

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





Rsif in Ethiopia



Research. Innovate. Transform Africa

Rsif - Designed for Impact

Flagship project of PASET



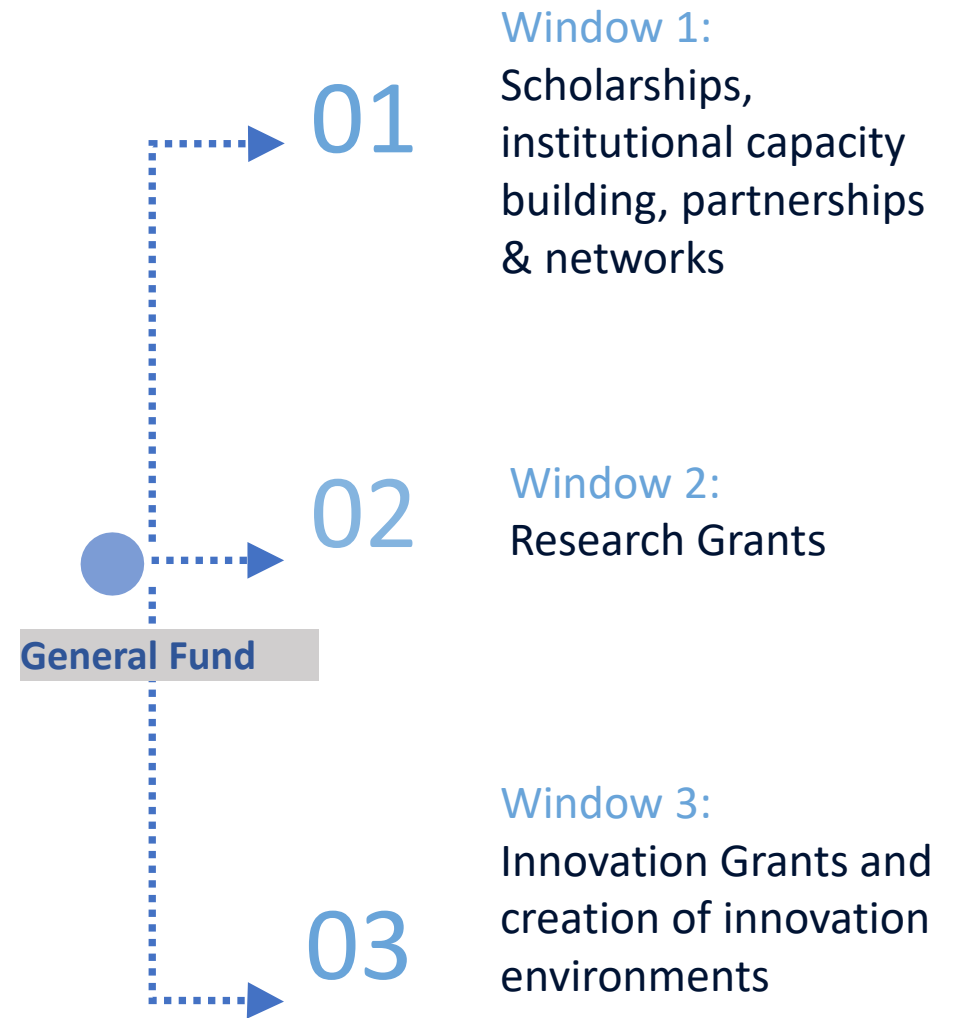
Building sustainable doctoral training, research and innovation ecosystems for development in Africa

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

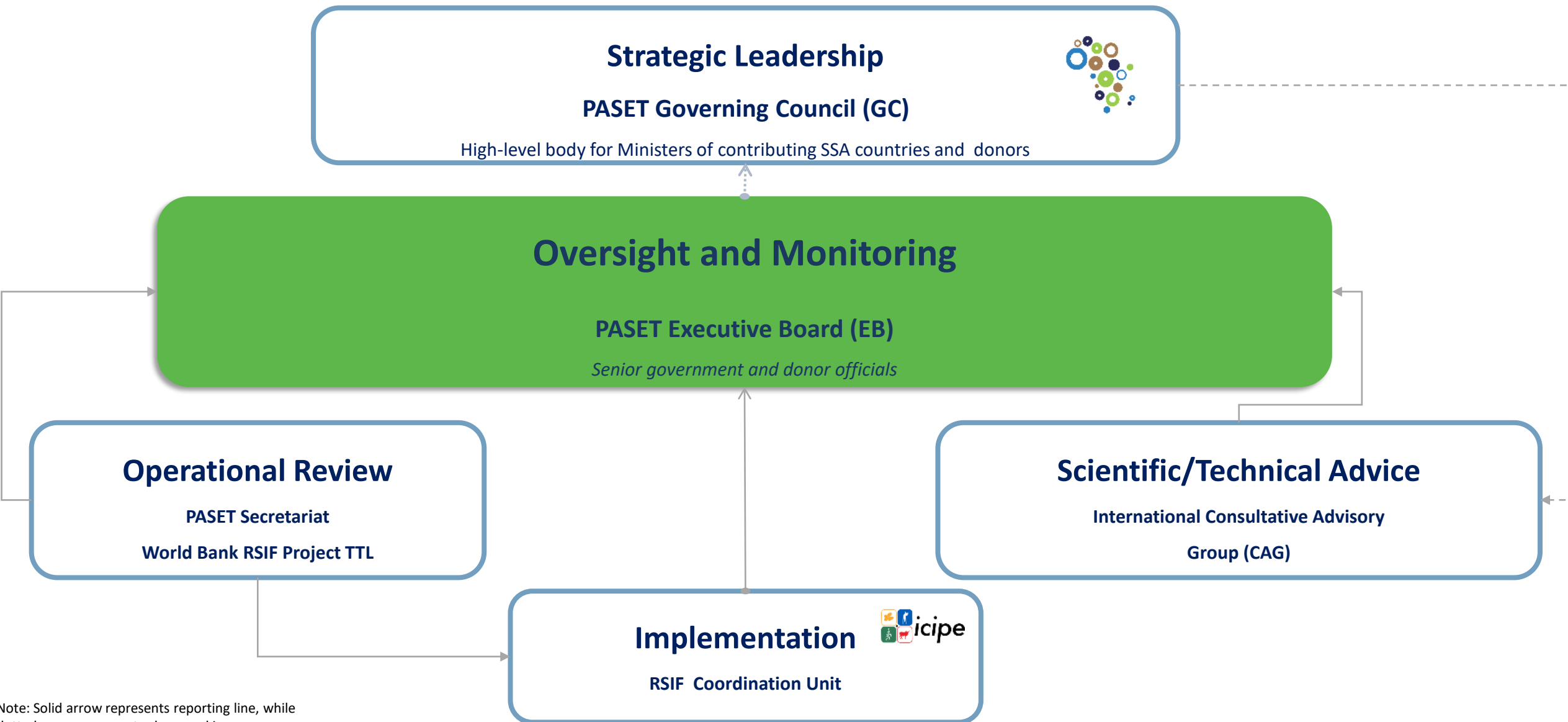


Rsif is a unique African initiative

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



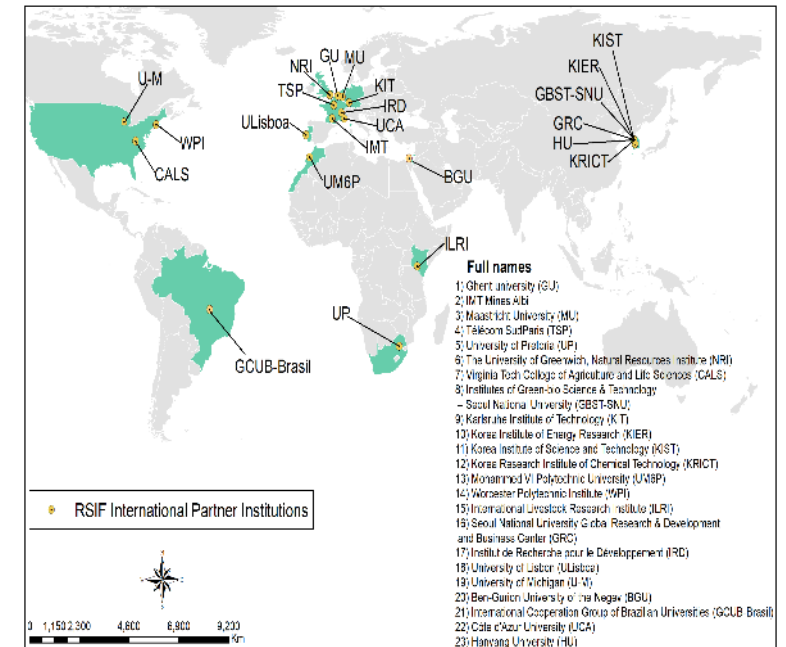
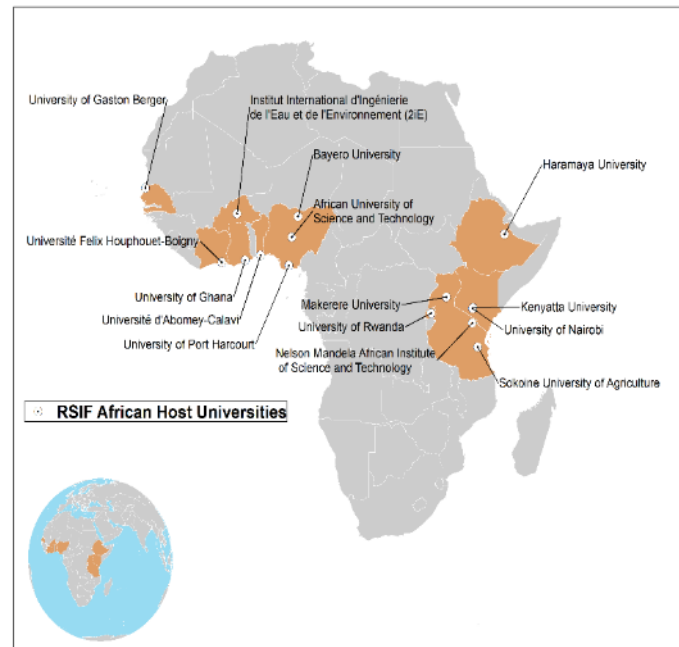
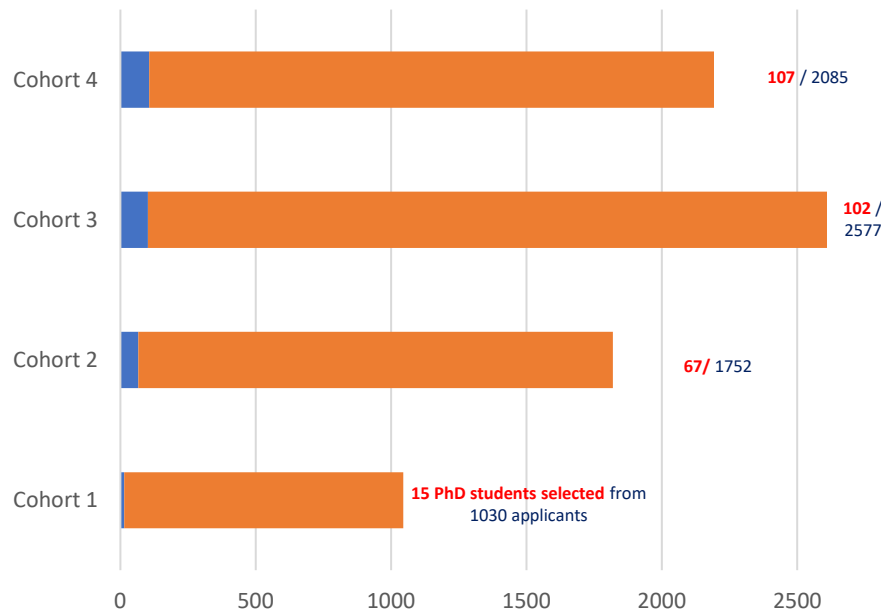
291 PhD Scholarships



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



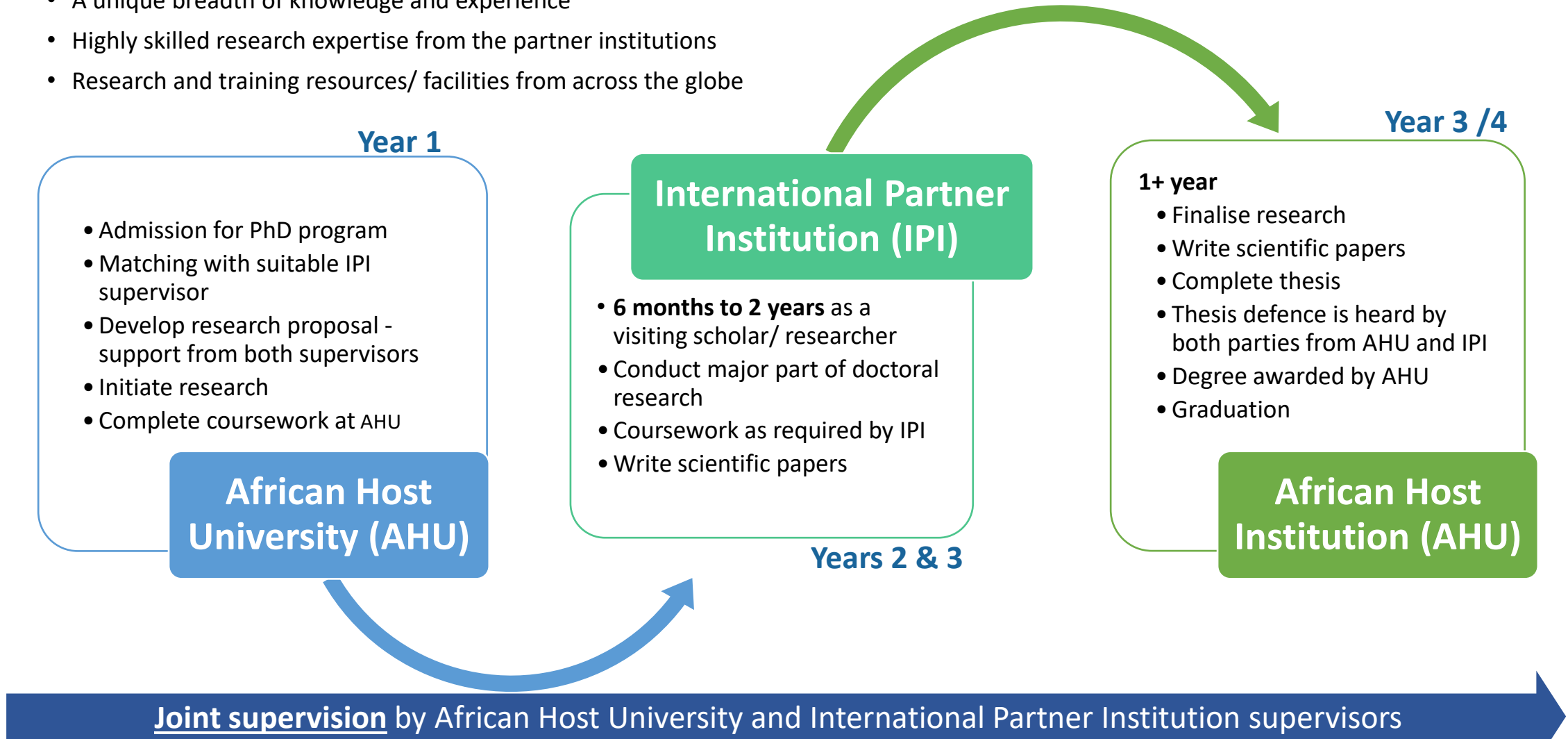
23 International Partner Institutes/universities



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 Ethiopia

- **Ethiopia is a founding member of PASET**
 - Ethiopia participates in the PASET Executive Board
 - Mr. Paulos Beyene, Ministry of Education
- **Investments in Rsif in pursuit of common agenda**
 - supporting the building of international level PhD programmes anchored within African universities (i.e. Haramaya University)
 - accelerating high quality PhD training
 - strengthening capacity for innovative research and respond to African challenges
- **Significant benefits to Ethiopia**
 - Ethiopia has committed to make initial USD 2m contribution to Rsif



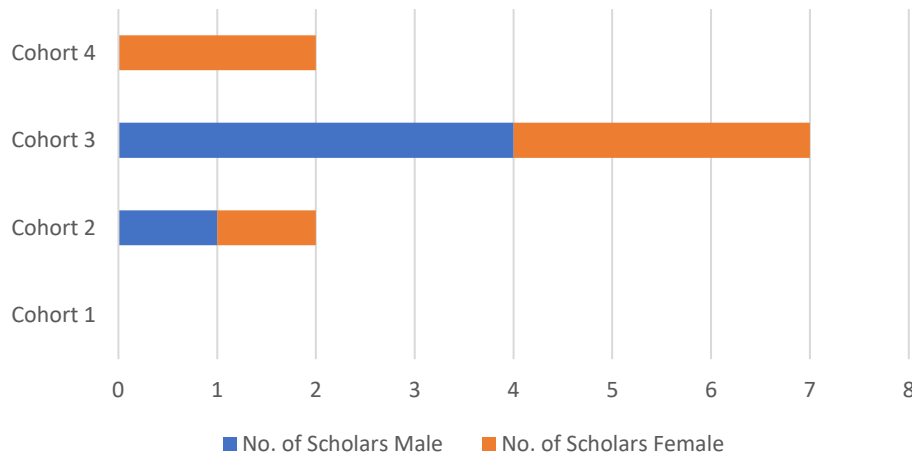
Photos: Ethiopia Ministry of Education and Haramaya University participated in the Rsif 2022 Conference in Morocco

Ethiopian PhD Students Overview



- 11 Ethiopian Rsif doctoral scholars (55% women)
- Scholars registered under 4 thematic areas in 7 African Host Universities (reduced “in-breeding”)
- 6 publications to date

Ethiopian Rsif PhD students



| Thematic Area | African Host University | Scholars |
|---|--|----------|
| Climate Change | Université Félix Houphouët-Boigny, Côte d'Ivoire | 1 |
| | Bayero University Kano, Nigeria | 4 |
| | Haramaya University, Ethiopia | 1 |
| ICTs including Big Data & Artificial Intelligence | University of Rwanda, Rwanda | 1 |
| Minerals, Mining and Materials Engineering | Nelson Mandela African Institution of Science and Technology, Tanzania | 1 |
| Food Security and Agribusiness | University of Ghana, Ghana | 2 |
| | Sokoine University of Agriculture, Tanzania | 1 |

Building Ethiopia's Research and Training Ecosystem: Ethiopian national Rsif PhD Students (11)

Cohort 2

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

Cohort 3

- 7 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: The Haramaya University President and Representative of the Minister of Education at the Rsif Conference 2022 in Morocco

Ethiopian Rsif PhD Students - 1

| No | Name of Student | Gender (M/F) | RSIF African Host University | Research topic | Status | International Partner Institution |
|----|------------------------|--------------|--|---|--|--|
| 1 | Fenet Belay Daba | F | Bayero University Kano, Nigeria | Impact of agricultural adaptation strategies to climate change and variability on farm households' food security in Ethiopia | At NRI, UK | Natural Resources Institute (NRI), University of Greenwich, UK |
| 2 | Haftu Abrha Mengesha | M | Université Félix Houphouët-Boigny, Côte d'Ivoire | Plant biodiversity and ecosystem service response to land use and climate change in Hugumburda Grat-Kahsu National Forest, Northern Ethiopia | In the field for data collection 6 publications | University Mohammed VI Polytechnic, Morocco |
| 3 | Birki Gurmessa | F | Bayero University Kano, Nigeria | Climate change adaptation and mitigation strategies, and early warning systems to build pastorals resilience: empirical evidence from Borana pastorals, Southern Ethiopia | At BUK | IMT Albi Mines France |
| 4 | Desta Mulu/Gebeyehu | F | Bayero University Kano, Nigeria | Implication of acacia decurrence tree-based (acacia woodlots for charcoal production) intensification to build resilience of socio-ecological systems to climate variability in Injibara, Northwestern Ethiopia | At BUK | To be confirmed |
| 5 | Tsegaye Girma Bekalo | M | Bayero University Kano, Nigeria | Soils Under Simulated Warming: Microbial Metabolic Response and Carbon Modelling | At BUK | To be confirmed |
| 6 | Betelhem Tsedalu Adane | F | University of Ghana, Ghana | Value Chain Analysis of Eucalyptus Woodlot Products of Smallholder Farmers in Amhara Region, Ethiopia | At UG | To be confirmed |

VIDEO — Meet Fenet Belay Daba

An Rsif PhD scholar at the University of Bayero, Nigeria with research placement at the Natural Resources Institute, University of Greenwich, UK

Video link:

https://www.youtube.com/watch?v=8w_xsYNh4Wk



Continued – Ethiopian Rsif PhD Students - 2

| No | Name of Student | Gender (M/F) | Rsif African Host University | Research topic | Status | International Partner Institution |
|----|----------------------|--------------|--|---|--|--|
| 7 | Tiruha Karssa | M | Sokoine University of Agriculture, Tanzania | Molecular Mechanisms of Antimicrobial Resistance in Food borne pathogens | At SUA | To be confirmed |
| 8 | Zerhun Ganewo Galato | M | University of Ghana, Ghana | Food Security through commercialization of cereals and underutilized crops: Gender-based analysis to link smallholder farmers with agro-processing industry | At UG | To be confirmed |
| 9 | Amsalu Tomas Chuma | M | University of Rwanda, Rwanda | Multi-step Deep Learning for Handheld Automatic Medical Images Annotation (IoT and Embedded Sys) | At UR, preparing for international placement | Karlsruhe Institute of Technology (KIT), Germany |
| 10 | Fekere Fugaro Uwito | F | Haramaya University, Ethiopia | Evaluation of Ethiopian wheat (<i>Triticum</i> spp. and varieties) using morphological traits and molecular markers in response to climate change under different agroclimatic zones | At HU | To be confirmed |
| 11 | Tsion Amsalu | F | Nelson Mandela African Institution of Science and Technology, Tanzania | Investigation of bentonite and kaolin exist in Ethiopia as partially replacement of Portland pozzolana cement on morphological characteristics of concrete | At NM-AIST | To be confirmed |

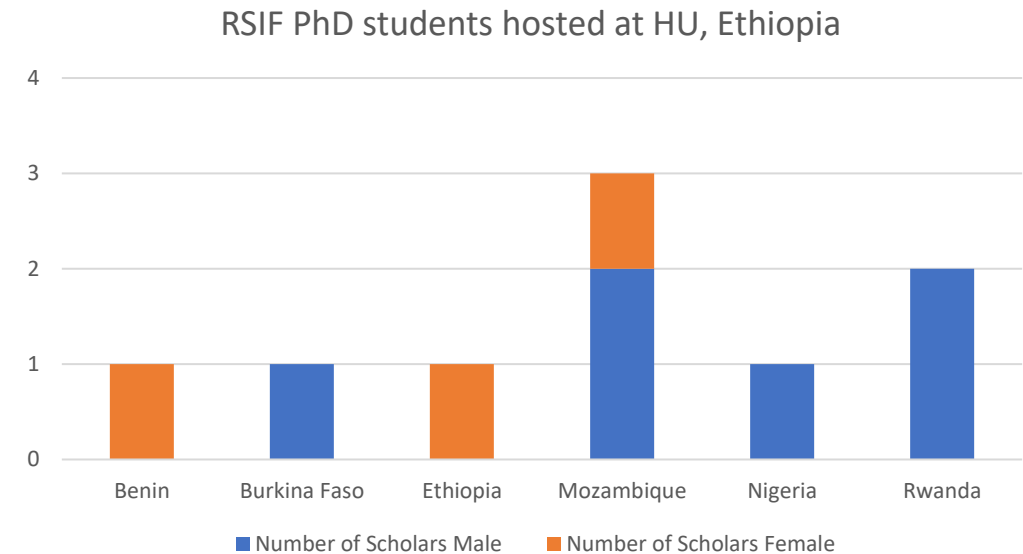
Benefits to Ethiopian Institutions



Research. Innovate. Transform Africa

Benefits to Haramaya University (HU) – an Rsif African Host University since 2021

- African Center of Excellence for Climate Smart Agriculture and Biodiversity
- PhD programme in Climate Smart Agriculture and Biodiversity Conservation
- Hosting nine Rsif cohort 4 (2022) PhD scholars (33% women)
- Eight international students from five other African countries (Benin, Burkina Faso, Mozambique, Nigeria and Rwanda)



Nine Rsif fully funded PhD students at HU in first year of study (2022)

| No | Name | Nationality | Gender (F/M) | Research topic | Status |
|----|---------------------------------|--------------|--------------|---|--------|
| 1 | Jesugnon Esther Aldegonde Kpodo | Benin | F | Nature-based solutions in agricultural sector: what's gender got to do with it? | |
| 2 | Issaka Abdou Razakou KIRIBOU | Burkina Faso | M | Spatial and temporal Carbon dioxide (CO ₂) emission dynamics in West African savanna's agroforestry system | |
| 3 | Fekere Fugaro Uwito | Ethiopia | F | Evaluation of Ethiopian wheat (<i>Triticum</i> spp. and varieties) using morphological traits and molecular markers in response to climate change under different agroclimatic zones | |
| 4 | Heraclito Rodrigues Comia | Mozambique | M | Capacity building for disaster management in northern Mozambique under climate change | |
| 5 | Janete Mutualbo Americano | Mozambique | F | Development of a model for the quantification of soil fertility parameters, through Mid-Infrared Spectroscopy and Remote Sensing in acid and alkaline soils in central Mozambique | |
| 6 | Rodolfo Bernardo Chissico | Mozambique | M | Environmental monitoring of pesticide use in agriculture using bioindicators | |
| 7 | Jonathan Odafe Eveso | Nigeria | M | Assessing bird species vulnerability to climatic changes and wetland use in the Hadejia-Nguru Wetlands, Nigeria | |
| 8 | Charles Lwanga TWAGIRAMUNGU | Rwanda | M | Designing a Biochar from plant-based biomass for purposes of improving soil properties and reducing greenhouse gas emissions from the soil | |
| 9 | Elie NTIRENGANYA | Rwanda | M | Assessment of socio-ecological conflicts and losses associated to pesticides application and Honeybee's production among farmers around Gishwati-Mukura National Park, Rwanda. | |

Meet Janete Mutualbo Americano



- **African Host University:**
Haramaya University, Ethiopia
- **PhD programme:**
Climate Smart Agriculture
- **Research topic:**
Development of a model for the quantification of soil fertility parameters, through mid-infrared spectroscopy and remote sensing in acid and alkaline soils in central Mozambique
- Presented at RSIF/MozSkills Results Sharing Seminar in Maputo 14-Oct-22

Strengthening Research Networks for HU

- 23 potential International Partner Institutions (IPIs) to sign agreements and exchange staff and students with HU
- HU participated at the Rsif 2022 conference at University Mohammed VI Polytechnic in Morocco.
- Three HU faculty members participated in grants writing workshop at *icipe* in 2022
- Ethiopian graduates and universities are eligible to apply for Rsif Research and Innovation grants.

Multiple benefits to Ethiopia's research and innovation ecosystem

1. Rsif graduates, with strong research networks, able to “win” additional research awards.
2. Reduced “inbreeding” at Ethiopian universities
3. HU benefit from various trainings e.g.
 1. Grant writing workshop
 2. Information literacy training workshops
4. New institutional research and training networks including with UM6P, etc.
5. Graduates equipped with advanced technologies, cross cutting and technical skills and relevant international, regional and national networks
6. Six (6) journal publications from Ethiopian Rsif students to date in high impact journals
7. Research outputs and knowledge generated in line with national priorities: e.g. food security, climate change, green technologies, etc.

Emerging impact – set to “snowball”...

First Ethiopian Rsif PhD student on international research placement (2022)

Ms. Fenet Belay Daba, Ethiopia

Rsif cohort 2 student

Research area: Impact of agricultural adaptation strategies to climate change and variability on farm households' food security in South Western Ethiopia

- Registered at Bayero University Kano, Nigeria
- Placement at University of Greenwich, Natural Resources Institute (NRI), United Kingdom
- Preparing to train the next generation of science leaders. Solving critical problems.



Video - Meet Meet Mengesha Haftu

Rsif PhD scholar at the Université Félix Houphouët-Boigny, Côte d'Ivoire. Research placement to University Mohammed VI Polytechnic, Morocco

Video link:

<https://www.youtube.com/watch?v=kQDCp4HmNjQ>



Thank You

Regional Coordination Unit (RCU)

International Centre of Insect Physiology and Ecology (icipe)

P.O. Box 30772 – 00100, Nairobi, Kenya

Tel +254 (20) 8632000

Email: rsif@icipe.org

Website: www.rsif-paset.org

