve the region.

She pointed out the importance of accurate and relevant data and evidence on the ground for informed decisions and avoid working in a hazardous environment. She called for a more focused attention on understanding what is happening in the region, identifying best practices, and addressing existing challenges and opportunities.

Further, Dr. Guchu emphasized the significance of promoting research and development in Africa and encouraging the equal participation of women and girls in scientific disciplines. She noted that IUCEA is committed to supporting and advancing the education sector in East Africa and working with partners such as APHRC and ULBU to achieve this goal. Overall, her speech highlighted the need for more effective and informed decision-making in higher education and research in Africa.



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#### **iv. Prof. Masharubu Tatien, Permanent Executive Secretary of the National Commission of Science, Technology, and Innovation**



*Prof. Masharubu Tatien*

The Permanent Executive Secretary of the National Commission of Science, Technology, and Innovation, Prof. Masharubu Tatien stressed on the crucial role of research in national development, terming it not only the responsibility of researchers and academics, but of all individuals committed to their country's progress.

He noted that the Burundian government has given a high priority to research. The Ministry of Education supported the workshop on Women's Participation and Quality of Experiences in STEM fields in Burundi by sending him as a representative.

The Secretary who officially opened the workshop said it is important to challenge socio-cultural biases against women in STEM in Burundi and

to establish mentorship programs to empower them. He encouraged the participants to work towards creating a robust research infrastructure in the national education system, and to make recommendations for enhancing women's participation in STEM fields. He acknowledged the support of the workshop's partners in promoting women's empowerment.

The Secretary further stressed the importance of breaking the stereotypes and promoting mentorship for women in STEM, recognizing the vital role that women can play in the development of the nation.

## 3. Presentations of Study Results

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The study revealed a persistent underrepresentation of women in STEM fields, both in Africa and globally. Despite the low numbers of women in STEM, the study showed that even those who graduate face difficulties in securing and advancing in STEM careers.

The study was guided by several questions, including the gender distribution of students in STEM postgraduate courses, differences in gender distribution of graduates and faculty, and practices that promote or hinder gender equality in STEM postgraduate training and careers.

The study also explored the impact of the Covid-19 pandemic on women's progress in STEM postgraduate training and careers.

It was notable that the percentage of women in STEM fields in Burundi is still low, and there is a lack of mentorship and networking opportunities for women in STEM careers. In conclusion, the study highlights the need for continued efforts to address the underrepresentation of women in STEM fields and the challenges they face in securing and advancing in STEM careers.

### 3.1. Scoping Review

The process for examining journal articles and policy documents related to STEM in Sub-Saharan Africa was showcased during a scoping review presentation. The scoping review articles were peer-reviewed publications sourced from various electronic databases. However the team had challenges accessing relevant materials from Burundi since most publications from Burundi are in French, making it difficult for non-French speakers to extract the publications.

The study shared regional insights from the articles, emphasizing the key challenges that women in STEM face, including societal expectations and familial responsibilities. It underscored the critical role of scholarships, leadership opportunities, and gender-inclusive hiring practices in enhancing women's participation in STEM fields.

The importance of mentorship and supervision was also highlighted, demonstrating their effectiveness in encouraging women to pursue STEM education and in challenging negative stereotypes. The findings suggested that fostering women's representation in STEM requires creating leadership opportunities, offering scholarships, promoting mentorship, and addressing stereotypes.

Continuous monitoring and evaluation of gender equality in STEM programs would ensure that they are effective in addressing the challenges faced by women in STEM fields. This includes collecting and analyzing data on the representation of women in STEM fields, their experiences, and the barriers they face. In conclusion, Ms. Mwangi noted that the findings of the scoping review emphasized the importance of addressing the obstacles faced by women in STEM fields and

the role of universities, government agencies, and other relevant stakeholders in promoting women's representation in STEM through the implementation of policies and programs that support and encourage women to pursue and succeed in STEM careers.

The discussion during the questions and answers session revealed some of the key areas of concern and interest among the participants. The questions related to the study population, the challenges faced by the researchers while administering the online survey, the lack of cooperation between old and young women in STEM, the intention of APHRC to share the evidence with decision-makers in the East African Community, and the strategies that APHRC would put in place to ensure successful implementation of the workshop outcomes.

A participant observed that there were many journal articles and documents related to STEM in Burundi. However, most of them were in French, the official language of Burundi, making it difficult for non-French speaking individuals to access this information.



"The findings emphasized the importance of addressing the obstacles faced by women in STEM fields and the role of universities, government agencies, and other relevant stakeholders in promoting women's representation in STEM through the implementation of policies and programs that support and encourage women to pursue and succeed in STEM careers."

In response to these questions and concerns, the participants made several suggestions for how to move forward with the project:

- Each participant would receive the workshop materials via email.
- Every stakeholder would decide on how best they would contribute to the success of this project.
- Participants suggested that a focal point in each country be identified to ensure that quality data is collected.
- In-country partnerships should be extended to many other companies interested to ensure that STEM graduates are absorbed into the labour force as a way to encourage enrollment in STEM courses

### 3.2. Quantitative Data



*Ms. Leah Mwangi*

In the quantitative aspect of the research, data was gathered from institutions affiliated to IUCEA in Burundi and analyzed. The analysis was done to evaluate the disparities between genders in post-graduate STEM programs in IUCEA's member universities. The analysis covered two crucial aspects of women in STEM;

- i. Gender balance, including the ratio of female students enrolled and graduated from various

STEM-related post-graduate programs.

ii. Gender breakdown of STEM faculty at different academic levels over the past decade, to get a glimpse of the availability of female supervisors and mentors.

Ms. Leah Mwangi shared findings from the secondary data collected from five universities in Burundi. The findings indicated that there was a significant gender imbalance in enrollment and graduation numbers in STEM programs at both the PhD and Master's levels.

The number of women enrolled in STEM degrees, especially at the PhD level, was low with only one female student enrolled for a PhD in Physics in the academic year 2017-2018 and three enrolled for a PhD in Mathematics in 2019-2020. There was a significant disparity between male and female enrollment in STEM master's degree courses, with 132 female students compared to 1030 male students enrolled between 2011 and 2019.

Despite this, most women enrolled in STEM fields between the academic years 2011-2012 and 2012-2013 were pursuing studies in various fields, including electrical engineering, civil engineering, mechanical engineering, food science and technology, medical specialties, health economics, medical care, biology, chemistry, mathematics, physics, statistics, and informatics.

### Key Insight:

Low enrollment of women in STEM degrees, especially at the PhD level, can result in a number of negative repercussions for an African country.

Firstly, it can lead to a significant gender imbalance in the STEM workforce, resulting in a lack of diversity in the field. This can lead to a narrower range of perspectives and ideas, which can impact the overall quality of research and innovation in the country.

Additionally, a low representation of women in STEM can also act as a deterrent for other women interested in pursuing careers in these fields, perpetuating the cycle of underrepresentation.

Furthermore, a low number of women in STEM fields can have a negative impact on the economy, as the country may not be able to fully tap into the potential of its female population to drive innovation and growth.

Ultimately, addressing the underrepresentation of women in STEM is important for promoting gender equality and maximizing the potential of all members of society.

The findings revealed a significant disparity in female representation in STEM programs, especially in PhD studies, emphasizing the importance of acting to rectify this imbalance.

### 3.3. Comparison of trends

Ms. Mwangi highlighted various trends that highlighted the number of women enrolled in Master's degree programs and PhD programs between 2011 and 2020, as well as the number of female lecturers in different STEM fields.

The findings revealed a clear disparity in female representation in STEM programs, particularly at the PhD level. Despite the increasing number of women enrolled in Master's degree programs, the number of women enrolled in PhD programs remained low. Furthermore, the data showed that even in STEM faculties, women were not represented at the same level as men.

## Key Insights:

1. There was a slight increase in the number of women enrolled in Master's degree programs between 2011 and 2020, but the transition of female students to PhD programs remained low.
2. The low number of female enrollments in STEM programs was further exacerbated by the political crisis in Burundi in 2015-2016.
3. The number of male students enrolled in PhD programs was significantly higher compared to the number of female students enrolled in PhD programs.
4. There was a disparity in female representation in STEM faculties, with the number of female lecturers in agriculture, engineering, health and welfare, and science being 3, 4, 6, and 15 respectively, while the corresponding numbers for male lecturers are 20, 42, 13, and 103.
5. Science courses had the highest number of both male and female lecturers at the PhD level, followed by engineering. Agriculture courses had fewer female lecturers.

In conclusion, the contribution of women researchers was acknowledged and the need to address the lack of motivation for Burundian women to pursue STEM courses was highlighted.

### 3.4. Qualitative Data (Focus Group Discussion (FGDs), key Informant Interviews (KIIs) and Online Surveys)

In order to identify factors that promote or hinder women's participation in STEM-related postgraduate careers we conducted 14 KIIs. Also, to explore experiences of women in STEM in Burundi we conducted one FGD. We triangulated multiple sources of data on the experiences of women in STEM postgraduate studies and

careers. We interviewed faculty and postgraduate students to gain insights and refine the research questions. This was complemented by an initial review of policies related to training, recruitment, promotion, and retention of women in STEM. This was followed by a quantitative survey of the same participants.

The final stage involved combining the results from both qualitative and quantitative data to form a comprehensive picture of the findings, increasing their significance. Throughout the study, qualitative and quantitative methods were given equal consideration and importance in answering the research questions.

Various data sources were used to examine the experiences of women in STEM graduate studies and careers, including primary data (questionnaires, in-depth interviews, and focus group discussions) and secondary data (policy documents and existing data sets). The results of both qualitative and quantitative data were collected and synthesized to produce integrated findings on ways to improve the participation of women in STEM graduate programs in Africa.

The findings were used to develop a framework to enhance the participation and experiences of women in STEM-related post-graduate training and careers advancement. The online survey targeted both men and women postgraduate students pursuing STEM courses at Masters, PhD and postdoctoral programs. In addition, career faculty and researchers working in STEM departments in universities and research institutions were invited to participate.

### 3.5. Findings

The results reveal significant gender disparities in the STEM field in Burundi, where only 16% of responses were from women and 81% from men. This disparity may be due to the busy schedules of women in Masters and PhD programs or the limited number of women in STEM fields. Additionally, the study found that over 70% of scientists in Burundi are located in urban areas, highlighting the need for STEM programs in rural regions and more role models in those areas.

The survey also showed that men were more likely to be enrolled in postgraduate programs. The lack of female teachers in STEM faculties was also identified as an issue, affecting mentorship and role model programs for girls in STEM. However, the study found that the gender of the supervisor had a neutral or positive effect on supervision, with only a few cases of negative effects in supervision relationships between male and female or opposite gender individuals.

In conclusion, Ms. Mwangi emphasized the need for more female mentors in the East African region and the importance of addressing gender disparities in STEM-related postgraduate training and careers. This can be achieved by promoting access to education and resources for women, encouraging girls to pursue STEM careers, and creating a more inclusive work environment in STEM industries. By doing so, African countries can maximize the potential of all members of society and contribute to the growth and development of the STEM field.

## 4. Supervision and Mentorship Framework

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The Supervision and Mentorship Framework was introduced as a tool to address the issue of gender disparity in STEM fields. Dr. Anne Khisa asked the participants three guiding questions to understand the Burundi situation in STEM programs and to find ways to improve it.

- a) Was the quantitative data a true representation?
- b) Could the situation be improved to have an equal number of men and women in STEM programs?
- c) What strategies could be put in place to bring the desired changes.?

Dr. Dieudonne Uwizeye defined the concept of mentorship and emphasized the importance of having a good supervisor who should be available for consultation, gives encouraging advice, puts in place tracking mechanisms, introduces the supervisee to other students, engages with the supervisee's existing issues, has a well-equipped laboratory, is well-informed, and is sensitive to gender issues.

This session was aimed at providing a comprehensive understanding of mentorship and its role in resolving gender disparities in STEM programs. The stakeholders highlighted the need for more female mentors in STEM fields and the impact that mentorship can have in improving the representation of women in STEM programs.

The lack of female role models in STEM fields was identified as a challenge and mentorship was presented as a solution to help address this issue. Stakeholders noted that while gender distribution was a problem in STEM faculties, the impact of gender on supervision had a neutral or positive effect. However, there were a few cases where male respondents reported negative effects in a supervision relationship of both male-female or opposite gender.

In conclusion, the stakeholders stressed the importance of addressing gender disparities in STEM fields and the need for more initiatives to support women in STEM. The mentorship framework was presented as a tool that could be used to increase the number of women in STEM and to improve the representation of women in STEM programs. The stakeholders emphasized on the need for more comprehensive mentorship programs, greater awareness of gender issues in STEM, and the promotion of female role models in STEM fields.

## 4.1. Group Discussions

The participants were divided into four groups and each group tackled a specific question as highlighted below. The teams shared the deliberation using a table that mapped out each element of the different actors of supervision.

**Question 1:** What aspects of supervision are most important in Burundi? And among the actors of supervision who should do what?

Actors	Responsibilities	Activities	Indicators of success
Supervisor	Trainings	<ul style="list-style-type: none"> <li>To teach</li> <li>To guide</li> </ul>	<ul style="list-style-type: none"> <li>Success of the supervisee</li> <li>Research publications of the supervisor</li> </ul>
	Accompaniment	<ul style="list-style-type: none"> <li>To orient</li> <li>To correct</li> <li>To encourage</li> <li>To guide</li> </ul>	<ul style="list-style-type: none"> <li>Respect of the deadlines</li> <li>Success of both the supervisee and the supervisor</li> </ul>
Supervisee	Study and complete assignments in time	<ul style="list-style-type: none"> <li>To be diligent</li> <li>Insert suggestions and recommendations done by the supervisor</li> <li>To present his/her report to the supervisor regularly</li> <li>To work in teams with other students</li> <li>To innovate</li> </ul>	<ul style="list-style-type: none"> <li>Success of the supervisee</li> <li>Publications from the supervisee</li> </ul>

**Question 2:** What aspects of mentorship are most important in Burundi? And among the actors of supervision who should do what?

Actors	Responsibilities	Activities (group members have considered activities as fields or domains)	Indicators of success
Mentor: professors, supervisor, professionals	<ul style="list-style-type: none"> <li>To guide</li> <li>To orient</li> <li>To correct</li> <li>To advice</li> <li>To support</li> </ul>	<ul style="list-style-type: none"> <li>Academic field</li> <li>Industrial field</li> <li>Social field</li> <li>Economic domain</li> <li>Political field</li> <li>Religious field</li> </ul>	<ul style="list-style-type: none"> <li>The number of mentees will increase</li> <li>Increase of the life standards</li> <li>Increase of the academic level</li> <li>Increase his networking</li> </ul>
Mentee: students	<ul style="list-style-type: none"> <li>To accept to learn</li> <li>To apply what he learned</li> <li>To submit his report to the mentor</li> <li>To have humility towards his mentor</li> </ul>		<ul style="list-style-type: none"> <li>The mentee will receive a certificate at the end of his program</li> <li>His academic level will increase</li> <li>His life standards will also increase</li> </ul>

**Question 3:** Among the actors of supervision and mentorship, who should act and how should success look like?

The stakeholders noted that actors involved in supervision and mentorship typically include supervisors and supervisees. The supervisor is responsible for providing guidance, training, and support to the supervisee. Success for the supervisor in this role can be indicated by the success of the supervisee, including meeting deadlines and producing high-quality work. Additionally, the supervisor's own research and professional development can also be indicators of success in this role.

The supervisee, on the other hand, is responsible for completing their assigned work and incorporating feedback and suggestions from the supervisor. Success for the supervisee can be indicated by personal achievement, such as completing work to a high standard and producing work that leads to publication. It is also important for the supervisee to work effectively with the supervisor, as well as with other students in a team setting.

Overall, the group unanimously agreed that successful supervision and mentorship in East Africa requires collaboration, communication, and a commitment to mutual goals from both the supervisor and supervisee. Additionally, there are several reasons why universities may choose to separate supervision from mentorship.

- a) The mentor often has a closer relationship with the student and therefore is better equipped to support and guide the student to success.
- b) Conflicts between the supervisor and supervisee can be disruptive to the supervision program and hinder its success.
- c) The supervisor is primarily focused on academic matters, while the mentor takes a more holistic approach and considers the mentee's social life as well.
- d) Lastly, there may be concerns that the supervisor may take advantage of opportunities or take credit for the work of the supervisee.

The team highlighted that it was important to note that separating supervision and mentorship is not a universal approach and may not be necessary or effective in all situations. Each institution and program must assess its own needs and determine the best approach to support students in their academic and professional development.

**Question 4:** During training of postgraduate students in STEM, should mentorship be separated from supervision? If yes, why and how should we separate them? If no, why and how then should we introduce mentorship? (Think of the case of Burundi)

Stakeholders in this group concurred on the importance of separating mentorship and supervision in their academic programs. At the master's level, students often require a mentor to help them identify their strengths and develop the competencies necessary for success in their future careers. However, at the PhD level, where students typically have a more concrete understanding of their research interests

and career goals, it may be possible to integrate both mentorship and supervision into the academic program.

To ensure effective separation of mentorship and supervision, universities can establish commissions or committees to carefully select mentors who possess the necessary skills and experience to collaborate effectively with students. These committees should also have mechanisms in place to monitor the quality of mentorship and ensure that students are being adequately supported. Furthermore, universities can provide training opportunities for mentors to build their capacity and better serve the needs of students. By doing so, they can provide students with the support they need to achieve their academic and career goals.



To ensure effective separation of mentorship and supervision, universities can establish commissions or committees to carefully select mentors who possess the necessary skills and experience to collaborate effectively with students. These committees should also have mechanisms in place to monitor the quality of mentorship and ensure that students are being adequately supported.

## 4.2. Reflection on Group Presentations

The presentations raised a lot of questions regarding mentorship and supervision, one of which was about the funding for mentors. The stakeholders were in agreement that universities should incorporate mentorship into their programs, and include all staff members, including non-research personnel like finance officers and library staff, into the mentorship program. It was concluded that anyone can be a mentor, as long as they have a good understanding of research and the ability to guide and inspire students.

One presenter pointed out that the absence of mentorship in Africa could lead to difficulties in professional success. Mentors must possess the qualities of being knowledgeable, experienced, and inspirational, in their respective fields such as academia, business, politics, or religion.

Stakeholders noted the difficulties faced by women in STEM fields, which go beyond financial issues, such as the orientation system in educational institutions, the high cost of offering STEM courses

with well-equipped labs, and additional challenges like family duties, Covid-19, household activities, and stereotypes. Although the background of women not applying for financial scholarships was not discussed, the focus was solely on the financial support aspect.

A question was then posed about the availability of private universities offering masters in STEM in Burundi. The response was that offering STEM courses can be costly due to the requirement of Well-equipped labs for hands-on experiences. To delve deeper into the challenges faced by women in STEM, besides financial difficulties, another question was asked. Despite the East African Community providing financial scholarships, women still do not apply for them. The discussion did not consider the underlying reasons, focusing solely on financial support. However, other factors such as family duties, the Covid-19 pandemic, household responsibilities, and stereotypes can pose obstacles for women in STEM.



## 5. Recommendations

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During the discussion, participants made several recommendations to improve the education system in Burundi.

- a) The Burundian Ministry of Education should allow students to choose their faculties based on their interests.**
- b) The Inter-University Council for East Africa together with African Population and Health Research Center (APHRC) and other partners should encourage universities to offer both PhD and master's level courses in STEM fields.**

Additionally, the participants also suggested that the Ministry of Education should offer more resources and support to students who choose STEM fields. They also emphasized the importance of encouraging women to pursue careers in STEM, and addressing the obstacles they face, including family duties, the Covid-19 pandemic, household responsibilities, and gender stereotypes.

The participants also stressed the importance of ensuring that STEM courses are accessible to everyone, regardless of financial status, and that universities should provide adequate funding for well-equipped labs. To enhance the quality of education in STEM fields, the participants also recommended ongoing professional development for mentors and teachers in these fields.

## 6. Closing Remarks

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*Mrs. Dorine Rwehera*

Mrs. Dorine Rwehera who is in charge of the East African Council Scholarship Programme at the Inter-University Council for East Africa for IUCEA thanked ULBu and APHRC for conducting valuable research on the participation and quality of experiences of women in STEM in Burundi. She thanked the participants and researchers for their valuable inputs while emphasizing the findings of the research, which revealed the existence of gender disparity in STEM programs, and stressed the importance of supporting women in all areas of education. She also confirmed IUCEA's unwavering support for education initiatives.

Finally, she highlighted that the gender gap in STEM continues to persist and is a hindrance for women pursuing careers in these fields. Therefore, it is crucial to keep working towards promoting gender equality and inspiring women to explore opportunities in STEM.

# Annex 1: Agenda

## Data Validation Workshop

### Examining Participation and Quality of Experiences of Women in Science Technology Engineering and Mathematics (STEM) in Burundi

Date: 05th December 2022

Venue: Royal Palace Hotel, Bujumbura, Burundi

Time	Activity	Description
8:00-9:00 a.m.	Registration and Morning tea	<p>Participants registration and zoom log in for APHRC staff from Nairobi (IDRC Breaking barriers team - APHRC)</p> <p>Admin &amp; Logistics (APHRC) – Lisa Omondi (APHRC)</p> <p>Rapporteur &amp; Note taker – Light University Burundi</p> <p>Program facilitator: Leah Mwangi (APHRC)</p> <p>Rapporteur – University of Rwanda</p> <p>Note taker – University of Rwanda</p>
9:00-9:40 a.m.	Official Opening	<p>Opening Remarks (10 min per speaker)</p> <ol style="list-style-type: none"> <li>1. Dr. Yves Ndayikunda – Rector of ULBU</li> <li>2. Dr. Anne Khisa - APHRC</li> <li>3. Dr. Salome Guchu- IUCEA</li> <li>4. Permanent Executive Secretary of the National Commission of Science, Technology, and Innovation - Burundi</li> </ol>
9:40-11:00 a.m.	Introduction, Methods and Data Analysis	<p><b>Presentations</b></p> <ol style="list-style-type: none"> <li>1. General Overview of the study &amp; scoping review – Leah Mwangi (20 min)</li> </ol>

<b>11:00-11:15 a.m.</b>	Health Break	All participants to take a group photo
<b>11:15 -11:45 p.m.</b>	Presentation of preliminary findings	2. Quantitative data (secondary and online surveys) (30 min) <i>Leah Mwangi / Dr. Anne Khisa</i>
<b>11: 45 - 12 :15 p.m.</b>	Presentation of preliminary findings	3. Qualitative data and draft supervision and mentorship framework (30 min) – <b>Dr. Anne Khisa</b>
<b>12: 15 -1: 00 p.m.</b>	Group discussion and plenary	4. Validation of supervision and mentorship framework (45 min) – <i>Dr. Dieudonne Uwizeye</i>
<b>1: 00 p.m. – 2:00 p.m.</b>	Lunch	
<b>2:00 – 3:00 p.m.</b>	Plenary discussion	5. Questions, answers and reflection – Validation of supervision and mentorship framework (60 mins) <i>Dr. Dieudonne Uwizeye &amp; Dr. Anne Khisa</i>
<b>3:00 – 3 :30 p.m.</b>	Official closing	Closing remarks <b>Mrs. Dorine Rwehera – IUCEA</b>
<b>3:00 p.m.</b>	Refreshment and departure	

## Annex 2: List Of Participants

	Full Names	Designation	Institution
1	Dr. Daniella Simplice Kanyamuneza	Doctor	ULBU
2	Dorine Rwehera	Coordinator-EAC Scholarship Programme	Inter-University Council for East Africa (IUCEA)
3	Dr. Innocent Ndacasaba	Director	Bujumbura Light University (ULBU)
4	Irakoze Irene	PhD Student	University of Burundi
5	Prof. Marie-Josee Bigendako	Deputy Vice chancellor	Bujumbura Light University (ULBU)
6	Christophe Bavumuragire	Faculty	Bujumbura Light University (ULBU)
7	Mashire Nishimwe	Staff - ULBU	Bujumbura Light University (ULBU)
8	David Byamungu	Lecturer	Bujumbura Light University (ULBU)
9	Senene Franca Xavier	Director	Polytechnic University of Gitega (UPG)
10	Gatore Kelly Joelle	PhD student	University of Burundi
11	Dr. Uwizeye Dieudonne	Researcher	University of Rwanda
12	Anne Khisa	Researcher	APHRC
13	Nshimirimana Pascaline	Researcher	ENS, Burundi
14	Karimumuryango Menedore	Researcher	University of Burundi
15	Prof. Claver Nijimbere	Director General Science	Ministry of Education
16	Armel Ishimwe	Lecturer	Bujumbura Light University (ULBU)
17	Hassan Nusura	Director General	Ecole Normale Superieuer (ENS)
18	Ntakarutimana Vestine	Professor	University of Burundi
19	Salome Guchu	Principal Innovation and Outreach Officer	IUCEA
20	Lisa Omondi	Programs Administrative Officer	APHRC

<b>21</b>	Sayumwe Silas	Rector	UPG
<b>22</b>	Lysa Carole Niketa	Professor	Bujumbura Light University (ULBU)
<b>23</b>	Gasogo Anastacie	Lecturer	University of Burundi
<b>24</b>	Prof. Masharabu Tatien	Permanent Executive secretary	
<b>25</b>	Marie Goretti	Lecturer	University of Lake Tanganyika
<b>26</b>	Bagorizamba Ancille	PhD Student	University of Burundi
<b>27</b>	Niyonkuru Diane	Staff member	Light University
<b>28</b>	Nsabimana Mich	Staff member	Bujumbura Light University (ULBU)
<b>29</b>	Nyiraguirwa Solange	Faculty	University of Ngozi
<b>30</b>	Dr. Nijimbere Criaque	Lecturer	Light University
<b>31</b>	Tuyishemeze Theoneste	Postgraduate Student	Light University
<b>32</b>	Dr. Benigne Ngendakumana	Lecturer	University of Ngozi
<b>33</b>	Schulus Mbonihambaye	Lecturer	Hope Africa University

