

## THE PASET REGIONAL SCHOLARSHIP AND INNOVATION FUND (RSIF)

RSIF offers a unique and historic opportunity for African countries to train new doctoral students in high quality Ph.D. programs in applied sciences, engineering and technology, at an affordable cost in competitively selected African universities partnered with international universities. Beyond doctoral training, RSIF systematically nurtures research capacity by fostering partnerships between universities and domestic and international firms to find solutions to local challenges.

## INVEST IN AFRICA'S FUTURE SCIENTIFIC LEADERS



**Sustainability:** The first pan-African science endowment fund of its kind, the PASET RSIF has the objective of establishing a permanent fund that can sustainably support applied scientific and engineering research in SSA universities.



**Flexibility:** RSIF's design encourages scalable, demand-driven expansion, targeting of specific domains and beneficiaries and return on investment. The fund pools resources from African governments, development partners and the private sector to achieve results at scale with an efficient implementation mechanism.



**Transparency:** RSIF ensures high standards of selection of universities, students and grant beneficiaries and exemplary fiduciary management. It is supported by an inclusive and nimble governance structure and accountability to all funders and stakeholders.

**African governments, donor partners and the private sector can contribute to RSIF**

## RSIF IN OPERATION FINANCIAL CONTRIBUTION GROWTH:



RSIF is the flagship initiative of the Partnership for skills in Applied Sciences, Engineering and Technology (PASET) which involves African governments, the World Bank, and several partner countries (<http://www.worldbank.org/en/programs/paset>)

**Building on global best practices to ensure continuity and sustainability in research training and capacity building, RSIF has three windows:**



### Window 1

**Ph.D. Grants:** Scholarships for Ph.D. students to be trained in competitively selected SSA universities and renowned international partner universities, through "sandwich" training that includes study at the international university.



### Window 2

**Research Grants:** Grants to pursue applied research to resolve local development challenges. Eligibility for Ph.D. graduates of RSIF who return to academia and university faculty in RSIF host universities.



### Window 3

**Innovation Grants:** Grants to support innovation projects and commercialization of research in the priority thematic areas. Eligibility for faculty of RSIF host universities to submit joint proposals with private sector.

## KEY FEATURES OF RSIF

RSIF prioritizes the faculty of universities who lack Ph.D. training and the new pipeline of young scientists and engineers who will enter academia or industry, or set up their own enterprises

 **Selected priority thematic areas:** RSIF addresses the most important current issues and challenges facing the continent including: Food Security and Agribusiness; Climate Change; Digital Technologies, including data science and artificial intelligence; Energy; and Minerals, Mining and Materials Engineering.<sup>1</sup>

 **Selection of host universities and grant beneficiaries:** SSA universities are competitively selected to become RSIF host universities for Ph.D. training by a panel of international experts using transparent criteria. Ph.D. students are drawn from across sub-Saharan Africa, through a two-stage selection, first by RSIF host universities and then by international panels. Research grants and innovation grants will be awarded competitively to RSIF scholars and faculty in RSIF host universities involved in the Ph.D. training.

 **International partner university network:** Each SSA RSIF host university is linked with carefully selected international partner universities in the respective domain to improve the quality of the Ph.D. training and provide opportunities for “sandwich training” in the international partner university (for 12-24 months).

AT LEAST

40%

of its beneficiaries are expected to be women



 **Technical assistance to RSIF host universities:** Assistance for design of policies and procedures for intellectual property management; developing courses on entrepreneurship and business model development; and fostering business incubation capability.

 **Wide range of current contributors:** Six African countries, the Government of Korea and the World Bank. Several other governments/donor agencies have expressed interest in joining PASET.

 **Professional RSIF implementing unit - icipe<sup>2</sup>:** A competitively selected African scientific organization administers and grows the fund, organizes the selection of host universities and international partner universities.

 **Transparency in governance:** RSIF is the flagship initiative of the PASET. All contributors to RSIF are included in the PASET governing bodies.

<sup>1</sup> As currently approved by the PASET Governing Council. Additional thematic areas can be added depending on the needs and interests of the contributors.

<sup>2</sup> International Centre for Insect Physiology and Ecology, Nairobi. . icipe is a leading scientific organization with a nearly 50-year history that has contributed to science and innovation in sub-Saharan Africa. It has an extensive network of partners in Africa and across the world including 43 partner universities and 300 other partners including governments.

## A REGIONAL APPROACH: ADDRESSING CRITICAL NATIONAL PROBLEMS IN DEVELOPING RESEARCH CAPACITY

In many Sub-Saharan African universities, less than 25 percent of the teaching staff have Ph.D.s; fewer than 20 percent of science and technology students, on average, are women, with even lower proportions at the postgraduate level.

Many African countries send students for Ph.D. training to North America, Europe or Asia using their own funds or international scholarships. While necessary and useful, these programs are more expensive than training in African universities and often students do not return after completing their studies. Furthermore, training individual Ph.D. students alone is not sufficient; they need to be supported to continue high quality research or to start their own business ventures. And finally, training students abroad denies African universities the opportunity to develop the capacity to offer high quality Ph.D. programs themselves and build sustained research capacity.

Nascent national research and innovation funds in many countries often lack the financial and critical managerial resources to administer and monitor research and innovation grants and impact the university system.

RSIF's regional structure and approach addresses these issues and builds capacity at the regional, national and university levels.

## THE VALUE PROPOSITION FOR AFRICAN COUNTRIES

An African country which contributes to RSIF benefits in many ways, apart from the cost-effective training of its doctoral students. The pooling of funds, the highly competitive selection of host universities, international partners and students, and the efficient administration of the fund increases the benefits of joining.

**80%** of a country's contribution directly benefits its students.

The remaining 20 percent finances SSA students from other countries. The students are eligible for RSIF research and innovation grants in the future.

Universities in contributing countries can compete to become RSIF host universities as well. If successful, these universities will benefit from partnerships with international universities to enhance their capacity to become regional research centers. Faculty of these universities become eligible for research and innovation grants.

Countries benefit from efficient centralized administration of the scholarship and other grants, support for RSIF scholars to ensure that they complete on time, as well as regular monitoring reports on the progress of their students.

## RSIF VALUE PROPOSITION



**High Quality Ph.D. training for young faculty and other students, with a focus on women**

## RSIF

Competitive selection of the best SSA universities using international expert panels; quality of Ph.D. training raised through partnership with carefully selected and matched international universities and 'sandwich' training of students abroad; capacity building for RSIF host universities; competitive selection of the best students, with priority given to eligible women to meet 40% goal; strong focus on student support at all stages, including when they are studying abroad.



**Lower cost of Ph.D. training**

**APPROX \$100K**  
for four years<sup>3</sup>



**Building new departments in domestic universities**

RSIF scholars can help to develop departments in universities in cutting edge disciplines, drawing upon the expertise and network of RSIF host university and international partner.



**Building the research continuum – from Ph.D. to post-doctoral research and innovation**

RSIF scholars and faculty are eligible for research and innovation grants. This helps to strengthen their research skills by working on African challenges with international experts and local firms.



**Spillover effects on National Research and Innovation Fund**

RSIF provides opportunities for countries to learn about setting up or improving the functioning of national research and innovation funds.



**Participate in RSIF governance**

A contributing country is a member of the PASET Governing Council (represented by the Minister) and Executive Board. The country receives regular reports and also helps to shape the direction of RSIF.

## OTHER APPROACHES

Training mostly in Universities outside Africa or training in domestic universities where doctoral training may not be of high quality. Without regular follow up and support, students often face daunting problems to complete their research on time. Further, there is a risk of brain drain.

**OVER \$200K**  
for a full Ph.D. in the US or Britain<sup>4</sup>

Relying on established foreign universities and academic institutions undercuts the building of long-term local capacity of African university departments.

Students who return from foreign studies are unable to develop their research skills for lack of continuing grants; the lack of a critical mass of researchers who continue to engage in research in specific domains affects the quality of African universities.

Traditional Ph.D. scholarship programs are not linked to National Research and Innovation Funds

Too often African scholars and students remain out of the loop in international decision making and opportunities, including the governance of continent-wide initiatives.

<sup>3</sup> Based on current cost estimates, including sandwich training abroad. Negligible administration costs for the contributing country.

<sup>4</sup> In other countries, bilateral scholarship programs can lower costs but have their own focus areas and conditions.

## HOW AFRICAN COUNTRIES CAN STRATEGICALLY USE RSIF TO BUILD CAPACITY IN SPECIFIC AREAS

When an African government decides to build capacity in specific areas (such as Big Data, Internet of Things), it can allocate targeted funding to RSIF for high quality Ph.D. training in these areas in order to help build the relevant university departments. The Ph.D. graduates will gain access to a network of SSA and international universities that can continue to support them, as well as to the firms that require applied research work.

RSIF complements other regional efforts such as the World Bank's Centres of Excellence, programs of the AfDB, and the African Union, as well as many bilateral programs.

### RETURN ON INVESTMENT FOR DEVELOPMENT PARTNERS AND THE PRIVATE SECTOR

Development partners can help to build a sustainable regional fund to complement their bilateral efforts. They can link their universities to selected RSIF host universities for the "sandwich" Ph.D. training and collaborative research programs.

The private sector will see its return on investment primarily through the results of funded research directly linked to the core areas of their business. RSIF enables the private sector to use a regional program, access the best African universities and students from across the region, without having to create their own architecture for managing the program.

## HOW THE PRIVATE SECTOR CAN BENEFIT FROM RSIF

Private sector firms can delineate fields of study in RSIF. Topics of research can focus on the specific operational and other problems facing the firm. Students could spend part of their time working in-house in the company on practical industry related problems. The research results would be used not only towards the Ph.D. degree for the student, but will also help drive new business directions. On graduation, some of these students may be employment ready.

In addition, the private sector firm benefits from the visibility afforded by RSIF contributions and can expand into new markets. It can establish relationships with universities across the continent.

## CONTACT AND ENGAGE WITH US

Interested African governments, donors and private sector partners can find out more about RSIF and how to make contributions.



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