

The PASET-Regional Scholarship and Innovation Fund for Applied Sciences, Engineering and Technology in Uganda





Rsif in Uganda



Research. Innovate. Transform Africa

Rsif - Designed for Impact

Flagship project of PASET



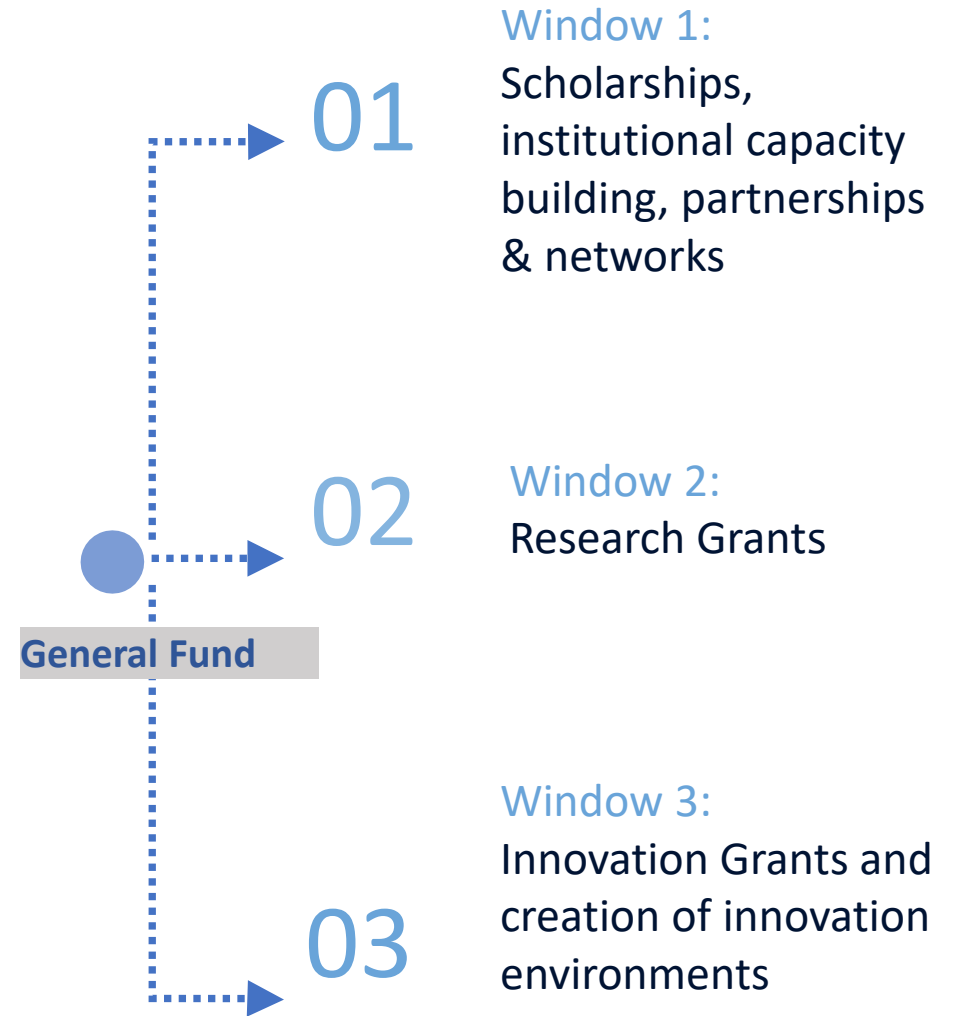
Building sustainable doctoral training, research and innovation ecosystems for development in Africa

Objectives

— Create a stock of highly skilled scientists, professionals and innovators in applied sciences, engineering and technology (ASET) areas

— Address imbalances in the number of women and disadvantaged groups in ASET fields in Africa

— Build African university capacity to provide relevant ASET training

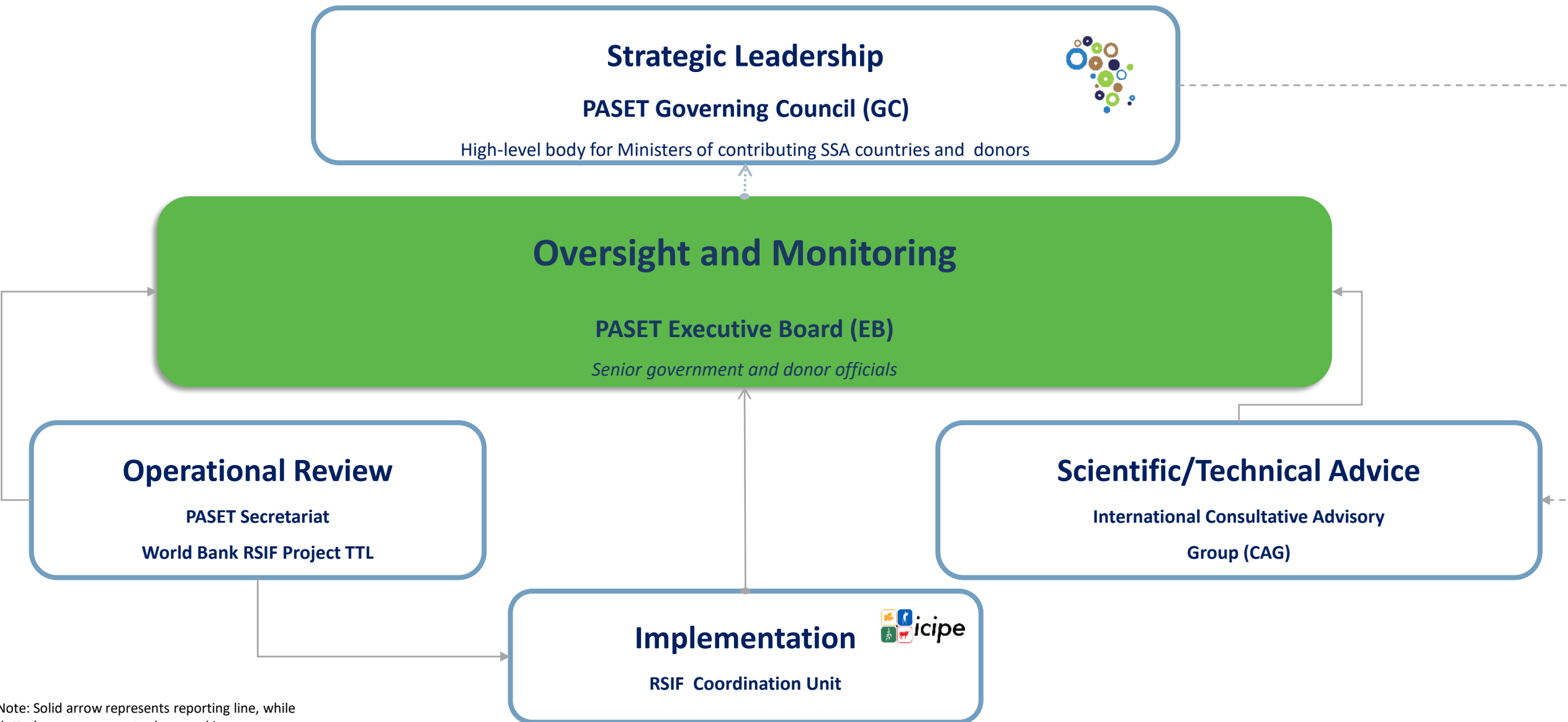


Rsif is a unique African initiative

1. Owned and managed by African governments through PASET (11 African governments)
2. To-date, investments from 9 African governments (between US\$1 -6 million each), the World Bank, Korea and other funders
3. Managed by an African led international research/innovation and training institution – *icipe*
4. Regional approach to grow Africa's STI agenda
5. Sustainability - vision to grow Rsif into a Pan-African science fund
 - establish a Permanent fund
 - exploring innovative financing and leveraging of private capital, e.g. blockchain technology, carbon credit, venture capital fund.



Inclusive, Efficient and Transparent Governance



Note: Solid arrow represents reporting line, while dotted arrow represents close working relationship

icipe Rsif - Fostering Excellence

- Highly Competitive Selection
- Ongoing Mentoring

- Selective Matching
- High Level of Interaction



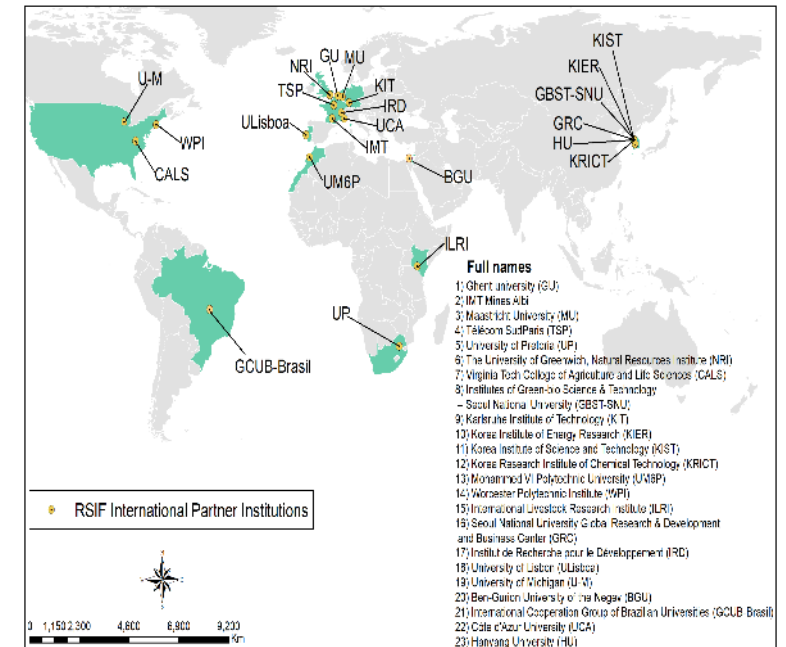
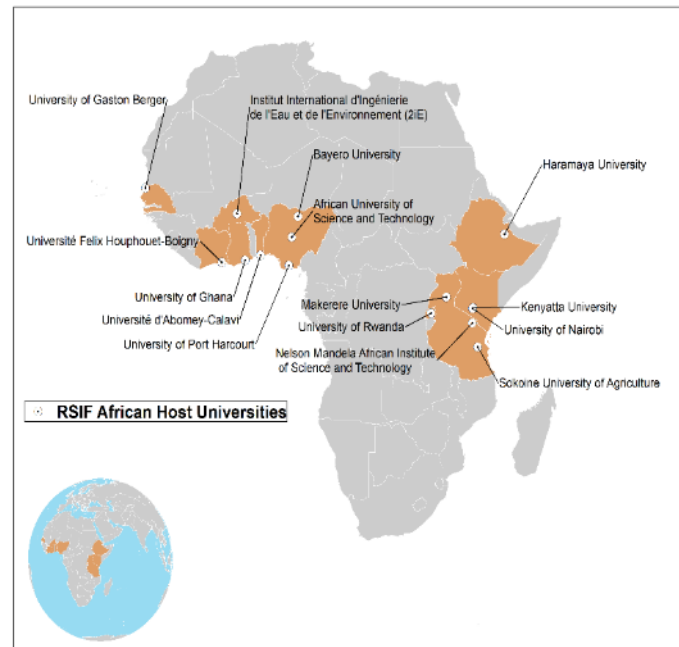
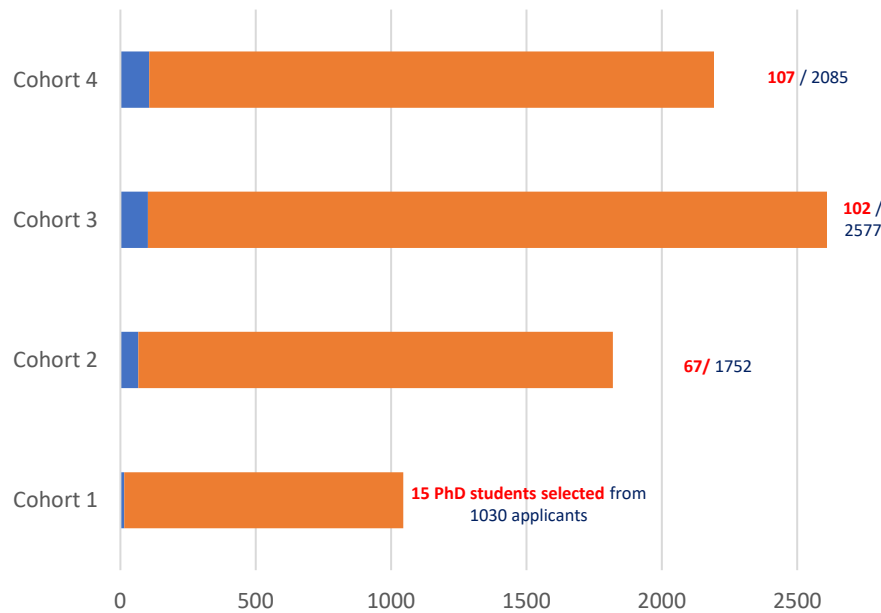
291 PhD Scholarships



15 African Host Universities
(4 AHUs admit first Rsif students in 2022)



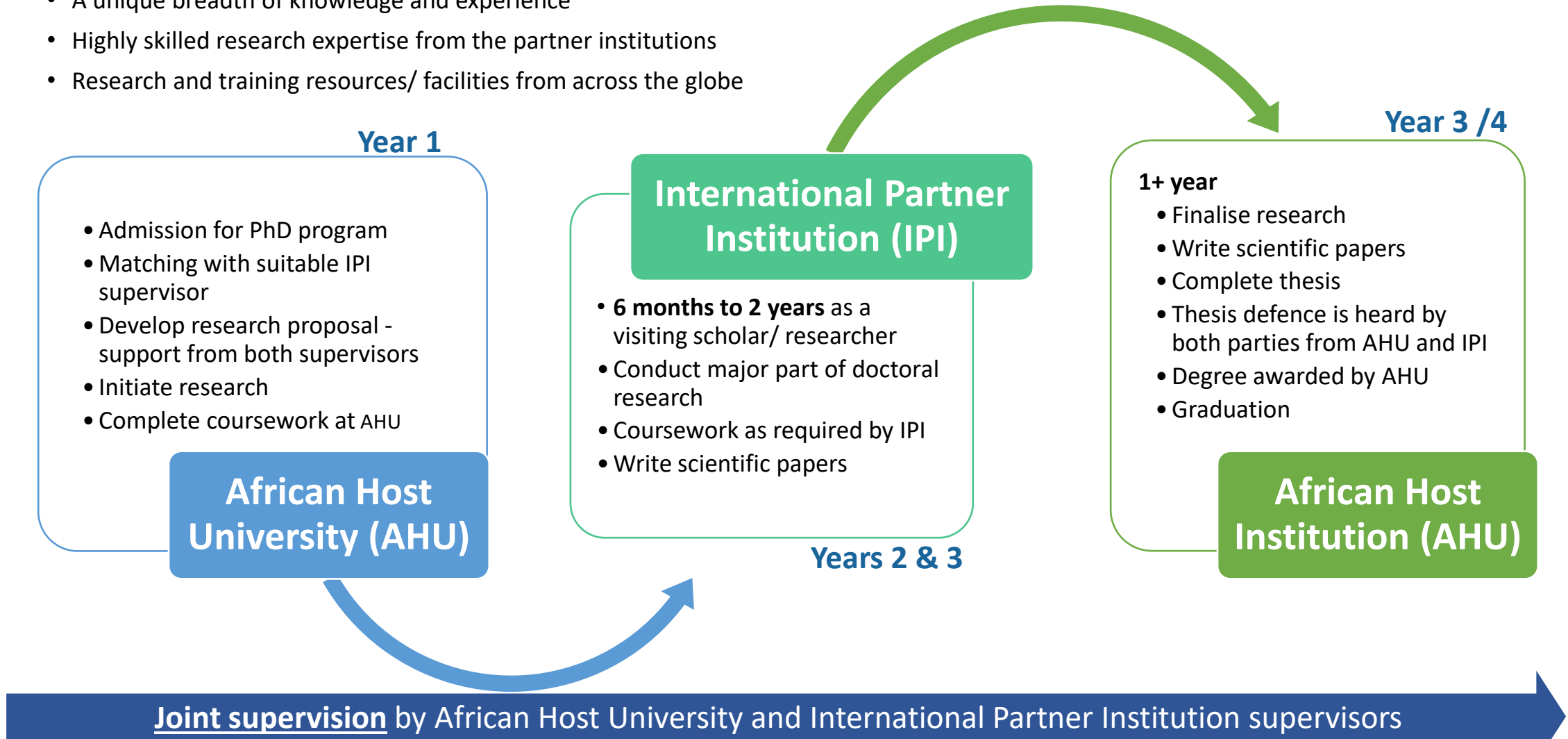
23 International Partner Institutes/universities



Rsif PhD Sandwich Model

Enables scholars and faculty members access to:

- A unique breadth of knowledge and experience
- Highly skilled research expertise from the partner institutions
- Research and training resources/ facilities from across the globe



Rsif and Uganda

- **Uganda has confirmed its intention to join PASET**
 - Upon contribution to Rsif, Uganda will participate in the PASET governance bodies
- **Investments in Rsif in pursuit of common agenda:**
 - supporting the building of international level PhD programmes anchored within African universities (i.e. MAK)
 - accelerating high quality PhD training
 - strengthening capacity for innovative research and respond to African challenges
- **Significant benefits to Uganda**



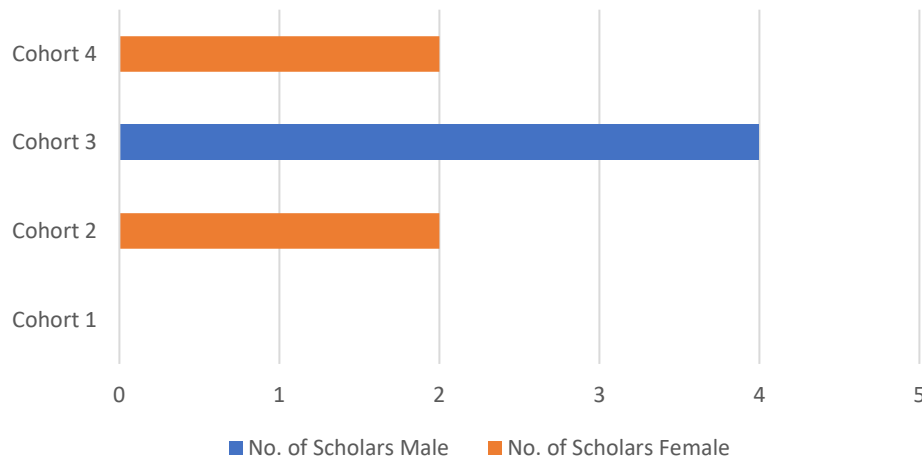
Photos: Ugandan
Rsif PhD students

Ugandan PhD Students Overview



- Eight Ugandan RSIF doctoral scholars (50% women)
- Scholars registered under 5 thematic areas in 8 African Host Universities (reduced “in-breeding”)

Ugandan Rsif PhD students



Thematic Area	African Host University	Scholars
Climate Change	Université Félix Houphouët-Boigny, Côte d'Ivoire	1
ICTs including Big Data & Artificial Intelligence	University of Gaston Berger, Senegal	1
	University of Rwanda, Rwanda	1
Minerals, Mining and Materials Engineering	Kenyatta University, Kenya	1
	Nelson Mandela African Institution of Science and Technology, Tanzania	1
Food Security and Agribusiness	University of Ghana, Ghana	1
	Makerere University, Uganda	1
Energy including renewables	University of Nairobi, Kenya	1

Building Uganda's Research and Training Ecosystem: Ugandan national RSIF PhD Students (8)

Cohort 2

- 1 scholar at AHU and collecting data in the field
- 1 scholar already started international research placements
- 1 journal publication

Cohort 3

- 4 scholars at their respective AHUs and collecting data in the field
- Scholars to start their international research placements

Cohort 4

- 2 scholars have reported to their AHU, in first year of study



Photo: Ugandan PhD student Harriet Sibitenda made a poster presentation at RSIF 2022 Conference in Morocco

Emerging impact – set to “snowball”...

First Ugandan Rsif student to start international research placement (2022)

Ms. Harriet Sibitenda, Uganda, Rsif Cohort 2

Research area: Computer Science

Registered at University Gaston Berger, Senegal
Placement at Worcester Polytechnic Institute (WPI), Boston USA.

Panelist and poster presentation in Rsif 2022 Conference in Morocco

Preparing to train the next generation of science leaders.
Solving critical problems.



Eight Ugandan RSIF PhD Students

Name of Student	Gender (M/F)	RSIF African Host University	Research topic	Status	International Partner Institution
Harriet Sibitenda	Female	University of Gaston Berger, Senegal	Analyzing African social networks data to identify development tracks for Africa through concerns formulated on African social networks	Preparing to start sandwich programme	Worcester Polytechnic Institute (WPI), Boston USA
Barbara Kabwiga Asingwire	Female	University of Rwanda, Rwanda	Architectural Design of IoT-based Healthcare Heterogeneous Traffic: Performance Analysis and Optimization	1 journal publication	GRC – SNU Seoul National University, Korea
Edward Bwayo	Male	Kenyatta University , Kenya	Spectral characteristics of ZnS/Ag metal film composite coated on float glass and recommendations for industrial and domestic buildings	At KU, Kenya	Korea Institute of Science and Technology (KIST) (To be confirmed)
Faisal Kiberu	Male	Nelson Mandela African Institution of Science and Technology , Tanzania	Experimental performance of burnt clay hollow block slab under seismic action in Uganda	In second year of study	Korea Institute of Science and Technology (KIST) (TBC)
Julius Ndemere	Male	Université Félix Houphouët-Boigny , Côte d'Ivoire	Small scale farmers adoption of climate smart land conservation options in Rubanda district-Uganda	At UFHB, Cote d'Ivoire	Natural Resources Institute, University of Greenwich, UK
Alex Sembito	Male	University of Nairobi, Kenya	Improving the efficiency of lead (pb) free perovskite solar cells as away forward for a new generation of cheap solar cells	At UoN, Kenya	University of Pretoria, South Africa
Diana Asero	Female	University of Ghana (UG), Ghana	Assessing economic Impact of Postharvest losses within the Pineapple value chain in Uganda	In first year of study	To be confirmed
Murenju Doreen Chelangat	Female	Makerere University, Uganda	Harnessing the potential of genomic prediction for key sweetpotato traits	In first year of study	To be confirmed

Benefits to Ugandan Institutions

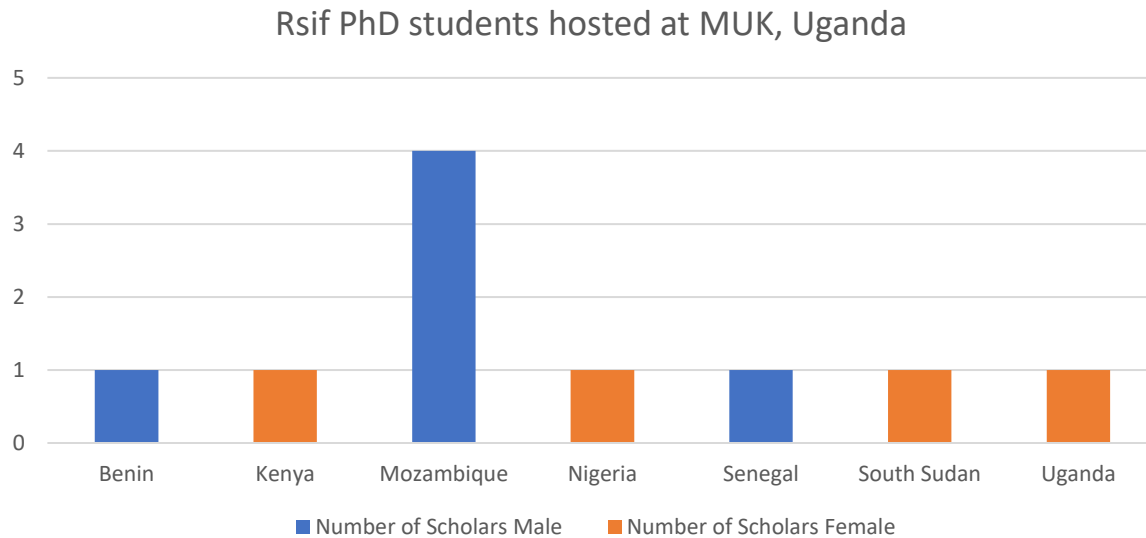


Research. Innovate. Transform Africa

Makerere University

– an Rsif African Host University

- Makerere Regional Centre for Crop Improvement (MaRCCi)
- PhD programme in Plant Breeding and Biotechnology
- Hosting 10 Rsif PhD scholars (40% women) from 7 African countries
- All are in Rsif cohort 4 (2022)



Rsif PhD students at MUK, Uganda, Cohort 4 (2022)

No	Name	Nationality	Gender	Research topic	Status	International Partner Institution
1	Mahoussi Kadoukpe Arnaud DJANTA	Benin	Male	Development of iron & zinc improved vegetable soybean [Glycine max (L.) merr] cultivars with consideration of agronomic traits	In first year of study	To be confirmed
2	Emmaculate Akinyi Ogutu	Kenya	Female	Development of novel strategies for stripe rust (Puccinia striiformis f.sp hordei) resistance and heat stress tolerance in genetically diverse panel of barley (Hordeum vulgare ssp. vulgare) germplasm	“	To be confirmed
3	Antonio Daniel Pedro Maquil	Mozambique	Male	Election of manioc genotypes (Manihot Esculenta Crantz) based on multiple characteristics for different uses in Mozambique	“	To be confirmed
4	Aurelio Salvador Macaringue	Mozambique	Male	Identifying natural genetic variation to combined heat and drought stress in wheat landraces	“	To be confirmed
5	Norberto Jose Palange	Mozambique	Male	Enhancement of Zea mays Nutritional Quality and Grain Growth by Activation of Biochemical Mechanisms using CRISPR/Cas9	“	To be confirmed
6	Stelio Boaventura Paulino Nuvunga	Mozambique	Male	Effects of degraded soil recovery methods for rice production at Chòkwé Irrigation System	“	To be confirmed
7	Toyin Beatrice Osho	Nigeria	Female	Screening for mosaic disease resistance and effect of genotype, age and fertilizer on hydrogen cyanide (HCN) content in cassava	“	To be confirmed
8	Aliou BA	Senegal	Male	Genomic prediction on important agricultural traits in sweet potato	“	To be confirmed
9	Catherine Kaku Santilino Kenyi	South Sudan	Female	Resistance of maize to lethal necrosis disease and diversity of Maize Chlorotic Mottle Virus occurring in South Sudan	“	To be confirmed
10	Murenju Doreen Chelangat	Uganda	Female	Harnessing the potential of genomic prediction for key sweetpotato traits	“	To be confirmed

Strengthening research networks for MUK

International Partner Institutions (IPIs) signing agreements and exchanging staff and students with MUK:

1. Virginia Tech, USA
2. Ghent University, Belgium
3. University of Pretoria, South Africa
4. Ben Gurion University of the Negev, Israel



MUK was invited to the RSIF 2022 conference at University Mohammed VI Polytechnic in Morocco.

Ugandan graduates and universities are eligible to apply for Rsif Research and Innovation grants.

Multiple benefits to Uganda's research and innovation ecosystem

1. Rsif graduates, with strong research networks, able to “win” additional research awards.
2. Reduced “inbreeding” at Ugandan universities
3. MUK students and faculty benefit from various trainings such as information literacy and reference management; data science and management, etc.
4. New institutional research and training networks including with Virginia Tech, U-Gent, University of Pretoria, Ben Gurion University of the Negev, etc.
5. Graduates equipped with advanced technologies, cross cutting and technical skills and relevant international, regional and national networks
6. Research outputs and knowledge generated in line with national priorities: e.g. addressing food security, climate change, green technologies, etc.

[VIDEO](#) – Meet Barbara Kabwiga Asingwire.

An Rsif PhD scholar at the University of Rwanda with research placement at GRC - Seoul National University, Korea

Video link:

https://www.youtube.com/watch?v=0WdB_sP7EZY



Thank You

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