

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





Rsif in Burkina Faso



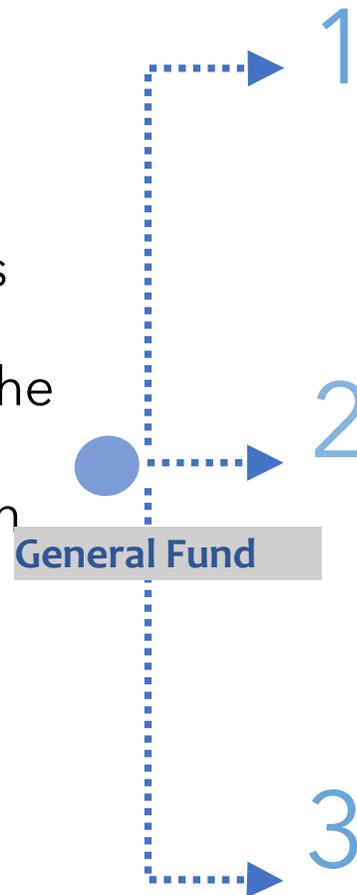
Research. Innovate. Transform Africa

Rsif Designed for Impact

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

Objectives

- Create a stock of highly skilled scientists, professionals and innovators in 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



Window 1:
Scholarships, institutional capacity building, partnerships & networks

Window 2:
Research Grants

Window 3:
Innovation Grants and creation of innovation environments

Rsif supports five priority thematic areas



ICTs including big data and artificial intelligence



Food security and agribusiness



Minerals, mining and materials engineering



Energy including renewables



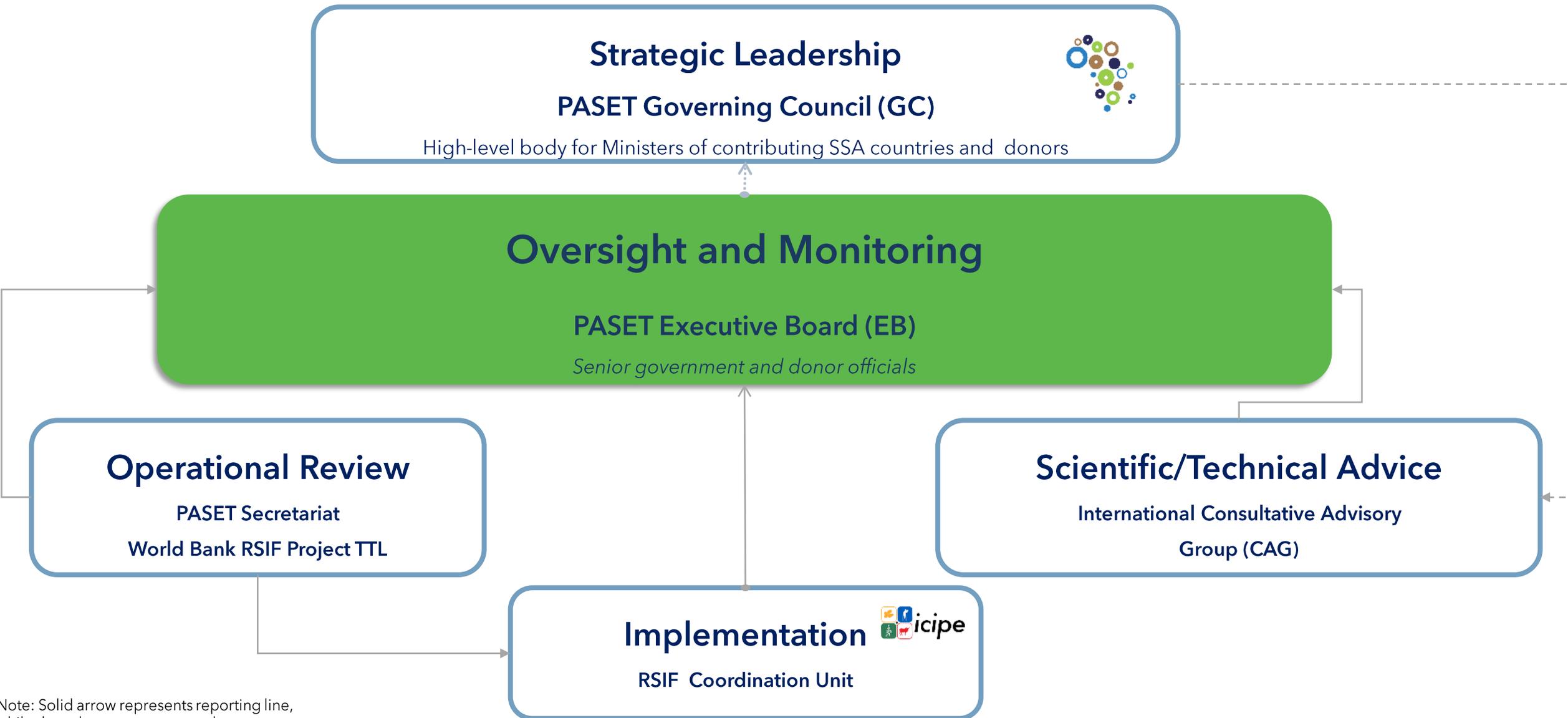
Climate change

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



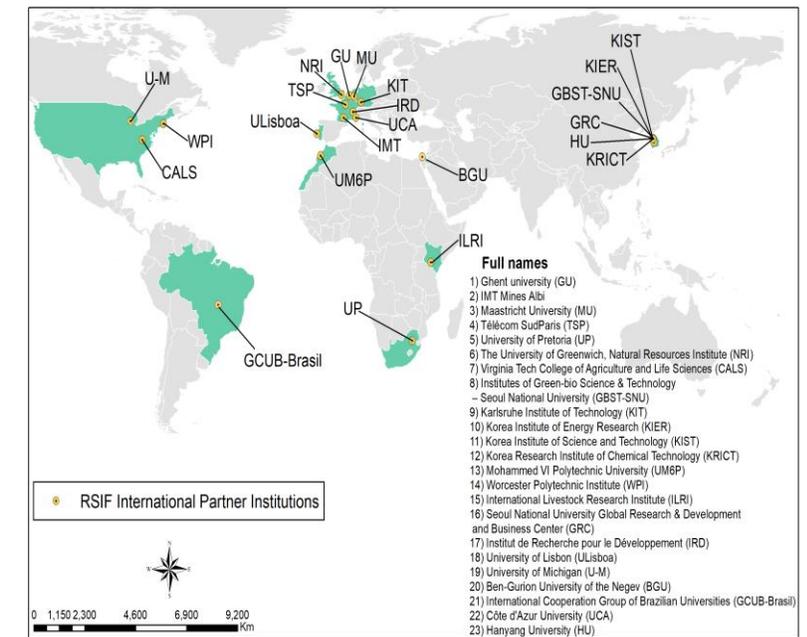
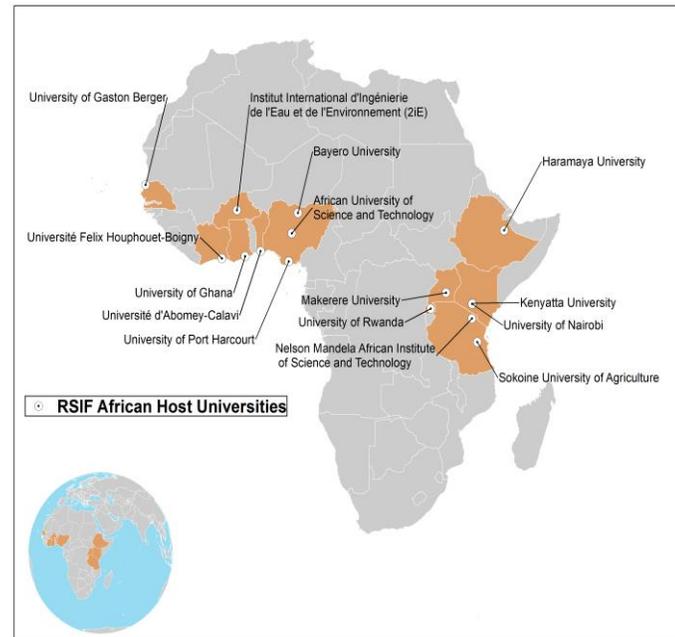
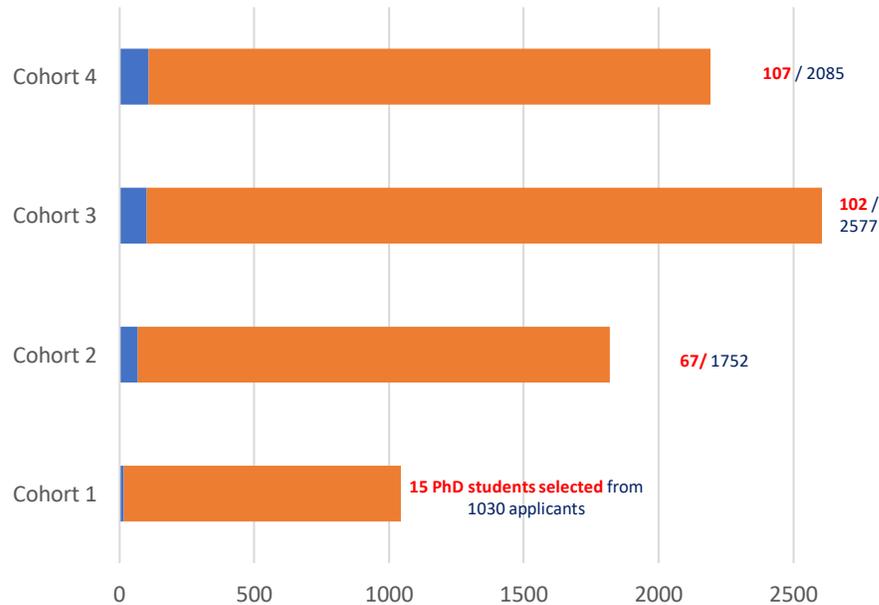
291 PhD Scholarships



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



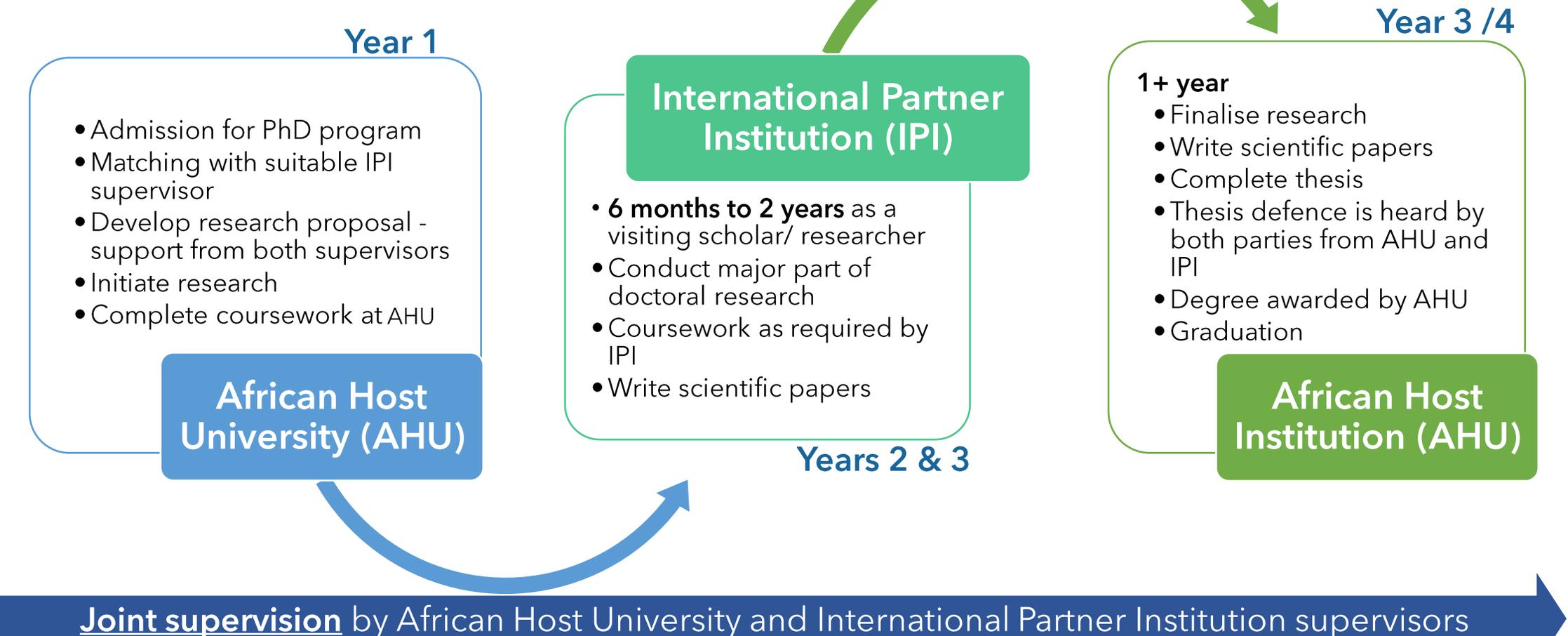
23 International Partner Institutes/universities



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 Burkina Faso

- **Burkina Faso is a member of PASET**
 - Burkina Faso participates in PASET Executive Board – Prof. Sado Traoré, Director General Higher Education, MESRSI
- **Investments in RSIF in pursuit of common agenda**
 - supporting the building of international level PhD programmes anchored within African universities (i.e. 2iE)
 - accelerating high quality PhD training
 - strengthening capacity for innovative research and respond to African challenges
- **Significant benefits to Burkina Faso**
 - Burkina Faso made contribution of USD 2 million to RSIF in 2020



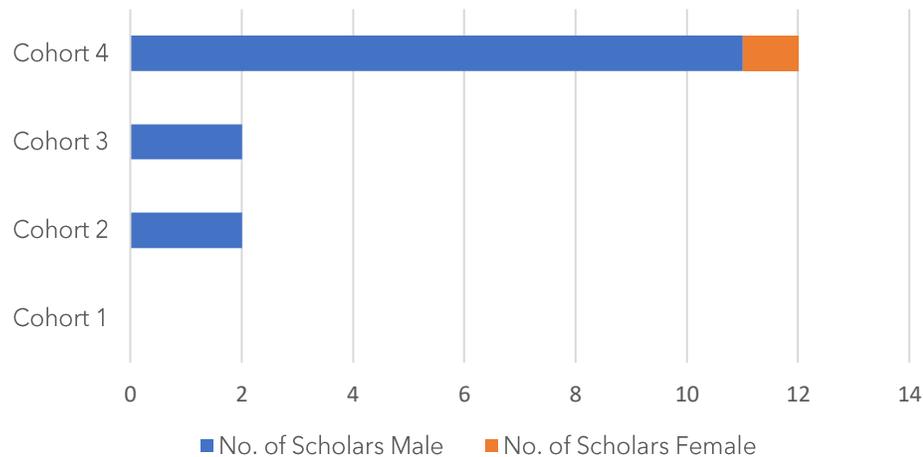
Photo: Prof. Sado Traoré, Director General Higher Education, MESRSI represented Burkina Faso in the PASET governance meetings in Kigali, Rwanda on 2 February 2023

Burkinabè PhD Students Overview



- 16 Burkinabè Rsif doctoral scholars (1 woman, 15 men)
- Scholars registered under 4 thematic areas in 7 African Host Universities (reduced “in-breeding”)

Burkinabè Rsif PhD scholars



Thematic Area	African Host University	Burkinabè scholars
Climate Change	Université Félix Houphouët-Boigny, Côte d'Ivoire	1
	Haramaya University, Ethiopia	1
ICTs including Big Data & Artificial Intelligence	Université d'Abomey-Calavi, Benin	1
	University of Gaston Berger, Senegal	2
Minerals, Mining and Materials Engineering	Kenyatta University, Kenya	2
	Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE), Burkina Faso	6
Energy including renewables	University of Nairobi, Kenya	3

Building Burkina Faso's Research and Training Ecosystem: Burkinabè national RSIF PhD Students (16)

Cohort 2

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

Cohort 3

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

Cohort 4

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



Photo: Sami Florent Palm, Burkina Faso (Rsif cohort 2) started his international placement at University Mohammed VI Polytechnic in Morocco in June 2022 with fellow Rsif student from Malawi

Burkinabè Rsif PhD Students Status

No.	Name of Student	RSIF African Host University	PhD Research Project Title	Status	International Partner Institution
1	Sami Florent Palm	University of Nairobi, Kenya	Techno-economic impact of photovoltaic solar power plants connected to the electricity network under Sahelian climate: the case of Burkina Faso	At UM6P, Morocco 1 publication	University Mohammed VI Polytechnic, Morocco
2	Zakaria Sawadogo	University of Gaston Berger, Senegal	Continuous evaluation of Android malware detection features through machine learnin	3 journal publications	NRI, University of Greenwich, UK
3	Alassane Compaore	Kenyatta University, Kenya	Formulation and characterization of lightweight concrete: use of foam and minerals from Burkina as raw materials.	Preparing for international placement	Worcester Polytechnic Institute, USA
4	Aboubacar Savadogo	University of Nairobi, Kenya	Solar Energy - Study of a solar cell with radial n + / p junction of polycrystalline silicon semiconductor in static regime under monochromatic illumination: determination of the recombination parameter	Preparing for international placement	Worcester Polytechnic Institute, USA

Burkinabè Rsif PhD Students – In first year of study

No.	Name of Student	RSIF African Host University	Research topic	International Partner Institution
5	Issaka Abdou Razakou KIRIBOU	Haramaya University, Ethiopia	Design of extreme climatic events monitoring system in West-African savanna's zone: Case of the cross-border park	To be confirmed
6	Idrissa Sawadogo	Université Felix Houphouët-Boigny, Côte d'Ivoire	Impacts des changements d'utilisation et d'occupation des terres sur la productivité des pâturages le long du corridor de transhumance BurkinaTogo dans un contexte de changement climatique	To be confirmed
7	Alphonse BOUDA	Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE)	Analyse des impacts du changement climatique sur le confort thermique : température et humidité interne dans un bâtiment type au Burkina Faso	To be confirmed
8	Guétinsom Jean KAFANDO	2iE, Burkina Faso	Etude d'un système de production de vapeur d'eau par une chaudière solaire : application à la pasteurisation du lait	To be confirmed
9	Hamado OUEDRAOGO	2iE, Burkina Faso	Etude expérimentale, modélisation et optimisation de la conversion t gazéification de la biomasse et des déchets hermochimique par solides connexes	To be confirmed
10	Lamine BAYALA	2iE, Burkina Faso	Détection et localisation de défaut sur un Système solaire photovoltaïque connecté au réseau électrique avec simulation temps reel sous un climat tropical (Cas du Burkina Faso)	To be confirmed
11	OUOBA Bazam Amonet NEBIE	2iE, Burkina Faso	Contribution à la conception de bâtiments administratifs intelligents à faible consommation énergétique dans le contexte du climat tropical	To be confirmed
12	Souwera Stan Lionnel SOMDA	2iE, Burkina Faso	Contribution de l'énergie éolienne dans la production décentralisée d'électricité à partir d'aérogénérateurs conçus à base de matériaux recyclables	To be confirmed
13	Bourahima SAVADOGO	University of Nairobi, Kenya	Modeling, Simulation and characterization of photovoltaic devices based on Cu ₂ ZnSnSe ₄ (CZTS).	To be confirmed
14	Adama Coulibaly	University of Gaston Berger, Senegal	Contribution to the optimization of dynamic remote monitoring by AI UAV: case of transport and digital mobility in Dakar city	To be confirmed
15	Theodore NIKIEMA	Université d'Abomey-Calavi, Benin	Proposition d'une application mobile de collecte de données sous CSPro pour le suivi et l'évaluation des exploitations agro-écologiques au Burkina Faso	To be confirmed
16	Brice Alain KABORE	Kenyatta University, Kenya	Development of electroanalytical methods for the determination of organic and inorganic pollutants in environmental matrices / Implementation of local and/or synthetic materials for the elimination of organic and inorganic pollutants in environmental matrices	To be confirmed

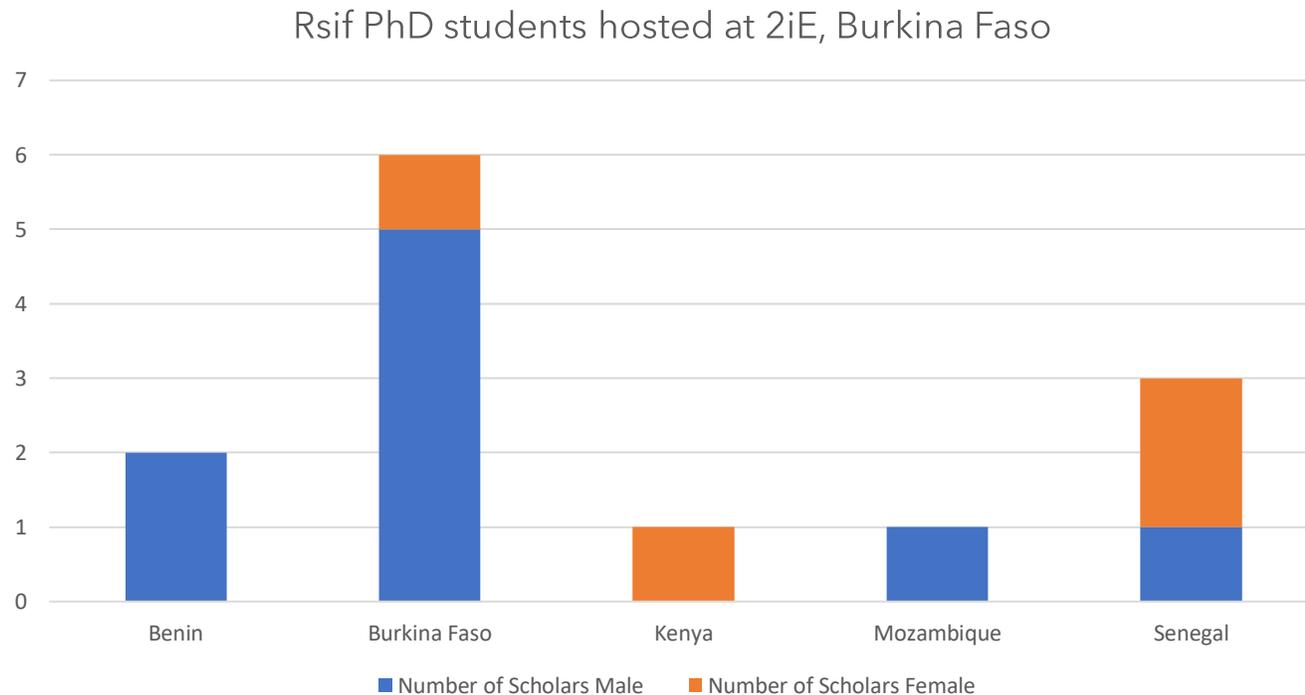
Benefits to Burkinabè Institutions



Research. Innovate. Transform Africa

Benefits to Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE) - an Rsif African Host University

- PhD programme in Sciences and Technologies of Water, Energy and the Environment
- Hosting 13 Rsif Cohort 4 PhD scholars (31% women) from five African countries



2iE Institut International
d'Ingénierie de l'Eau
et de l'Environnement



Thirteen Rsif PhD students hosted at 2iE (1)

No.	Name	Nationality	Gender	Research topic	Status	International Partner Institution
1	Adanyro ATILAGO	Benin	Male	Conception et caractérisation d'un système de valorisation du biogaz par hybridation de groupe électrogène : Etude technico-économique de son adoption par les communautés rurales d'Afrique	In first year of study	To be confirmed
2	Lere Mitterand DEGUENON	Benin	Male	Dimensionnement par optimisation technico-économique d'un système hybride de production d'Énergie PVEolienne hors réseau	"	"
3	Alphonse BOUDA	Burkina Faso	Male	Analyse des impacts du changement climatique sur le confort thermique : température et humidité interne dans un bâtiment type au Burkina Faso	"	"
4	Guétinsom Jean KAFANDO	Burkina Faso	Male	Etude d'un système de production de vapeur d'eau par une chaudière solaire : application à la pasteurisation du lait	"	"
5	Hamado OUEDRAOGO	Burkina Faso	Male	Etude expérimentale, modélisation et optimisation de la conversion et gazéification de la biomasse et des déchets hermochimique par solides connexes	"	"
6	Lamine BAYALA	Burkina Faso	Male	Détection et localisation de défaut sur un Système solaire photovoltaïque connecté au réseau électrique avec simulation temps réel sous un climat tropical (Cas du Burkina Faso)	"	"
7	OUBA Bazam Amonet NEBIE	Burkina Faso	Female	Contribution à la conception de bâtiments administratifs intelligents à faible consommation énergétique dans le contexte du climat tropical	"	"

Continued - Rsif PhD students hosted at 2iE (2)

No.	Name	Nationality	Gender	Research topic	Status	International Partner Institution
8	Souwera Stan Lionnel SOMDA	Burkina Faso	Male	Contribution de l'énergie éolienne dans la production décentralisée d'électricité à partir d'aérogénérateurs conçus à base de matériaux recyclables	In first year of study	To be confirmed
9	Faith Mawia Muema	Kenya	Female	Assessment of the potential of onsite residential greywater reuse for urban maintenance irrigation to sustain green-blue infrastructure in Nairobi city	"	"
10	FRANCISCO RENATO PINTO	Mozambique	Male	Desenvolvimento de uma tecnologia de produção de briquetes a partir da biomassa de origem florestal - serradura da madeira e resíduos de papel.	"	"
11	Aminata SARR	Senegal	Female	Evaluation of the performance of solar irrigation system in the Niayes area through the effect of climate parameters and water quality to develop agriculture in the context of Water-Food-Energy nexus	" 1 publication	"
12	Georges Ambouor DIEDHIOU	Senegal	Male	Optimization of the design of improved stoves for the combustion of biomass charcoal briquettes for clean cooking needs in the West African context	"	"
13	Mame Sokhna Thiane SECK	Senegal	Female	Conception d'un dispositif solaire qui permettra de filtrer et de refroidir l'eau de la mer afin d'obtenir de l'eau potable	"	"

Strengthening research networks for 2iE

- As an Rsif African Host University, 2iE will benefit from potential partnerships with 23 Rsif International Partner Institutions
- 2iE participated at the Rsif 2022 conference at University Mohammed VI Polytechnic in Morocco.
- Burkina Faso graduates and universities are eligible to apply for Rsif Research and Innovation grants.



Photo: Prof. Wennd Kouni Igor OUEDRAOGO, responsable for the Doctoral school, 2iE, Burkina Faso at the Rsif 2022 Conference in Morocco

Multiple benefits to Burkina Faso's research and innovation ecosystem

1. Rsif graduates, with strong research networks, able to “win” additional research awards.
2. Reduced “inbreeding” at Burkinabè universities
3. 2iE benefit from various trainings e.g.
 1. Information literacy training workshops
 2. Arranged visit for 2iE staff to Morocco in 2022
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. 4 journal publications from Burkinabè RSIF students to date in high impact journals
7. Research outputs and knowledge generated in line with national priorities: e.g. solar energy, machine learning, climate change, renewable energy etc.

Emerging impact - set to "snowball"...

First Burkinabè Rsif student to start international research placement

Mr. Sami Florent PALM, Burkina Faso,

Rsif Cohort 2 student

Research area: Solar Energy

1 journal publication to date

Registered at University of Nairobi, Kenya

Placement at University Mohammed VI

Polytechnic, Morocco

- Poster presentation at Rsif Conference 2022 in Morocco
- Preparing to train the next generation of science leaders. Solving critical problems.



Thank You

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