

Rwanda's Biodiversity Heritage

THE CENTER OF EXCELLENCE IN BIODIVERSITY
AND NATURAL RESOURCE MANAGEMENT (COEB)

COEB MONTHLY NEWSLETTER,
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Greetings from the Center of Excellence in Biodiversity and Natural Resource Management. We have had a very busy past couple of months, and this newsletter reflects our activities from August and September 2021.

During this period, we hosted a novel course for postgraduate students at UR and students from George Mason University in USA; the course focused on climate policy and the upcoming COP, and featured guest lecturers from WHO and many other global institutions. Rwandan and USA students worked in small groups on adaptation projects, which offered opportunities for cross-cultural learning. *continue next page*

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continued... We also hosted the first biodiversity and taxonomy summer school, funded by the Volkswagen Foundation in partnership with Senckenberg Biodiversity Inst in Frankfurt, Germany. Our goal in the CoEB is to connect science to policy, to train our young people in biodiversity/climate change/natural resource management, to build research capacity, and to make biodiversity data available for evidence-based decision making. In the following pages you will see examples of the activities we have engaged in to meet our goal. Enjoy and stay safe.

Beth Kaplan, Director of CoEB

Volkswagen Summer School:

Growing Biodiversity Science & First steps towards building a zoological reference collection

From 22 August to 3 September 2021, a two-week summer school session focused on natural history collections and biodiversity sampling and taxonomy was held in Nyungwe National Park (NNP). This session was funded by Volkswagenstiftung Germany (Volkswagen Foundation) through a grant to the Senckenberg Nature Research Society (German: Senckenberg Gesellschaft für Naturforschung) in partnership with the Center of Excellence in Biodiversity and Natural Resource Management (CoEB).

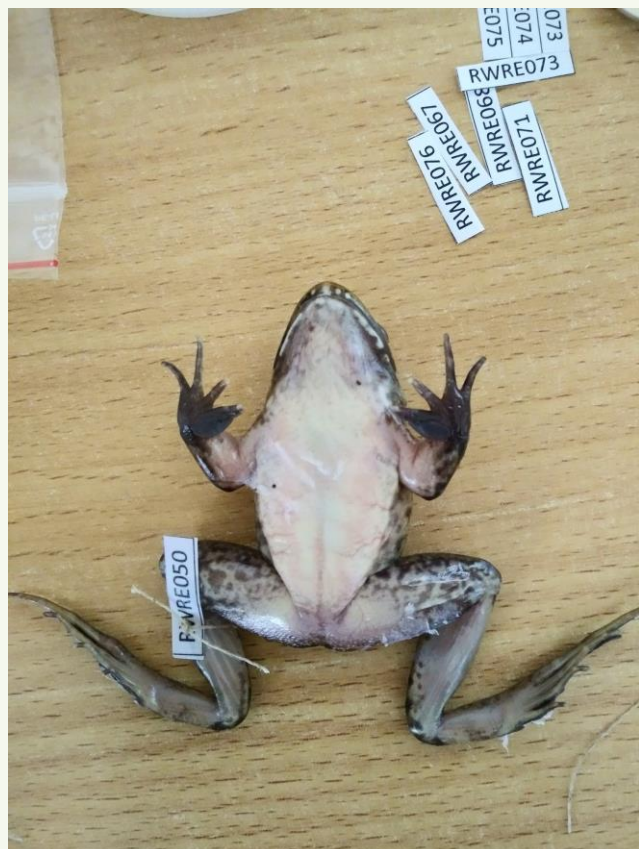
Field course participants included staff from Senckenberg and CoEB, as well as those from CoEB nodes and partners like the Dian Fossey Gorilla Fund International (DFGFI), Rwanda Cultural Heritage Academy (RCHA), and Centre de Recherche en Science Naturelles, DRC (CRSN, Lwiro). Postgraduate students from the University of Rwanda, as well as NNP freelance guides, also participated in the summer school program. The session was taught by taxonomic specialists from South Africa, Germany, and select international research institutions.



Participants attending the summer program collected a plethora of observational data for the Rwanda Biodiversity Information System (RBIS) and plant specimens for the National Herbarium of Rwanda (NHR). A total of 494 fresh water invertebrate, 103 amphibian, 201 lichen, 223 butterfly, 40 small mammal, and 453 beetle specimens were recorded, in addition to the 208 plant samples that were collected and brought to NHR.

This summer program will continue through 2023, and will include a two-week field training course and three-day workshop for the next 2 years. CoEB partnered with Senckenberg, Germany to receive this grant, to assist with creating field school programs and trainings geared towards building capacity for the development of taxonomy capacity and plant and zoological collections. Program instructors from Germany and the East African community will continue to work to develop modules that can be adopted as qualification courses at Senckenberg and CoEB in the fields of biodiversity and database management.

The course introduces core aspects of taxonomy and systematics, as well as the management of biological collections and databases (e.g., museums, university collections and herbaria) for use in biodiversity research and education. Participants receive field and lab training, and specimens obtained and preserved during the courses will be used to build up CoEB's reference collections.



Rwanda Biodiversity Information System (RBIS):

The path to availing data and letting people know about it!



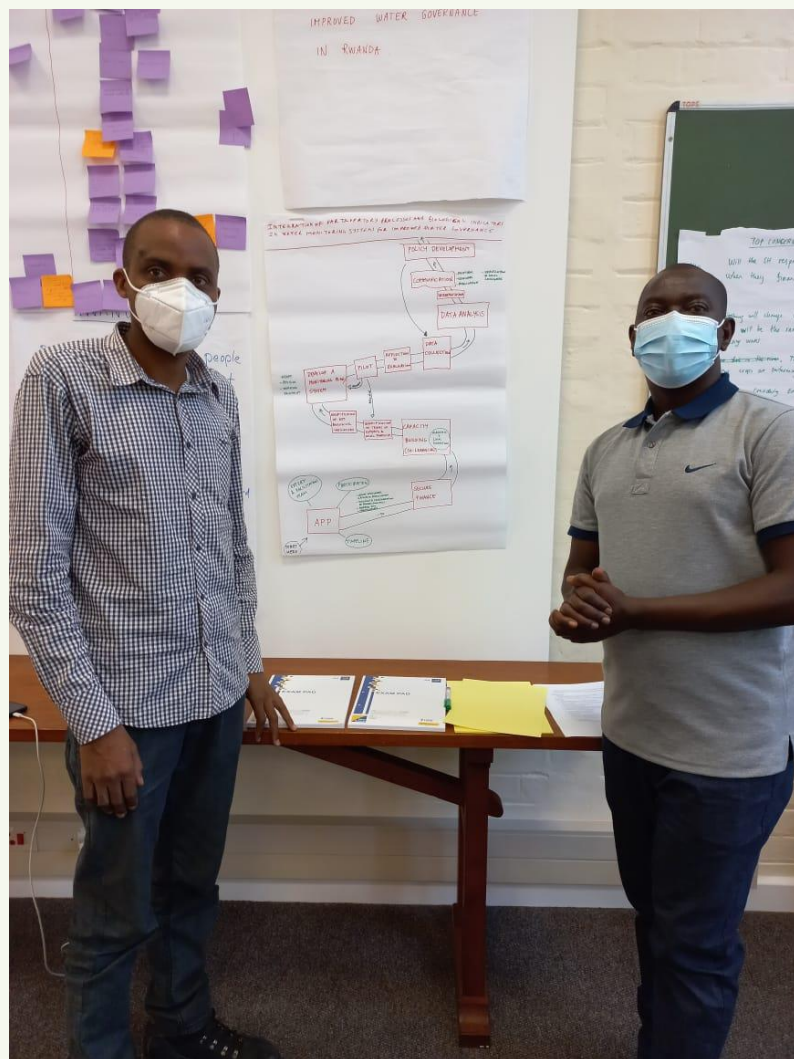
RBIS is run by a multidisciplinary team of staff at the University of Rwanda in partnership with the Freshwater Research Center and Kartoza from South Africa and continues to mobilize and integrate biodiversity data with wetland, national park, soil, land cover/land use (LCLU) and Agro Ecological Zone (AEZ) spatial layers. To date,

31,000 data records have been mobilized, which include data on freshwater biological indicators like amphibians, Odonates, macroinvertebrates, fish, and birds.

Currently, the major focus of RBIS has been to inform the general public about the database and the biodiversity data it contains via posters on social media about the various taxon groups with details regarding the number of occurrence records and visited sites in Rwanda, as well as species IUCN status. In addition, the RBIS team is working on creating data products for potential users and researchers that include distribution maps showing species occurrence within the country to provide a sense of data gaps that need to be filled. Ideally this should help guide future research directions and provide scientists and researchers with ideas for where sampling should be expanded, especially for national surveys that can add data to the existing dataset and help drive policy development for the monitoring of ecological systems.

Additionally, the biodiversity data management team has worked hard to build capacity among its stakeholders, including students and EIA professionals, by training them on the data management cycle. The team aims to create a new module that will include plants and will continue to organize and digitize new and current data sets. Please visit the RBIS portal for more information <https://rbis.ur.ac.rw/>.

African Research Universities Alliance (ARUA): An adaptive planning process



CoEB is currently running a project entitled: “Unlocking Resilient Benefits from African Water Resources (RESBEN Project)” founded by the African Research Universities Alliance (ARUA) Water Centre of Excellence. This is a collaborative study between CoEB and ARUA-CoE based at Rhodes University in South Africa. Dr. Venuste Nsengimana, the principal investigator on the project in CoEB, and Venant Nzibaza, lead research assistant, attended a three-day workshop on the “Adaptive Planning Process” at Rhodes University, South Africa from 21 to 23 September 2021. The purpose of this training was to learn the methodology and practical facilitation process of running an Adaptive Planning Process for natural resource management. It was geared towards building capacity of ARUA RESBEN Project members to plan and facilitate stakeholder engagement processes in their home countries.

In regards to the importance of this training, Prof. Beth Kaplin, the Director of CoEB stated, “We need to learn and apply this adaptive planning process, and work with our partners at Rwanda Water Resource Board (RWB) to implement it and assess how it improves natural resource management. We should be striving to integrate what we are doing in the Rwanda Biodiversity Information System with this adaptive planning process as these are synergies among our projects”.

Engaging Youth in Research Innovation for Ecosystem Restoration

From the 18th-19th of August, 2021, the Save Environment Initiative (SEI - sei.org.rw) in partnership with Ngozi Naturals (ngozinaturals.rw) organized youth sessions for climate action that were held virtually under the theme of "Youth Engagement in Ecosystem Restoration". During this event, CoEB Director, Prof. Beth Kaplin, discussed the topic "Engagement of youth in developing research innovation: CoEB's case studies".

In her presentation, Prof. Kaplin emphasized the role CoEB has, and continues to play in motivating and engaging youth in its daily activities.

"We bring together BSc students with MSc and PhD students, with visiting researchers from various countries, and our UR academic staff and interns from various institutions, for exciting interactions and new ways of thinking; we embrace interdisciplinary approaches to studying biodiversity and conservation problems – we work with biologists, chemists, IT, GIS and spatial analysts, social scientists, anthropologists, policy analysts, medical doctors...our center exposes students to different cultures and ways of knowing. We provide networking opportunities for youth to learn about various research approaches and opportunities." Beth Kaplin

Beth Kaplin is presenting

Engagement of youth in developing research innovation: CoEB's case studies

UNIVERSITY OF RWANDA
Center of Excellence in Biodiversity & Natural Resource Management
CoEB

Tabi Joda - Ecosystems Revivalist
Great to meet you guys. Let's work together.

Faida Zoubeda
Thank you very much Bernardin

11:46 AM | xyb-snki-stb

CoEB Seminar Series Reaches New Heights

CoEB SEMINAR SERIES SPEAKERS



Continuing to engage students, researchers, and professionals from around the world, the CoEB seminar series hosted a diversity of topics in August and September, 2021. Seven seminars were provided. August seminar presenters included Dr. Egide Kalisa, a CoEB Research Associate and Lecturer at UR currently doing a postdoc in Canada, who presented on "Variability of Airborne Microbial Communities and Correlation with chemical air pollutants in atmospheric Particulate Matter in Rwanda"; Dr. Gloriose Umuziranenge, who recently completed her PhD and is a researcher and Lecturer at PIASS in Huye, Rwanda, presented "People's perceptions of community participation in conservation of natural resources in Rwanda- the case of Nyungwe National Park"; and Adrienne Chitayat, a PhD candidate at the University of Amsterdam, presented on "Chimpanzees, biodiversity, and soundscapes in Mahale Mountains National Park, Tanzania".

September seminars were provided by Mapendo Mindje, a CoEB Research Associate and Assistant Lecturer at UR, who presented on "Amphibians of Rwanda"; Dr. Apollinaire William, Project Manager for Agroforestry for Livelihoods at Albertine Rift Conservation Society (ARCOS), Rwanda, presented "Adoption of agro forestry buffer for environmental change adaptation: Small farmer perception"; and Dusabe Marie Claire, a scientist and conservation biologist with Rwanda Wildlife Conservation Association (RWCA), who presented "Bat conservation in Rwanda: Using bat ecosystem services to trigger their conservation". Last, but certainly not least, Dr. Lisa Dale, lecturer and researcher at The Earth Institute at Columbia University, presented her recent research in Rwanda: "Climate Adaptation and Resettlement in Rwanda: The Case of Rweru Model Green Village".

Video recordings of the CoEB Seminar Series can be accessed here:

<https://www.youtube.com/channel/UCdr8ykoxB00DI7ywxpvBuWA>

Post-graduate Highlights: Insights from Rwandan PhD students on the biodiversity summer school training!



Jean de Dieu Uwizelimana (left), Deogratias Tuyisingize (middle) and Alphonse Nzarora (right) are three PhD students who attend the summer school on biodiversity collection from 22 August to 3 September 2021. The CoEB wanted to hear their thoughts on the summer school and their careers and recommendations on the way forward.

Jean de Dieu's PhD research project aims at providing data on butterfly species distribution across an elevation gradient in Nyungwe National Park (NNP), a potential focal group to monitor the effect of climate change on biological diversity within the park and Albertine Rift region in general. He said that attending the summer school was an opportunity for networking with international conservationists, and widen professional skills in biodiversity survey techniques and preservation. "Further training should also include birds, and also insect-raising such as butterflies that should be beneficial for both entomology teaching and research at the University of Rwanda" Jean de Dieu said.

Alphonse Nzarora is working on freshwater ecosystem assessment using algae as bioindicators. He highlighted that working with experts during the summer school helped him to gain new skills and knowledge in field sampling techniques and also in identification. "This expertise created for me the confidence in my career pathways. For the next summer school, I would like to recommend more time in the lab by including also molecular analysis".

Deogratias is a wildlife biologist at Karisoke Research Center and a Ph.D. student working on ecology and conservation of golden monkeys and their habitats in Rwanda; he is responsible for managing the biodiversity programs and he mentors undergraduate students at Karisoke. "The summer school enhanced my research skills, I exchanged research skills with colleagues. The trainers were amazing, super smart! My participation in this program greatly benefits my future career as a biodiversity naturalist and exposed me to new ways to approach future research. Future training should explore new ecosystems and include skills in data analysis" Deogratias Tuyisingize said.

News From Our Nodes & Partners:

UR-CoEB represented in gorilla baby naming Kwita Izina 2021



BUSINESS OF CONSERVATION CONFERENCE

EXPLORING THE NEW ELLEN DEGENERES CAMPUS OF THE DIAN FOSSEY GORILLA FUND

For more than 50 years, the Dian Fossey Gorilla Fund has been working in Africa to help conserve gorilla populations and support the people who share their forest home. In 2017, the organization embarked on an ambitious project to build their first permanent home aimed at accelerating their work. This session will give key insights into the development of the new Dian Fossey campus, including looking at the sustainability of the campus, the importance of collaboration and partnerships and the potential positive impact on conservation.

Facilitator & Speakers

 Felix Ndagijimana, Facilitator Country Director, Dian Fossey Gorilla Fund	 Dr. Beth Kaplin, Director, CoEB, University of Rwanda	 Prosper Uwingeli Volcanoes NP & SACOLA, Rwanda
 Laban Kayitete Research Assistant, Dian Fossey Gorilla Fund	 Gabriel Nyirijuru Filmmaker, MASS Media	 Joe Christa Giraso Site Landscape Architect, MASS Build

BCC 2021: Building Resilient Wildlife Economies
23rd Sept, 2021



First introduced in 2005, the Kwita Izina naming ceremony is now in its 17th year. This year, 24 baby gorillas were named on the 24th of September during a virtual event. Prof. Beth Kaplin was honored to represent the University of Rwanda and CoEB in the Kwita Izina ceremony and was invited to name a gorilla! She named her baby gorilla TWIRINDE. The name "TWIRINDE" - meaning "PROTECTION" - honors the commitment of park staff in safeguarding the safety and hygiene of the mountain gorillas by protecting themselves, their families, and the surrounding communities. This male baby gorilla was born on 24 December 2020 to mother Tegereza from the Ntambara family of mountain gorillas. Prof. Kaplin also participated in the Business of Conservation Conference (BCC) 2021 as an invited panelist with DFGFI, one of UR-CoEB's greatest partners in training conservation biology students, to discuss their new Ellen Degeneres campus that will enhance research capacity within the region and country. The BCC is organized by the ALU School of Wildlife Conservation (SOWC) in conjunction with RDB

and the Kwita Izina event.

The theme and core focus of this year's conference included building resilient wildlife economies. Throughout the conference discussions, which were all done virtually, a common theme emerged - that Africa's wildlife resources have immense economic value and form a critical natural asset for the region's development. BCC 2021 ended with reflective remarks and a SOWC research update by Dr Sue Snyman, SOWC's Director of Research, as well as a surprise fireside chat between ALU Founder Fred Swaniker and Mr. Nick Stone of FS Investor where they discussed challenges and opportunities for investing in Africa's wildlife economy. Nick stressed the importance of stability in making investments, good governance, and the ease of doing business. In her closing remark, the Acting Deputy CEO of RDB, Ms Louise Kanyonga emphasized the need for building resilient wildlife economies and pledged RDB's support in this. She also mentioned the upcoming African Protected Areas Congress that will be held in Kigali this coming March, 2022.

News From Our Nodes & Partners:

Dr. Lisa Dale, CoEB Honorary Research Fellow and her research on Climate adaptation in rural Rwanda



Dr. Lisa Dale, a Senior Research Fellow with CoEB, traveled from her home in the United States where she works at Columbia University, to lead projects focused on climate change adaptation in rural Rwanda. She hired four Rwandan post-graduate students – Isaac Hitimana, Aime Sandrine Uwase, Jeannette Batamuliza, and Noel Kwizera -- to serve as field enumerators, language

translators, and cultural brokers. The team conducted interviews with local agricultural communities in Rwanda. These interviews, which were recorded and later translated and transcribed into English, are now being analyzed. Final research findings will be made available soon.

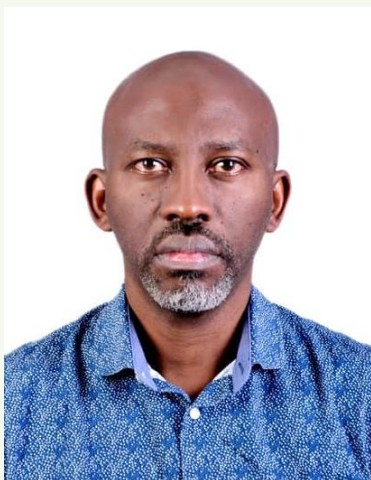
Pilot research on climate change adaptation in rural Rwanda was conducted through qualitative field research in May and June of this year. The first project focused on the effectiveness of Rwanda's long-term resettlement and villagization programs. It explored whether moving entire communities out of high-risk areas into planned villages, called imidugudu, contributes to national priorities for poverty reduction, environmental protection, and climate adaptation. The research team traveled to the Rweru Model Green Village in the Eastern Province near the Burundi border to interview resettled households.

The second project took a closer look at crop insurance for farmers. To date, while only some farmer cooperatives have had access to this kind of insurance, Rwanda's national government has partnered with private insurance companies to launch the National Agriculture Insurance Scheme, intended to make such policies more widespread. As a climate change adaptation strategy, crop insurance may help buffer the livelihoods of farmers from erratic rainfall and drought that are becoming increasingly prevalent during climate change. The research team visited with two farmers cooperatives in the Eastern Province in Ngoma and Rwamagana Districts, interviewing farmers to better understand their perspective. Lisa was a Fulbright Specialist in CoEB at UR in 2019 and continues to collaborate on research and training activities.

Creation of the Society for Conservation Biology, Rwanda Chapter

The first SCB Rwanda chapter meeting was held virtually on 29 August 2021. Dr. Antoine Nsabimana, who has been working tirelessly to get the chapter started, opened the meeting by welcoming all the participants. The SCB Rwanda chapter is starting with a minimum number of 21 members with different specialties like Forestry, Soil Science, Chemistry, Biology, and Environmental Sciences from different Universities (public and private), Public Institutions, and NGOs.

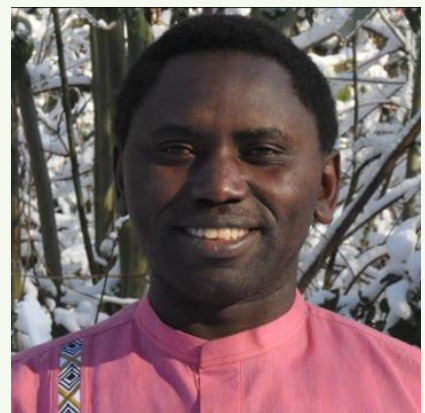
In accordance with the SCB, the chapter's mission is "to advance the science and practice of conserving Earth's biological diversity" and aims to "promote membership in the Society and participation in the Chapter's activities, to encourage an interdisciplinary approach to conservation biology, to promote the development of skills needed by professionals for effective participation in the field of conservation biology, to promote a forum for awareness of involvement in local and global conservation issues, to advance and articulate positions of the Society on the matters of public policy, to promote a high standard of professional integrity in the field of conservation biology. The SCB Rwanda chapter will be working closely with the Center of Excellence in Biodiversity and Natural Resource Management (CoEB) at the University of Rwanda-College of Science and Technology to achieve its goals. During the meeting, the members nominated the members of the Board of Director of Society for Conservation Biology - Rwanda Chapter as follows:



President:
Prof. Antoine Nsabimana,
University of Rwanda, College
of Science and Technology



Vice President:
Peter Rwibasira, University of
Rwanda, College of Science
and Technology



Secretary: Ir Jean Aimé
Ruticumugambi, Rwanda
Polytechnic -IPRC Kitabi



Treasurer: Aloysie
Manishimwe University of
Rwanda, College of
Science and Technology



Chairperson of the
Conservation Committee: Dr.
Venuste Nsengimana,
University of Rwanda, College
of Education.

Benefits of becoming a member of the SCB can be found on the website: www.conbio.org.

Benefits include:

1. Exclusive access to Conservation Connection, an online community for SCB members to collaborate, share and network with their peers in the field.
2. Access to SCB's monthly newsletter for the latest news and opportunities from SCB and the conservation sector.
3. Discounts to participate in project management and strategy development training for conservation from [WildTeam](#).
4. Discounts to attend ICCB and SCB Section congresses.
5. Listing in SCB's Expertise Database, including a personal profile, professional expertise and interests, employment history, social media links, and more.
6. Discount to publish in SCB's peer-reviewed journal Conservation Letters.
7. Discount to publish in SCB's peer-reviewed journal Conservation Science & Practice
8. Complementary online access to the SCB journal Conservation Biology and Biological Conservation for members in developing countries.
9. Discounted subscription rates for professionals and students in developed countries to Conservation Biology and Biological Conservation.
10. 35% discount on all Wiley book titles.
11. Opportunity to serve on SCB and SCB Group boards and committees.

We are encouraging staff from Public and Private Institutions and NGOs to join SCB Rwanda - Chapter. Do not hesitate to contact Dr. Antoine Nsabimana at antoine.nsabimana@gmail.com for any clarification on the Chapter.

The Government of Rwanda is committed to Centers of Excellence that will ensure research is available to meet national data needs for evidence-based decision making. University of Rwanda hosts several Centers which drive academic research, training and innovation in support of policy and management. The CoEB was formally established at University of Rwanda in 2016 and works across Colleges, Schools and departments. It engages with environmental scientists, biologists, social scientists, policy scientists, gender experts, ecological economists, anthropologists, chemists, pharmacists, molecular biologists, foresters, agronomists, climate scientists, and many others. We work with youth and seniors, with government and private sector, communities, practitioners, NGOs and international partners to meet our mission.

We are developing opportunities for youth and early career researchers to gain experience, we provide data for decision-makers, we are creating an academic/research culture, and making it enjoyable. We are creating a dynamic and welcoming atmosphere for academics and practitioners, we want science and research to be exciting and rewarding, and we are driven to contribute to sustainable development goals and achievement of climate resiliency and biodiversity conservation for Rwanda and the region.

Contact us!



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