

IMPACTMAG

Oct 2017 Vol. 1

Celebrating Achievements



A glimpse of research cooperation between
Sweden and the University of Rwanda

THIS ISSUE IN BRIEF



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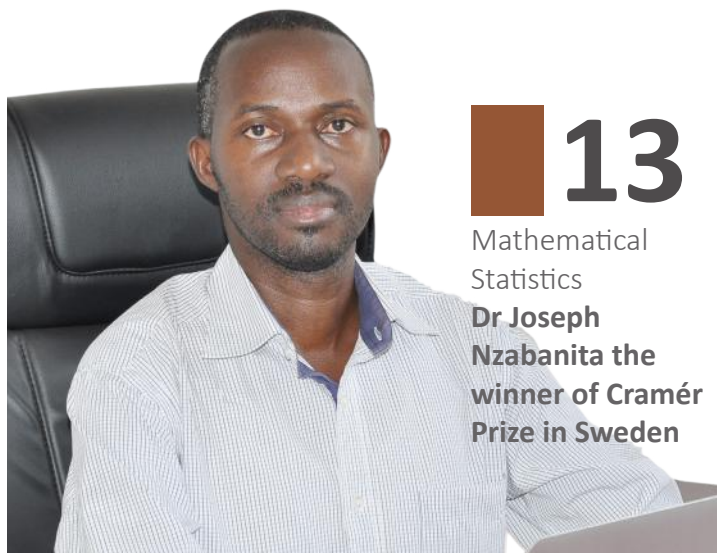
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We regret any errors or omission that may have been unwillingly made

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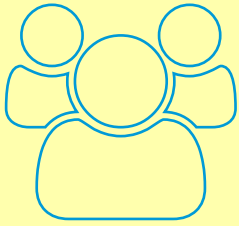


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ICT Support
Empowering the University community to keep up with ever evolving ICT technologies

UR-SWEDEN PROGRAMME

AT A GLANCE



OUR SUBPROGRAMS

- Agriculture
- Economics and management
- Medicine & Public Health
- Applied Math & Statistics
- ICT Research: E-government
- GIS & Remote Sensing
- Telecommunication & Comp. Science
- Environment
- Peace and Conflict
- Law
- Library
- ICT Infrastructure
- Management Information system
- Instructional Technology
- Research & Postgraduate Office
- Research Grants
- Innovation Centre
- Institutional Advancement
- Program Coordination & Resource Mobilization Office



SKILLS DEV'T

57

Continuing PhD students

41

PhD graduates

200+

Masters students



RESEARCH PROJECTS

90

Ordinary Research

47

Post-docs Research



RESEARCH CAPACITY

- PhD training & other trainings for academic staff (entrepreneurship, acad writing)
- Startup of UR PhD Programs
- Research guiding Policies,
- Research Conferences/ exhibitions/ seminars
- Postdoc & research grants for qualified researchers
- Lab Equipment/ Reagents



HIGHER EDUCATION

- Master programs
- Curriculum harmonization and development
- Technology supported learning



INSTITUTIONAL ADVANCEMENT

- Integrated library management mechanism
- Purchase of Books & Subscription to E-journals
- ICT infrastructure & ICT Support
- University wide Integrated MIS
- Institutional policies & UR Branding
- Admin staff capacity building
- Management & Mobilization of External resources

OTHER AREAS OF INTERVENTION

- More than 410 Publications supported (2007-2017)
- Supports UR conference & stakeholders' forums (eg.law)
- supported institutional policies & reform efforts
- Co-creation & Skills transfer btn UR & Swedish Uni
- Capacity building for administrative staff
- Development of UR ICT infrastr + Data centre
- Supported UR Resource mobilization efforts

Message by the Vice-Chancellor



Prof. Philip Cotton - University of Rwanda

Four years ago the Government of Rwanda established the University of Rwanda (UR) as a result of a merger of 7 Public Higher Learning Institutions. It is currently organized into six Colleges across 10 campuses: College of Arts and Social Sciences (CASS), College of Agriculture and Veterinary Medicine (CAVM); College of Business, and Economics (CBE); College of Education (CE); College of Medicine and Health Sciences (CMHS); and College of Science and Technology (CST).

The University of Rwanda supports the development of Rwanda by discovering and advancing knowledge, by being committed to the highest standard of academic excellence and by creating a place where students are prepared for lives of service, leadership and solutions.

The main purpose of creating this national institution is to enhance the quality of Rwanda's higher education provision, while achieving economies of scale and efficiency in its operation. UR is expected to become a leading African University.

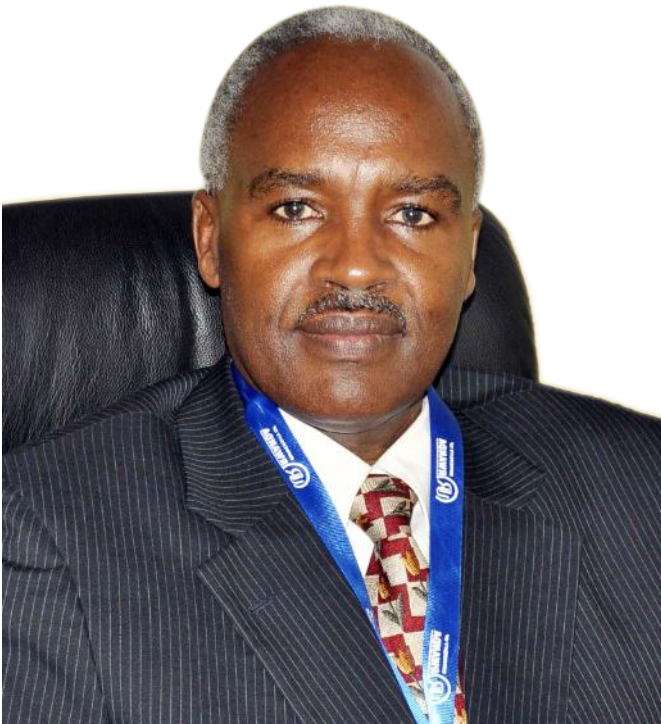
To realise this vision, the University of Rwanda invests and aspires to be a research led University. This requires a focused and concerted improvement in the research uptake and research publication and this is paying off. Last year 2016 the University

research output doubled, and Rwanda became the most influential research country in East Africa according to Clarivate Report 2016 and the University of Rwanda became the second most influential university in East Africa.

This interesting journey has been possible because of partnerships with many countries and organisations in Rwanda. One of the most exciting and comprehensive partnerships is the UR-Sweden bilateral research cooperation. The cooperation with Sweden supports all areas of research capacity. There are a lot of tangible outcomes from the Programme, the number of international conferences, the number of conference presentations, the research papers, the number of people who achieved their Master's and PhD's. For example, Swedish Foundation for International Cooperation in Research and Higher Education (STINT) recently presented an analysis of co-publication between Rwanda and Sweden between 2011 and 2016, and found that when Rwanda and Sweden publish together, the citation is 5 times higher than when Sweden or Rwanda publish alone.

There are also many less tangible gains such the relationships that have built up between academics, between administrators, and between Universities that have actually have led to pursuing other research grants, pursuing publications and other joint interests. The University is an important player in this country reaching middle-income status with a knowledge-based society, and we strongly believe in the power of the research cooperation with Sweden in this endeavour.

Message by the Deputy Vice-Chancellor for Institutional Advancement



Amb. Dr. Charles Murigande - *University of Rwanda*

The 1994 Genocide against the Tutsi which claimed about one million lives, depleted Rwanda's human capital. The National University of Rwanda lost most of its lecturers because they were either killed or had played a role in the genocide and fled the country when the genocidal government was defeated. Out of the 250 lecturers it had, only about 40 remained. The new post-genocide government, convinced of the important role that this University was expected to play in the development of human resources needed for the rehabilitation, reconstruction and development of the country, decided, against all odds, to reopen it and to even create new higher learning institutions such as the Kigali Health Institute (KHI), Kigali Institute of Science and technology (KIST), Kigali Institute of Education (KIE), the School of Finance and banking (SFB), etc. All these higher learning institutions faced huge shortage of lecturers and the few they had, had no time to carry out research as expected of any higher learning institution.

In 2000, the Government of Rwanda adopted its vision for development known as Vision 2020 which aimed at moving Rwanda from an agrarian economy

to a knowledge-based economy with the objective of becoming a middle-income country by 2020. It was obvious that this could not happen without highly qualified and competent human resources, thus the need of a critical mass of highly qualified lecturers to deliver quality education and impactful research.

Although, in early 2000s most of Rwanda's development partners were reluctant to support higher education and were still insisting that all Rwanda needed was to develop basic education, in 2002, Sweden, through the Swedish International Development Agency, accepted to launch at the National University of Rwanda, what is now known as UR-Sweden Program for Research, Higher Education and Institutional Advancement. This program has contributed to developing teaching and research capacity at the University of Rwanda, by offering Master and PhD training opportunities to junior lecturers. Acquiring Master Degrees of PhDs not only qualified these junior lecturers to teach at the university but also trained them to doing research. The program has also contributed to creating a research environment by providing ICT infrastructure, supporting the start of several Master programs, modernization of Library services as well as the training in research management and PhD supervision which has contributed to the start of PhD by research at the University of Rwanda. The program has not only trained people in doing research and created an enabling environment for research, it has also provided a research fund which is accessed to through competition, thus training UR lecturers to write research grant proposals. The Programme has had far reaching positive impact not only on the University of Rwanda development but also on the country in general. It has produced more than 40 PhDs some of whom are working at the University training many more Rwandans and carrying important research on Rwanda's development challenges and others are working for various public institutions, contributing to formulation and implementation of many of the policies that are leading to Rwanda's steady socio-economic progress.

The research capacity that has been created through the UR-Sweden Programme has already started bearing results. Indeed, thanks to this research capacity, UR was able to competitively win four (4) African Centers of Excellence from the World Bank, a Regional Center of Excellence in Biomedical Engineering from the African Development Bank, a Center of Excellence in Vaccines, Immunization and Health Supply Chain Management from EAC and KfW and a Center of Excellence in Biodiversity and Natural Resources Management supported by UNESCO. There is no doubt that UR-Sweden Programme has

been the single most important cooperation in terms of developing UR's research and teaching capacity. I would like to express my sincerest appreciation to the Government of Sweden for this enormous support to Research and Higher Education in Rwanda and to all who have been or are still involved in implementing the UR-Sweden Program in Rwanda and Sweden. In particular, I express my sincerest thanks to the team leaders of the various sub-programs as well as the Project Coordination Office team for their dedication and commitment to the success of the Programme.

Amb. Dr. Charles Murigande

Research Bilateral Cooperation between Rwanda/Sweden. *A Great Partnership for a Nation's Development*

PREFACE



Mr. Raymond Ndikumana
The Overall Programme Coordinator

Over the last 14 years, the University of Rwanda registered tremendous progress in research, whether it is in research capacity building, quantity and quality of publication, postgraduate training as well as the research environment. Among many players that contributed to this positive development is the UR-Sweden Programme for Research, Higher Education and Institutional Advancement funded by the Swedish Government through Swedish International Development Cooperation Agency (Sida). Initiated in 2002, the program has been the largest, long term and most predictable external funded programme in the area of University research capacity building.

I joined the programme as the Overall Programme Coordinator in 2008, after the completion of the initiation phase which aimed at putting research on map in a largely teaching university and at the start of the second phase 2007 – 2013. Since then the programme has grown in size and coverage. From 6 subprograms in 2003-2006 to 19 subprograms today, from an investment of 88 MSEK in 2003-2016 to 519.86 MSEK from 2007-2018 in the 19 subprograms, from 3 Swedish partners' Universities to more than 13 Swedish partner Universities today.

We witnessed research culture settling at the University of Rwanda: more people being interested in doing research and more relevant research, undertaking PhD studies, better infrastructure being

set up. Within the UR-Sweden Programme alone since 2004 to today, more than 109 staff of UR have enrolled (41 graduated) and 106 grants provided. All this came with parallel heavy investment in ICT, Library and University administration.

This partnership has not just benefited the University of Rwanda, Swedish partners have benefited too in co-creating scientific knowledge in different areas. By having a good number of PhD students, Swedish Universities have also built their capacity and expertise, but also new experience by undertaking research projects which normally they would not be involved in and so on.

Has the program made an impact at UR? Sure. Have we achieved everything needed to have a vibrant research environment? Obviously not, there is a still long way to go but UR is on the right path. Have we fully communicated the impact the Programme is making in research development at UR? Not always but there are positive efforts in this endeavour. Last year, the programme produced a documentary which is available on youtube.com both in long and short version. Today the UR-Sweden Programme is presenting the first volume of its quarterly "IMPACTMAG".

In this volume, a glimpse of the Programme achievements is provided. We celebrate some of our PhD graduates, continuing students and the research environment that is being established, we reflect on the Programme impact both from the University management perspective but also from individual perspective. We truly believe that research can be an important tool for poverty reduction and that national research capacity is necessary for our country, Rwanda, to be able tackle our own development problems. Indeed, Rwanda as a country is working hard towards being a knowledge based economy.

On behalf of the UR Sweden Program Coordination Office (PCO) in Rwanda and in Sweden, I wish you great reading our first volume of Impact Magazine and encouraging you to also subscribe to our February 2018 volume.

Message by the Senior Programme Manager for Research and Higher Education - *Embassy of Sweden*



Although there is a long way to go before the UR becomes the university it wants to be, it is clear to me that the Programme is a major contributor to establishing a research culture. The nature of research requires a holistic approach to strengthening research capacity as well as a long-term commitment. Sida intends to represent both and it is reflected in the UR-Sweden Programme that we support.

Sweden's bilateral research cooperation aims to strengthen research of high quality and of relevance to poverty reduction and sustainable development. I believe that the Programme contributes to the efforts of this beautiful country to make the transformation to a knowledge-based economy.

Dr Emilia Molnar

I took over the management of Sida's support to the University of Rwanda slightly more than a year ago with excitement - and with a bit of anxiousness. It was a challenge for me to switch from working with international research organizations to handling a complex bilateral program. One year on, I feel privileged to work with the UR-Sweden Program - simply because it has shown great results. Most of the PhD students are progressing well; more and more of the academic staff can pursue research, get exposed to international research environments and the beauty of questioning, exploring and creating; the research infrastructure is improving through the development of an integrated library management system, better equipped laboratories and stronger ICT. Many of the subprograms have managed to reach out to stakeholders outside the academia, to policy makers, practitioners and the private sector, though this is an area that needs more efforts. Through support to a number of key areas of institutional development the Program continues to assist the UR in its efforts to become a research-led university. All these are results that have been brought about by the efforts of team leaders in Rwanda and in Sweden, supervisors, the staff of the Program Coordination Office as well as the students and management of the university.

A Journey to reconciliation



Dr Ezechiel Sentama

Dr Ezechiel Sentama is a Senior Lecturer and Researcher at the Centre for Conflict Management (CCM), University of Rwanda. Sentama graduated in December 2009, in Peace and Development Research at the School of Global Studies (SGS), University of Gothenburg, and was among the first graduates of the Programme.

In his PhD research, Sentama analysed Reconciliation with the use of Contact Theory in the context of Rwanda. His topic was *“Peace Building in Post-Genocide Rwanda: The Role of Cooperatives in the Restoration of Interpersonal relationships”*. Findings were empirically and theoretically informative. The study showed that beside existing mechanisms that are public and involve a third party or mediator, such as problem solving workshops, truth and reconciliation commissions and other the like, that bring conflicting parties together, there exist other mechanisms that bring

the two parties together without a mediator, which is an alternative. This is the case for cooperative organizations that brought together the sides to solve another common problem (fighting against poverty) by joining their efforts. To be successful, cooperative members were obliged to implement cooperative values of democracy, solidarity, caring for each other, equity, which naturally enabled them to engage in constructive communication while overcoming enmity and hatred, thus restoring their relationships. The process is private, natural, intimate and does not involve a mediator, which makes cooperatives an alternative mechanisms in reconciliation.

Sentama admits that PhD studies have increased his abilities to lead and conduct research independently.

“After graduating from the University of Gothenburg, I have been engaged in consultancy projects with the Government of Rwanda on policy oriented research, regarding peace building and reconciliation in Rwanda,” he noted

Sentama conducted independent researches notably on ***“the 20 years’ process of reconciliation in Rwanda”*** from 1994 to 2014 on behalf of the National Unity and Reconciliation Commission. A book was produced and findings were used by the Commission to set up new strategies for reconciliation in Rwanda. Similarly, he led a research project on ***“Rwanda Reconciliation barometer 2015”***, which was a policy oriented research. The purpose was to inform the government to formulate effective policies and strategies towards reconciliation in Rwanda. Other important researches include the study on ***“The living conditions of the Historical Marginalized People (HMP) in Nyaruguru district”*** which indicated how much they were living in harsh conditions of extreme poverty. Recommendations were used by Rwanda Governance Board to improve the living conditions of HMP.

He has been able to engage in research with SGS on ***“peace education project”*** that involved four countries including Rwanda, Israel-Palestine and Macedonia”. Sentama believes those researches are important for Rwanda as far as policy actions are concerned. He also gave lectures on ***“Education prior and in Post-Genocide Rwanda”*** in the Ss Cyril and Methodius University in Macedonia, lecture on the ***“Rwandan Conflict”*** Peradeniya University in Sri Lanka, and the lecture on ***“Governance and Conflict in Rwanda”*** at Cheyney University of Pennsylvania, USA. Sentama has also made

presentations in more than 15 conferences after his PhD studies.

Sentama also added that the Programme can be hailed as it allows the development of bilateral relations between the two countries, Sweden and Rwanda, and continuous collaboration between individuals in the Universities.

“As a result of my continuous collaboration with SGS, I am going back there as a guest researcher for one year and I will be working on Peace Education and Reconciliation (educating for peace and educating about peace),” he asserted, adding that focus areas are social justice, transitional justice, prevention of violence, be it psychological violence or physical violence, gender based violence, etc.

Sentama is currently involved in teaching, supervision of Masters, and co-supervision

of PhD students including supervision of foreign students affiliated to the University of Rwanda. His plans include continuing doing research, publishing in prestigious journals and continue to teach at local and international platforms.

After graduating from the University of Gothenburg, I have been engaged in consultancy projects with the Government of Rwanda on policy oriented research, regarding peace building and reconciliation in Rwanda

Dr Anne Marie Kagwesage and her journey as an established researcher

Dr Anne Marie Kagwesage is a Senior Lecturer in the College of Arts and Social Sciences-University of Rwanda. She completed her PhD studies in 2011 under the scholarship of UR-Sweden Programme. She is a complete researcher and many of her papers have informed decision making in the education sector. She also recently won a grant offered by the UR-Sweden Programme and she is now at the final stage of her research project *“University Education and Women Empowerment”*.

Dr Kagwesage discusses that her PhD degree was the turning point in her career as an academic. The studies enabled her to get involved in research and presenting in various research conferences and seminars and most importantly networking with other researchers.


“I got to be trained further and open up my mind and I was able to meet the community of other researchers and scholars which ultimately enabled me to do authentic research” She said.

Her PhD Research was in the area of Teaching and Learning in Higher Education. Her research topic was on the *“Investigation of the use of a foreign language teaching and learning in higher education in Rwanda”*.

Kagwesage admits that the findings of her PhD research findings have been very instrumental in informing the Universities on how to use the language of instruction without side-lining other native languages. According to her, the later also helps students to decode and grasp the content of subjects.

But again, as much as the language of instruction, which is a foreign language in Rwandan context, might be problematic, she noted that it opens up viable opportunities for students.





I got to be trained further and open up my mind and I was able to meet the community of other researchers and scholars which ultimately enabled me to do authentic research

“The language of instruction is also much appreciated by students as it opens up their horizons and opportunities to further their studies and be part of the larger community around the world” she said.

Kagwesage has produced quite a number of research papers that contributed to the University visibility as many were published in Internationally recognized scientific journals whereby UR was indicated as her affiliated institution. She is now teaching and supervising students mainly at Master’s level.

WINNER OF THE PROGRAM RESEARCH GRANT

UR-Sweden Programme has awarded research grants to UR academics whose projects qualify to advance the community wellbeing. Kagwesage has emerged as one of the grant winner of the project on *“University education and women empowerment”*

She investigated the impact of tertiary education to women who joined University at a later age following the decision of the Government Rwanda to provide easy access without discrimination.

“These people were denied access to education before, and after joining, no research has been concluded to find out what they gained as a result of joining the university” she observed.

The research looked at intellectual skills that mature women might have gained as a result of undertaking University studies, their voice and influence at the workplace as well as their coexistence in the community. Findings showed that they were morally satisfied and highlighted a number of skills gained including being able to blend with young people and conversant with new technologies. The research also revealed that these women became role models in their communities for both young and elderly people. Kagwesage is pleased that her research is the biggest loud proof that women are able to undertake any level of education irrespective of their age. She is commending the Government initiative that empowered women and other marginalized groups to ensure that they can thrive in the society.

She witnesses that UR-Sweden programme has tremendously taken the research culture in Rwanda at a new level. She added that the programme has played a key role in the building capacity for the University staff while establishing networks for multi-disciplinary research teams.

Dr Joseph Nzabanita the winner of Cramér Prize in Sweden



Dr Nzabanita is one of the few PhD graduates in Mathematical statistics under the support of UR-Sweden programme. He currently emerges as one of the young prolific academics in the College of Science and Technology at the University of Rwanda. Since obtaining the award of PhD degree in 2015 from Linköping University-Sweden, Dr Joseph Nzabanita endeavours to take the teaching of mathematics at a new level and contribute to the increase of qualified academics in mathematics.

His thesis on ***“Bilinear and Trilinear Regression Models with Structured Covariance Matrices”*** was awarded the Cramér Prize for the best thesis in Mathematical Statistics in Sweden 2015. The Cramér Prize is annually awarded to the best PhD graduate in Statistics or Mathematical Statistics during the year. According to Nzabanita, the prize is a recognition of efforts of many actors involved in the success of his PhD studies. At the same time, the award presents a challenge to make use of this milestone and achieve his tasks to a very high standard.

Dr Nzabanita states that his PhD degree was a turning point in his professional career as this was assigned with huge academic responsibilities that he could not assume before. These include being a

supervisor for postgraduate students at Msc and PhD level and contributing in the development of MSc and PhD programmes at the University of Rwanda. He is also the Head of Research in the African Centre for Excellence in Data Science, which is one of the four World Bank-funded Centres of Excellence at the University.

He attests that UR-Sweden Programme through its sub-programmes is the most contributor to efforts of University of Rwanda to raise staff capacity in research and in other areas.

“As a lecturer at the University, I strive to raise and sustain the motivation of students in studying mathematics by showing the practical applications of mathematics” he said.

The use of ICT enhances students’ ability to do their learning by searching information they need on their own. Nzabanita further noted that the programme has propelled the status of research at UR, which in recent times was problematic not only at the University but also at the national level.



Giving back to the University giving back to the society - Such is a pledge of Dr Brigitte Nyirambangutse

She is one of the few scientists and young female PhD graduates that the University of Rwanda is endowed with. Dr Brigitte Nyirambangutse defied all sorts of odds when she decided to carry out her PhD studies in “Natural Sciences, specializing in Environmental Sciences” that only few female colleagues would have ventured in. Brigitte graduated in November, 2016 at the University of Gothenburg. Her studies were funded by the UR-Sweden programme for Research, High Education and Institution Advancement.

According to her, PhD journey has been of tremendous richness in terms of knowledge and skills acquisition. She will give back to her University and society in general, through teaching and doing research as a knowledgeable, confident and skilled person.

She testifies to have had great field experiences either here in Rwanda or in other tropical/temperate forests that she got a chance to visit.

“I had many opportunities to work with preeminent professors in my field, and has equipped me with skills and expanded my collaboration and networking” She said, adding that she gained exposure by attending international conferences and got a chance to present her own research findings.

MAIDEN STUDY IN TROPICAL AFRICA

Key aspects of the novelty of Brigitte doctoral research project are that it was conducted in Africa, in montane tropical forest. She used Nyungwe Forest as a case study. The study was hailed as it was the first of its kind in tropical Africa, by providing valuable clues into the way that Afromontane tropical forests are different, with the carbon stocks of late successional forest stands being higher than those reported for Central and South America thereby suggesting that loss of African forests has disproportionately large consequences for global carbon emissions.

The results from her PhD research will be of value for understanding and managing the role of tropical montane forests in the global C cycle. Specifically, the data will be useful to better understand tropical montane forest C stocks, fluxes, and productivity, how these are shaped by disturbance and how they are affected by other environmental factors.

“Now that UR has opened its Postgraduate programmes (at MSc and PhD level), this requires having PhD holders who would be guiding and shaping these programmes. I am very happy that I have already started giving my contribution at college level,” noted Brigitte.

Brigitte is using all her accumulated knowledge, mainly through teaching but also through dialogues between policy makers and various stakeholders including academia in Rwanda. Her research interests lie in Tropical Ecology and forest ecosystem functioning. Her contribution is mainly in the area of environment and climate change, forest management and productivity, climate change mitigation and green growth.

Upon her return back from studies, Brigitte has been working with the Centre of Excellence in Biodiversity Conservation and Natural Resources Management on proposal for Landscape Approach to Forest Restoration and Conservation; a project funded by Rwanda Environment Management Authority to determine research priority areas for the Gishwati-Mukura National Park. She noted that all research projects proposed will involve students from University of Rwanda in the conservation biology programmes at BSc, MSc and PhD levels.

She has also been working with the Ministry of Environment and NIRAS/NATURA as a coordinator in a baseline study on green growth/investment in Rwanda. The assignment was among others to

develop for the very first time, a practical definition of green investment, green technology and green jobs to mention but a few.


Brigitte hails the support of UR-Sweden programme that enabled her to study in a flexible way and allowed her to do her research at the same time taking care of her family.

“If it wasn’t this Programme, the chance of pursuing my doctoral studies would have been very minimal” she noted.

She referred to a saying that goes “when you educate a woman you educate the nation” and noted that *“inspiring other girls and women to pursue their dreams in our society is a one of the positive impacts of this scholarship”*.

The scholarship was indeed a great opportunity to upgrade her degree in the field of Environmental Sciences, needless to mention that the country has handful qualified personnel in biology field. She is relishing that the Programme has boosted her career and is happy to give back to her home University.

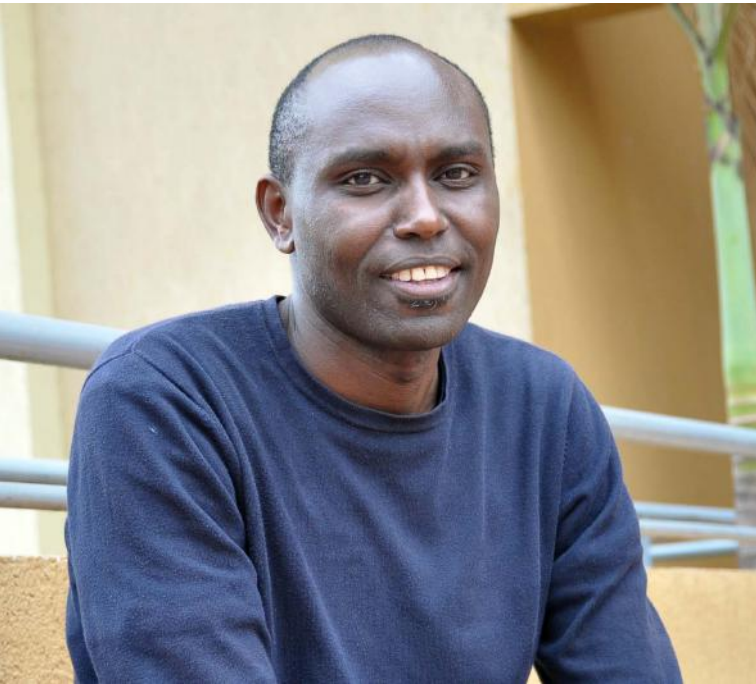
“During the PhD, you are involved in presenting your research to colleagues and different audiences, networking during conferences and academic events. These activities enhance your communication skills and enable you to become a member of highly esteemed networks” she concluded



...inspiring other girls and women to pursue their dreams in our society is one of the positive impacts of this scholarship

Dr Brigitte Nyirambangutse

Performance and Efficiency in sub-Saharan Africa



Johnson Rukundo's - Jönköping University

According to the data from National Institute of Statistics, the biggest portion of Rwanda daily needs is imported from outside. This vindicates the notion that Rwandan firms do not produce enough to exhaust the market. Having analysed different scenarios in economic and commercial trends in the East African region, Johnson Rukundo's PhD research project focuses on competition, productivity and innovation of manufacturing firms as opposed to services firms.

His research was prompted by the fact that Rwanda is one of the fast-growing economies and therefore needs an improved industrial organization sector that would generate more income for employees thus enabling growth and expansion and creating more employment opportunities.

"I basically thought about it and found it to be a very pertinent and interesting research area and decided to give it a try" said Rukundo

In his research, Rukundo came to realize that performance is a crucial factor in increasing the level of innovation in manufacturing firms in developing countries. However, innovation in these countries is hampered by entrepreneur's reluctance to change and access to proper finance.

"If firms perform better by increasing the value of sales, they are likely to increase their level of innovation" Rukundo observed, adding that competition among manufacturing industries increases the level of productivity which also leads to efficiency. In this case, he defines innovation as being new or improvement on products, methods and processes.

Rukundo found that manufacturing firms in Rwanda perform better than the service firms in terms of productivity, however innovation is still low hampering expansion. He observed that low competition and monopoly power reduces the level of productivity in Rwandan industry. His research findings indicate that big firms should avoid complacency and self-satisfactory but instead always think of expansion and creation of subsidiaries. This will ensure that there is both forward and backward linkage in the chain. Investment incentives such as tax exemptions, import duties which are currently highly implemented on services can boost the manufacturing industry.

"I have been trained on best ways to conduct research for community benefits and personal development; I also look forward to contribute in different sectors for addressing any challenges that requires my capacity and expertise"

Like his colleagues on PhD studies under the UR-Sweden Programme, Rukundo's research should produce atleast three publications in recognized research journals. Rukundo is in his final year of PhD studies.

"Doing a PhD has allowed me to be self-reliant independent thinker and enhanced my critical thinking and research undertaking skills. I have gained a broader understanding of applications of economic theory to the practical settings especially the econometric analysis as applied to micro theory economics" He concluded.

PhD student poised to provide solution for rice cultivation under drought



Alphonsine Mukamuhirwa - Swedish University of Agricultural Sciences

Understanding drought tolerance mechanisms will help to the scientific community to develop strategies towards improving plant adaptation mechanisms and quality. Alphonsine Mukamuhirwa, a PhD student at the Swedish University of Agricultural Sciences (SLU) in Sweden is doing a research that will engage the society, especially rice farming communities to adopt strategies for efficient water management and determining the appropriate environment for each cultivar.

Mukamuhirwa observes that plant competition for water, urbanisation and increasing population are to worsen water scarcity. She states that in Rwanda, more frequent dry spells even during rainy season and a drastic increase in temperature are predicted to occur. A full understanding of possibilities to produce high yielding and good quality rice in a drought temperature stress combination is needed. Her research is therefore designed to understand the combinational effect of temperature and repeated drought on plant growth, grain yield and nutritional quality.

In her research findings, Mukamuhirwa recommends Rwandan farmers to save water during the growth stages when the cultivar is drought tolerant and be used during critical period.

“The findings from my research will guide research institutions like Rwanda Agriculture Board on cultivar choice in a specific area and for specific period” she said, adding that she hoped to be part of research teams for further research.

Mukamuhirwa applauds the impact of UR-Sweden programme through capacity building that greatly contributes to Rwanda social/economic development.

“I aim to do further research to develop high yielding, good quality rice adapted to stressful environment and hope to collaborate with sister institutions and University stakeholders,” she ended.

The findings from my research will guide research institutions like Rwanda Agriculture Board on cultivar choice in a specific area and for a specific period

Exploring Resistance to Genocide in Rwanda in 1994



Ernest Mutwarasibo - University of Gothenburg

In 1994, Rwanda experienced the world largest genocide in modern times. The Genocide against Tutsi has its distinctive aspects in the sense that most of the victims were killed in their own villages by their neighbours. Despite compelling orders from the then officials to kill, some refrain from engaging in killings and even few went far by rescuing the target group. Ernest Mutwarasibo, is a PhD student in the School of Global Studies at the University of Gothenburg - Sweden. He is conducting a research to explore how and why, in their perspectives, persons who were identified as Hutu carried out resistance during the Genocide against the Tutsi in Rwanda, in 1994.

Mutwarasibo says that his study brings into dialogue the respective literatures on Genocide and resistance studies, particularly in that they both focus on the oppressive power exercise.

“Endeavouring to understand strategies and motivations of those who resisted the genocide in Rwanda in 1994 is likely to help in the current effort to foster an auto-resourced national identity and responsible citizenship in Rwanda” he said.

He observed that understanding the resistance is to consider, first, the critical thinking and, second, the practices of individual people who employed both violent and non-violent means against the genocide perpetrators while they also endeavoured to rescue the then targeted persons as Tutsi.

His findings support and extend the existing knowledge on resistance as power back against the oppressive discourses and practices of dominant power. In this case, the genocide against Tutsi Rwandans in 1994 as a violent means to cling to political power and impose a radicalized society.

Mutwarasibo intends to do further lecturing and researching in genocide and peace studies, with a particular input in exploring the resources needed to withstand the best choices persons could make and resist what they would not otherwise do.

He also hopes to invest in research and qualitative change of the perceptions of Rwandans to the contemporary social and political world. This includes extending the research in genocide studies beyond the current historical approaches, which would allow the violence effects more serving as departure point to (re-) build individuals and society's fabrics.

He concludes at his philosophy of life that goes “a better understanding of the past, in a present perspective, is warranty of the best future”

Its application in Rwandan judicial proceedings

The principle of Best Interest of the Child is drawn from the UN Convention on the Rights of the Child and provides that in all actions concerning children, the best interests of the child shall be a primary consideration. Such is the research area of Naomi Umuhoza, a PhD student at Uppsala University-Sweden. She is conducting a research on the Application of “The Best Interests of the Child” in Rwandan judicial proceedings.

Umuhoza wants to understand what is considered the Best Interest of the Child in Rwandan legal framework, how it applies in custody cases, its basis with an aim of developing a model for assessment and determination.

Her research project aims to come up with solid facts to complement the concept of Best Interest of the Child and therefore enhances child protection during and after divorce proceedings. According to her, being a winner in a divorce case should not be a factor sine qua non for one to claim the custody of the child because it does not directly reflect the best interest of the Child.

Umuhoza is confident that her research would help legislators and other actors in court proceedings to put out the concept clear and ultimately help the judicial community. This will help among others for properly interpret the real meaning of the Best Interests of the Child during the court ruling by establishing clear grounds that motivate their decisions.

... being a winner in a divorce case should not be a factor sine qua non for one to claim the custody of the child because it does not directly reflect the best interest of the Child.

Naomi Umuhoza -
Uppsala University



Towards availing accurate information through Geoinformation Technology for an ever growing population of Rwanda

In many areas, planners in our country have been mainly relying on GIS technology simply as users of Geographic information systems that sometimes are not well adapted to problems found in our context



Rachel Murekatete - Royal Institute of Technology

The increase of Rwandan population generates the need to adopt sustainable practices whose implementation often requires Geoinformation Technology (GeoIT) to help planners make well-informed decisions and solve problems in ways that the population will benefit from. Rachel Murekatete, a PhD student in Royal Institute of Technology (KTH)-Sweden is working on Methods for Design and Planning of Geographic Networks to fill the gaps therein.

Under the support of UR-Sweden Programme, Murekatete intends to find solutions related to sustainable urban and regional planning and environmental management.

“In many areas, planners in our country have been mainly relying on GIS technology simply as users of Geographic information systems that sometimes are not well adapted to problems found in our context,” Murekatete said, adding that there is a need for skilled and knowledgeable researchers that are capable of developing advanced Geoinformation Technology-based methods of high relevance to Rwanda’s specific problems and context.

Murekatete is assured that PhD studies will allow her as a scientist to work more independently in solving complex scientific problems, in a more critical and creative manner while working towards achieving scientific growth and excellence. She adds that the current education gives her a great opportunity to

connect with others and build her own national and international research networks, not only within her field of study but also by taking part in interdisciplinary cooperation.

Additionally, she reckons that newly acquired skills and knowledge one develops from PhD studies can potentially be used to improve or develop new teaching materials and translate into new opportunities to ensure an increase and impactful research output from the University of Rwanda.

She brands UR-Sweden programme to have a pivotal role in providing the Rwandan society with highly enterprising graduates and competent researchers capable of building a sustainable society with applied research, which to date has not yet been at a satisfying level in Rwanda. Rachel aims at taking advantage of the benefits of a continued networking for scientific innovations that will help a country do keep on developing.

The quest to transform the University library into a resource centre and knowledge hub



The University library plays an integral role in the process of teaching, learning and research processes. As the biggest largest academic library in the country, UR Library under the support of UR-Sweden Programme has embraced the latest technology to be a resource centre and knowledge hub that provides support to the research and academic enterprise of UR and beyond. Currently, the library is the home of the University Repository, which facilitates wider access to UR's scholarly outputs. It has a collection of 319,901 volumes of books and 47 databases for e-resources that are accessible online.

According to Dr Robinah Namuleme, the UR Director of Library services, the library team is creating a rich information environment for the library to function as a hub of scholarly activities, use collections and collaborate while providing access of resources to all Rwandans.

"The Programme supports a number of activities with library resources like acquisition of books and payment of e-resources which is accessible in the entire country" Said Namuleme.

In order to smooth the access to its resources, the University through technical expertise from Sweden has developed an interactive library website which will enable to showcase the resources through easy and friendly access. The website accommodates among others the University repository with the

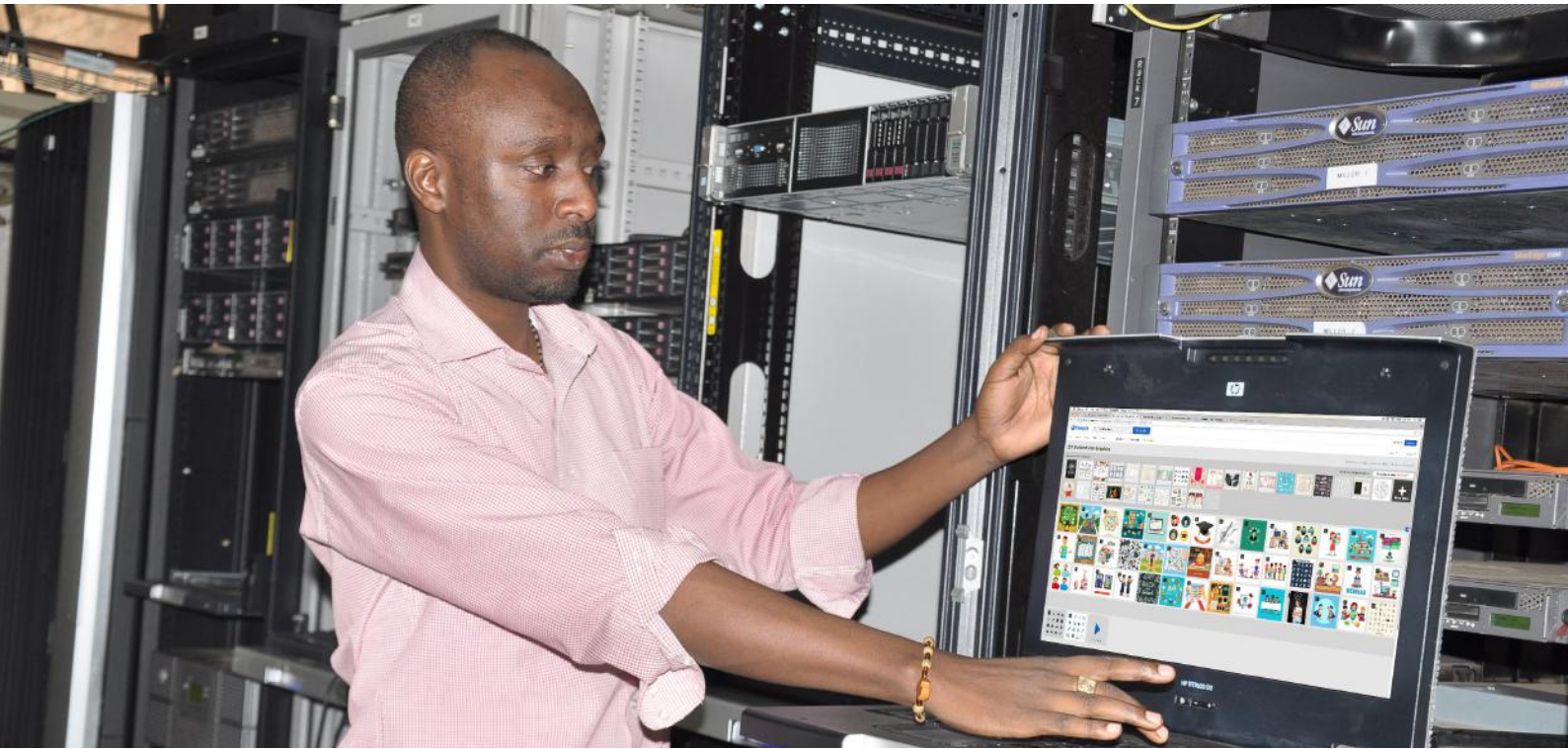
digitization of all items that were in manual format; those that are being produced locally and cannot be seen outside including dissertation and research papers.

"The website is a result of our ultimate goal to deliver a functional and easy-to-use experience for the Library website users; the library team now understands what can be done on the website and what makes the website useful," Said Dr. Robinah.

In the area of training, the University faculty and librarians of four campuses have been imparted with skills to ensure that the resources are used efficiently. This, according to Namuleme, has boosted library statistics in terms of usage. In addition, staff have been empowered and are now motivated than ever, because of the kind of involvement and participation they have at workplace, having learnt how to do their work properly.

The library unit has also been assisted to participate in international conferences for disseminating research in the area of Library Sciences, extending linkages and networks and exploring ways to forge partnership. In this context, the Library is on the verge of working together with Kenya Library Association in a bid to take the library related services of both countries to another level.

Empowering the University community to keep up with ever evolving ICT technologies



ICT Infrastructure support is becoming the most relevant enabler in teaching, learning and research. UR-Sweden Programme has taken cognizance of the matchless role of ICT in education and research and opted to provide the latest and reliable ICT support to the University of Rwanda. The University of Rwanda is now equipped with online and portals that help to keep up with the current digital era.

Daton Ngilinshuti is the Team Leader of ICT Infrastructure in UR-Sweden Programme. He said that the University of Rwanda has acquired through UR-Sweden Programme a number of hardware materials that include desktop and laptop computers for laboratories, network devices, servers, cabling materials and maintenance tools. According to him, all the tools and materials has enormously raised the rate of computer literacy among the University community while playing an immense role in extending the network coverage.

Acquiring materials has a marginal importance in case they are not maintained and upgraded to the latest technology. UR-Sweden Programme has ensured that maintenance becomes vital for the sustainability of available materials.

Hardware will always necessitate the software component in order to function properly; the Programme has therefore chipped in to assist either in developing or purchasing new systems for proper running of acquired materials. In this context, the Programme assists in maintaining specialized software that are used in day to day life of the University such as Sage Pastel for finance department and visual basics for application development for students, teaching and research. The Programme has also supported the development of network management system and identity management system.

Ngilinshuti attested that UR-Sweden Program has massively impacted the University of Rwanda and its community through internal website hosting, management of domain names as well as capacity building of staff. So far 100% in-house training for ICT staff were supported by the Programme.

“UR is one of the most complex and complete ICT infrastructure in Rwanda and this empowers IT staff. So far, most of the highest operators in ICT in Rwanda have passed at UR and worked with the subprogram in one way or another,” Ngilinshuti noted.

UR dons get tips on e-Learning Instructional Design



The digital revolution and the emergence of smart devices has brought fundamental change in teaching and learning process. In this respect, the University of Rwanda under the support of UR-Sweden Programme has rolled out training programmes to its staff with a view to equip them with pertinent skills in e-learning in the quest to make education accessible to a wider audience. The new approach has seen at least 1359 modules uploaded online and 6738 users of e-learning platform.

In the course of the training, lecturers were introduced to MOODLE, an open-source learning platform that enables online teaching, consultation, assessment and evaluation. Besides, the training enables partners in learning and teaching to hold online interaction about taught subjects after classes.

The new system is meant to equip lecturers on how to design courses so that they can fit the online platform. Given that UR is a multi-campus University, Ms Eliane Ingabire from the College

of Medicine and Health Sciences in the School of dentistry commended the platform saying it will reduce regular mobility of lecturers who teach in UR colleges and various campuses across the country and ultimately will reduce mobility costs.

“A lecture can be uploaded online and be accessed by all students in different campuses,” she said.

With MOODLE, lecturers and students are able to share online materials, which include notes, assignments and other multimedia contents. The platform is also designed in a way that it can incorporate discussions between lecturers and students while the latter can also read instructions and deadlines set for particular assignments. This enables UR to become a modern University that is efficient in delivery and maximization of research output.

Benefits of the UR-Sweden Programme from a Swedish perspective



Dr Bengt-Ove Turesson is a Senior Lecturer at Linköping University and coordinates the UR-Sweden Programme's activities on the Swedish side. He noted that the highlights of this Programme for Swedish Universities can be seen in short term and long term benefits. He affirms that the short-term benefits added to the Swedish partners from this collaboration include but are not limited to the increasing number of well-motivated PhD students in Sweden by attracting talented students from Rwanda and the opportunity for Swedish students to work with international teachers.

Bengt-Ove sees the long-term benefits to be included but not limited to the international visibility of Swedish Universities and staff members gaining experience of teaching in partner countries and interacting in a different educational and cultural environment. For instance, staff members gain experience of developing postgraduate programmes and teaching courses that are not part of the standard Swedish curriculum and departments get opportunities to be involved in collaborative and multidisciplinary research projects inside and outside Sida-funded programmes.

“Staff members teaching similar courses both in Sweden and Rwanda contribute to the quality of the courses at the Swedish Universities since every time a course is taught, some developments have to be made” He concluded.

Dr Bengt-Ove Turesson

Reaping the benefits of a good investment



Between 2002 and now, the University of Rwanda and Swedish partners can confidently testify of the importance of the Programme for both Rwanda and Sweden. It will take probably some years but not long, to see a comprehensive impact but we can already see many good results and impactful individual stories and institutional transformational change at UR in terms of research culture, delivery and research awareness. Without doubt, the UR-Sweden Programme has had to play a major role as shown by the number of students trained at PhD level, research grants and organisation and participation in international Conferences that have enabled the UR academic staff to advance and reach other levels of the research ladder. This is without saying that the Programme with its support to improving the teaching and research environment promises to be instrumental in the efficiency of service delivery at all levels.

The role of the Programme has been crucial in materialising the interaction of the University with stakeholders in Rwanda and the community at large for education and the use of research. Some concrete examples include the Annual interface legal forum workshop which gathers researchers and various stakeholders where presented research papers spark discussions that generate recommendations for an improved curricula and challenge-based

learning approach. The discussion also helps UR researchers to get real life case studies and informed research questions. We can also mention the contribution of the Programme to train Rwandans in Peace Education and Conflict Management. So far, the Programme has produced 10 graduates from Peace studies. Many of the graduates have consistently led research projects for Government Agencies and consultancy projects with civil society organisations. Graduates also teach in the Master of Arts programme in Peace Studies and Conflict transformation funded by the Programme and other programmes such as the Security Studies and Genocide Studies and Prevention. These programmes not only attract a big number of Rwandans but also international students from mainly African countries (Nigeria, Gambia, Namibia, Zambia, Ethiopia, etc). Graduates work in Peace keeping missions with the United Nations and African Union missions, others work in various institutions in Rwanda including the Rwandan Parliament, the National Commission for the Fight Against Genocide (CNLG), the Army and the National Police.

Another example is the Annual East African Business and Economic Watch (EABEW), an international conference hosted by the University of Rwanda which has so far produced seven edited volumes since the first EABEW in 2015. These are published by Springer, Edward Elgar and Routledge, the World's first five popular publishers. The books have a total of 104 chapters of which 27% are the contribution from the University of Rwanda, College of Business and Economics staff. It is worth mentioning that as of today the seven books have more than 10,000 paid downloads.

All the recorded achievements cannot be exhausted in this volume alone and many of these can be reflected in one way or another in all subprograms. However, we encourage readers to look forward to our next quarterly publications for more good stories as these are so many to count!

Dr Sylvie Mucyo

Deputy Coordinator UR-Sweden Programme

The UR-Sweden Programme for research, Higher Education and Institutional Advancement aims to support the development of research at the University of Rwanda and to increase the use of research and competence produced within the Programme, in political decision policy making and in the Rwandan Society at Large.



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