



BENIN

Country Report 2021



Summary of RSIF in Benin

11 Beninese RSIF doctoral scholars enrolled

12 PhD scholars and faculty trained

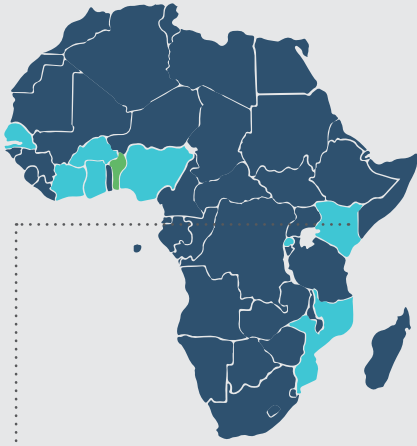
14 training courses held

The **PASET** Regional Scholarship and Innovation Fund



PASET
Partnership for Skills
in Applied Sciences,
Engineering & Technology

An Africa-led initiative to bridge the skills gap in Applied Sciences, Engineering, & Technology



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RSIF IS THE FIRST PAN-AFRICAN SCIENCE FUND OF ITS KIND

Contributing countries: **Benin**, Burkina Faso, Côte d'Ivoire, Ghana, Kenya, Mozambique, Nigeria, Rwanda and Senegal have made or are at the final stages of making contributions to PASET RSIF, in addition to the Government of Korea, the ACP Innovation Fund of the European Union and the World Bank.

RSIF is the first Pan-African Science fund of its kind connecting innovative minds to resources for revolutionary solutions.

It is the flagship product of PASET, an initiative led by African governments aimed at building skills of citizens of sub-Saharan Africa countries in the field of applied sciences, engineering, and technology for national economic growth on the continent. RSIF builds sustainable doctoral training, highly advanced research and innovation ecosystems to develop transformative technologies in Africa for economic growth and development.



At least 40% of the beneficiaries are women and priority is given to young faculty without a PhD.

Benin’s contribution to RSIF

Benin attended the 5th PASET Forum in Kigali, Rwanda in May 2019 and the RSIF-RCU organized a national workshop on RSIF in Cotonou in December 2019. Benin joined PASET in 2021, contributing US\$2 million to RSIF through its ACE Impact project. The Minister of Higher Education and Scientific Research represents Benin in the PASET Governing Council and the Director sits in the PASET Executive Board.

80% of Benin’s contribution directly supports training of Beninese scholars and is currently partially committed to enrolled students in the RSIF PhD scholarship programme. The plan is to recruit around 12 more Beninese students in Cohort 4. The potential of Benin’s innovative expansion due to this investment is multiplied when leveraged by the funds through matching support from various donors, including the Government of Korea, international partner institutions and others.

By being part of RSIF, Benin benefits from joint resource mobilization with other countries and capacity building for PhDs and research and innovation far into the future. PASET aims to mobilise over USD 500 million into the RSIF endowment fund, with an estimated 20% to be allocated to research and innovation projects for the benefit of citizens and institutions of participating countries. Many African countries are interested to be part of this.

RSIF competitively selects and harnesses the brightest minds with:

(i) doctoral scholarships at Host Universities in Africa and ‘sandwich’ training at selected International Partner Organizations, (ii) research awards, and (iii) innovation awards to faculty of graduated RSIF scholars.

PASET members have prioritized five cutting-edge thematic areas that will drive growth on the continent:



ICTs including big data & artificial intelligence



Minerals, mining & materials engineering



Energy including renewables



Food security & agribusiness



Climate change

BENEFITS TO CONTRIBUTING GOVERNMENTS

As a contributor to RSIF, Benin benefits in more ways than through the cost-effective training of its doctoral students.

Countries also benefit from efficient centralized administration of the scholarship and other grants, support for the RSIF scholars to ensure that they complete on time, as well as regular monitoring reports on the progress of their students. The pooling of funds, the highly competitive selection of host universities, international partners and students, and the efficient administration of the fund enhances the value and increases the benefits.

Benin's participation in RSIF benefits the entire Beninese higher education, science and innovation ecosystem. All RSIF scholars will undergo high quality doctoral training in competitively selected SSA universities partnered with international universities, with study abroad for part of the time, at a fraction of the cost of sending students abroad for a full time PhD. On successful completion of the PhD, the students will be eligible for research and innovation grants.



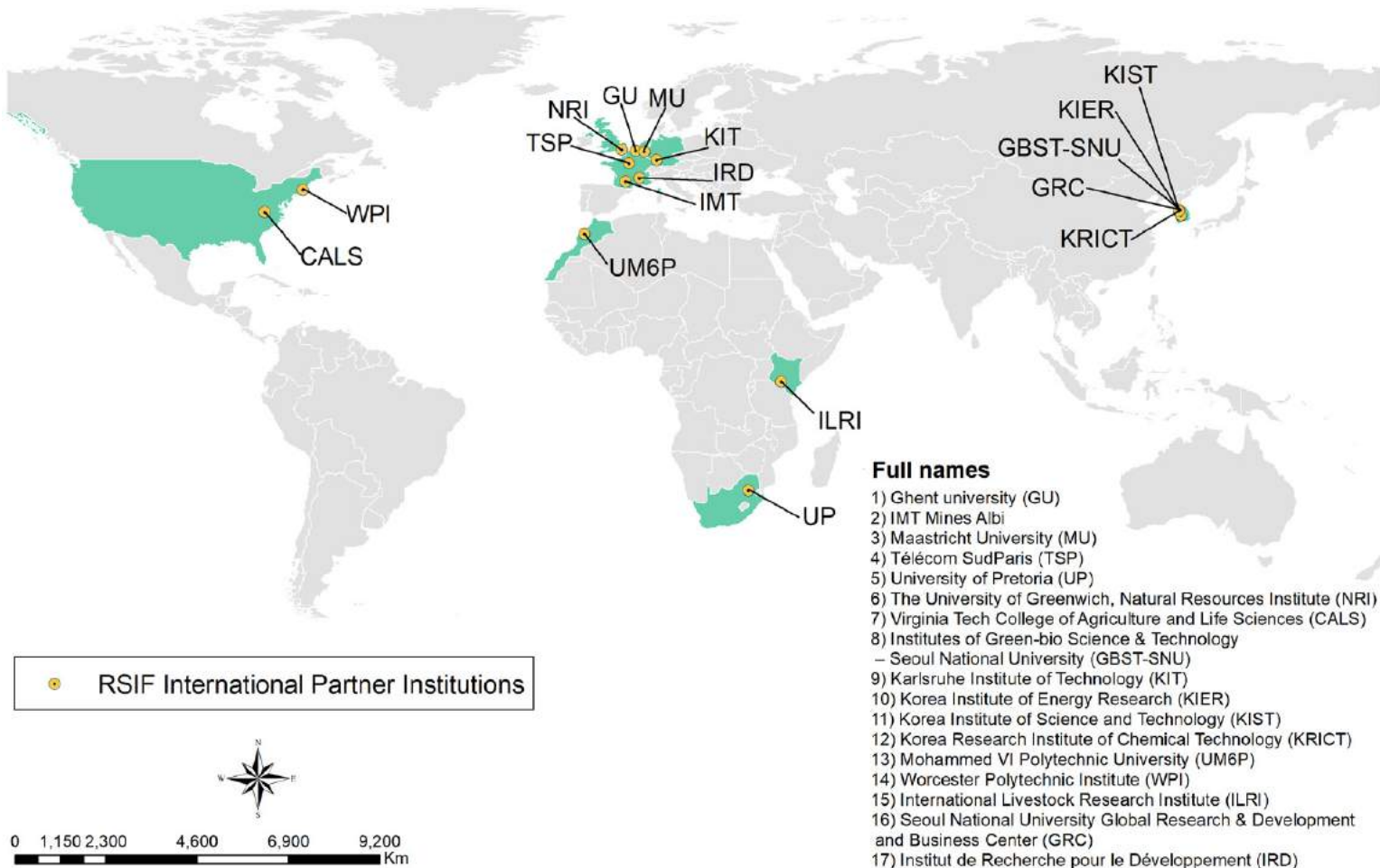
Highly skilled human capital as a driver for the Benin National Development Plan

The rationale for RSIF is that Africa requires world class scientists in priority thematic disciplines that are relevant to national economic growth across sub-Saharan Africa. Some of these areas include orphaned research areas such as mining, minerals and materials science, energy and information and

communication technology among others. This African led program aims to support the training of African innovators and leaders, with focus on women and faculty, to be able to strengthen the capacity of universities to train at the doctoral level and undertake innovative and impactful research for the future needs of the country.



NURTURING HIGH-IMPACT PARTNERSHIPS



Through the Beninese RSIF PhD scholars, Benin benefits from linkages with universities across Africa, as well as with RSIF international partner institutions for the RSIFs ‘sandwich programme’ whereby students spend 6-24 months at an advanced institution conducting collaborative research.

Through PASET RSIF the cost of PhD training is significantly lowered, while also reducing inbreeding in Beninese universities since PhD training will be done in other African universities and international partner institutions.

By working closely with academic institutions, relevant investors and governments, and other stakeholders within sub-Saharan Africa; specialized knowledge will be integrated in the region and transferred to the future generation.

RSIF Training Courses Provided

1. Research Communications and social media
2. Digital Storytelling
3. Reference management & open access
4. Grant writing
5. E-Resources
6. Grievance address mechanisms
7. Sexual harassment
8. Strategies for a successful PhD
9. PhD proposal writing
10. Responsible conduct of research including research ethics
11. Introduction to information literacy
12. Introduction to research methods and statistics, data analysis and management
13. Science presentations
14. Science posters

Training Applied Researchers in Science and Engineering Fields

Scholarships have been awarded to more than 180 RSIF PhD Scholars in total from across sub-Saharan Africa. Eleven of these are Beninese. More RSIF PhD Scholars will be recruited in Cohort 4 in 2021.

The Beninese RSIF graduates are equipped with advancing technologies and strategic research skills for innovation solutions. This provides opportunities for building new university departments that respond directly to national priorities, boosting Benin's capacity to train at the PhD and postdoctoral level. With the ability to undertake high quality research, Benin will be well positioned to lead improved outputs, ranking and prestige.

Breaking Barriers for Women in Science

Women's participation in research remains low in Africa, with women making up only 30% of the science community. RSIF is shifting that perspective.

36% (four of eleven) Beninese RSIF PhD scholars in the three first cohorts are female. RSIF assigns attention to not only women, but also, underrepresented groups, seeking to promote family-friendly policies as well as language and accessibility measures.

CATALYZING RESEARCH

to Generate Transformative Technologies for Innovation and Development

RSIF graduates who obtain a post-doctoral or permanent position in an academic institution or research centre in Sub-Saharan Africa are eligible to apply for RSIF Research and Innovation Awards. These competitive grants enable them to advance their research to generate exceptional research results to solve pressing African challenges.

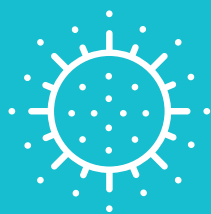


Photo: Study visit to Keio University, Japan, September 2019

RSIF's establishment of international networks provides the Beninese RSIF graduates with a global pool of like-minded innovators. For example, study visits were supported to Japanese universities to learn about university-industry linkages.

RSIF is encouraging partnership with international partners and private firms to leverage some of the brightest minds on the continent. This will contribute to enhanced partnership in higher education, science and innovation ecosystem and collaboration in training, research and innovation.

Beninese institutions are eligible to compete for grants in the area of Agri-based digital innovations under the ACP Innovation fund for Western Africa that *icipe* is managing. UAC, Benin, is a partner in this initiative.



RESILIENCE OF RSIF SCHOLARS: COVID-19 CHALLENGES AND LESSONS LEARNT

In a [published article](#), three female RSIF PhD scholars on international sandwich placements in Korea and USA, discuss the impact of COVID-19 pandemic on their personal lives and research journeys. Their immense resilience to pursue despite the unprecedented challenges is evidence of the determination and caliber of RSIF scholars. While the COVID-19 pandemic is affecting all scientists in general, women scientists, especially those with young families, are uniquely impacted. RSIF not only ensures that women scientists enter and thrive in PhD programmes, but also, guarantees that all its scholars are able to circumvent the challenges related to the pandemic. *icipe*, RSIF's RCU is already providing support to scholars in various ways, including online training support, and psychosocial support on issues like mental health. In addition, RSIF is working with partner universities and students towards timely progression in research and overall course completion.

<https://www.universityworldnews.com/post.php?story=20201208123315401>

SPOTLIGHT ON AFRICA'S FUTURE LEADERS

in Science, Engineering
and Technology



“This research will provide a road map to develop demand-led cowpea varieties with resistance to insect pests, for the benefit of African communities that heavily depend on the legume for their protein intake.”

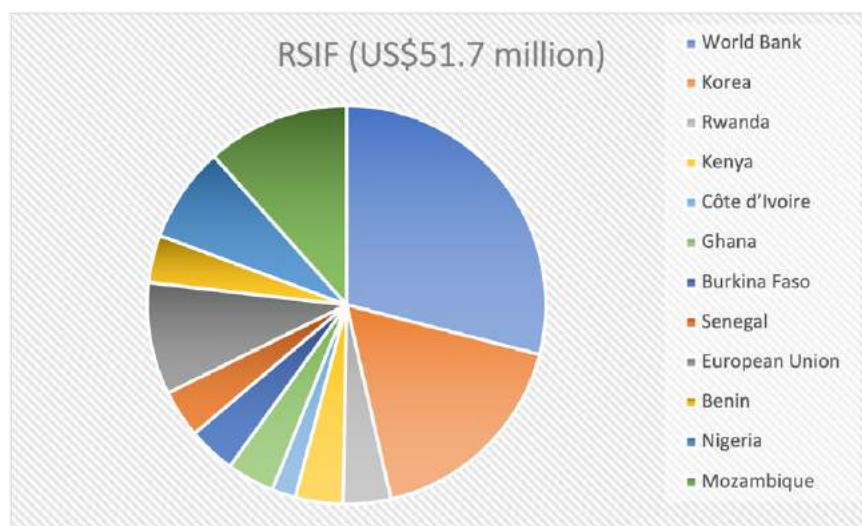
SIF PhD Scholar Fréjus Ariel Kpédétin Sodédji, Université Felix Houphouët-Boigny, Côte d'Ivoire with sandwich research placement at the Korea Institute of Science and Technology (KIST), Korea

Beninese RSIF Scholars and Research Topics

Name	Research Topic	African Host University
Gbetoglo Charles KOMADJA	Engineering rock blasting in surface mining for maximum production and minimization of damages to surrounding environment.	African University of Science and Technology (AUST), Nigeria. Africa Centre of Excellence: Pan-African Materials Institute (PAMI)
Rogia Saïdath Adéline GOMEZ	Biosecurity in poultry farms and its effects on productivity and meat quality.	Sokoine University of Agriculture, Africa Centre of Excellence for Infectious Diseases of Humans & Animals in Southern & Eastern Africa (SACIDS)
Gwladys Gloria Amen AHOUANSE	Assessment of the sanitary quality of bushmeat consumed in Africa in the case of southern Benin and molecular characterization of antibiotic-resistant Salmonella	
Mahugnon Santoze ADIDO	Identification of genetic markers (genes and gene networks) underpinning resistance to gastrointestinal nematodes in cattle	
Fréjus Ariel Kpêdétin SODÉDJI	Genetic diversity and optimization for increased carotenoids biosynthesis in cowpea (<i>Vigna unguiculata</i> L. Walp)	
Goudjo Habib TOESSI	Epidemiology of fungal diseases of citrus fruits in the context of climate change in Benin.	Université Felix-Houphouët Boigny (UFHB), Africa Center of Excellence for Climate Change Biodiversity and Sustainable Agriculture (CCBAD)
Jean-Fabrice Akouemaho Dominique ADANVE	Impact of climate variability on soil interaction - Development of major diseases in rice production areas in Côte d'Ivoire	
Isabelle Erhudice Tachégnon TOKANNOU	Impacts of coronavirus (Covid-19) on climate variability and the role of biodiversity in solving the pandemic in West Africa: case of Benin; Ivory Coast and Burkina Faso	
Gérard KPONHINTO	Collection and transmission of data over the Internet of Things	Université Gaston Berger, Africa Center of Excellence for Mathematics, Informatics and ICT (MITIC)
Abiodoun Clement HOUNKPEVI	Machine Learning and Cryptography in Improving Network security	
Jemima ALLA HOUESSOU	Economic Analysis of Orange Fleshed Sweet Potato (OFSP) Value Chain in Benin	University of Ghana

See repository of RSIF Scholar Research [here](#)

THE FIRST PAN- AFRICAN SCIENCE FUND INTUITIVELY DESIGNED FOR GROWTH



RSIF is designed for sustainability and has two components: (i) the General Fund and (ii) the Permanent or Endowment Fund, with proceeds to capitalize the general fund.

Country contributions have been earmarked to scholarships, and in some cases to support research and innovation projects, aligned with national needs. So far, most countries have focused on doctoral training.

More importantly, RSIF aims to create a permanent vehicle for supporting science, technology and innovation capacity building through an endowment fund that is being established by the governments.

Benin is encouraged to continue its leading role in PASET through continued contribution to RSIF and investment in the RSIF endowment fund for lasting returns.

Benin is a country gaining immense traction that can be used to explore innovative ways of raising more funds for RSIF. By providing tax incentives for private sector companies investing in RSIF, by recommending RSIF to its development partners and by making a fixed annual budgetary allocation to RSIF, Benin will be in alignment with its commitment to PASET's vision.

African governments make good their pledges for advanced training in applied sciences and technology, as continental demand soars.



“We believe that the objectives of RSIF PASET are aligned with our strategies for building scientific, technical and innovation capacities in priority areas such as agriculture, environment, energy, digital, infrastructure and health. In addition, the intra-African partnership and that with the other continents as provided for in this program is essential for socio-economic development in Benin and in Sub-Saharan Africa”.

Professor Eléonore YAYI LADEKAN, Minister of Higher Education and of Scientific Research of the Republic of Benin

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Connect with us

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