



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 19-Oct-2017 | Report No: PIDISDSC23344



BASIC INFORMATION

A. Basic Project Data

Country Africa	Project ID P165581	Parent Project ID (if any)	Project Name Africa Regional Scholarship and Innovation Fund for Applied Sciences, Engineering and Technology (P165581)
Region AFRICA	Estimated Appraisal Date Dec 12, 2017	Estimated Board Date Feb 08, 2018	Practice Area (Lead) Education
Financing Instrument Investment Project Financing	Borrower(s) Association of African Universities (TBC during Project Preparation)	Implementing Agency Association of African Universities (TBC during Project Preparation)	

Proposed Development Objective(s)

To support the enhancement region-wide of the quality and sustainability of doctoral training, research and innovation in applied sciences, engineering and technology.

Financing (in USD Million)

SUMMARY

Total Project Cost	30.00
Total Financing	30.00
Financing Gap	0.00

DETAILS

Total World Bank Group Financing	30.00
World Bank Lending	30.00

Environmental Assessment Category C-Not Required	Concept Review Decision Track II-The review did authorize the preparation to continue
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Other Decision (as needed)

B. Introduction and Context

Regional Context

- 1. Recent economic performance in sub-Saharan Africa (SSA) shows that countries that have developed a more diversified economic structure have shown greater resilience in GDP growth than those that depend largely on export of commodities.** About a quarter of SSA countries belong to the former group and they are categorized by more diversified export structures and a better business environment.¹ With the end of the commodity ‘super-cycle’, structural transformation and across-the-board productivity improvements in the economy become imperative, if growth is to be inclusive and poverty-reducing.
- 2. Improvements in agricultural productivity as well as in productivity within other sectors can drive further growth within countries.** The non-agricultural sectors, which are still relatively small in many SSA countries, are expected to grow and contribute to export diversification and structural transformation. There is a wide dispersion of productivity levels in formal sector firms in SSA countries, as in other developing countries, with greater productivity being associated with firms engaging in exports and introducing innovations in products or processes and their use of modern management practices and new technology.
- 3. Greater regional integration is expected to become another driver of growth.** A large number of SSA countries are land-locked and have small domestic markets, which pose barriers to developing economies of scale. Integrating into regional and global value chains allow domestic firms to improve productivity, but this requires supporting investments in regional infrastructure and regulatory frameworks. The Bank’s new draft Africa Regional Integration Strategy (2017) proposes four strategic priorities: (i) Generate Economic Dynamism Along Regional Economic Corridors; (ii) Develop Functioning Regional Markets in Identified Priority Sectors; (iii) Scale-up Access to Quality Public Services and Entrepreneurship through Complementary Regional Solutions and (iv) Promote Collective Action to Address Risks of Regional Economic Contagion, Fragility, Epidemic and Climate ‘Hot Spots’. Under the third priority area, the strategy notes that areas that have “multiplier regional benefits like R&D support, technology adoption, building institutional capacity, or promoting entrepreneurship, complimentary regional solutions would be explored”.²
- 4. Rapid advances in technology constitute both an opportunity and a challenge for African societies.** On the one hand, these advancements sometimes called the “Fourth Industrial Revolution,” which is characterized by an amalgamation of rapidly evolving technologies such as 3D printer and wearable technologies that cut across the physical, digital and biological spaces, could dramatically improve productivity in many sectors, such as food, energy, transport and other infrastructure, health and so on. They offer the potential to respond to Africa’s specific challenges provided research and development is geared towards facilitating the application of technological solutions on a large scale and is supported by financing. On the other hand, the inability to adopt new technologies

¹World Bank Group. 2016. *Africa's Pulse, No. 14, October 2016*. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/25097> License: CC BY 3.0 IGO.”

² World Bank (2017 forthcoming). Supporting Africa’s Transformation: Regional Integration Strategy 2017-2023



and remain competitive can lead to job losses even in the currently small formal sector and relegate millions of new and existing job seekers to low productivity jobs, widening income disparities.

5. **SSA's stock of skilled human capital is very limited and of poor quality, and the absence of a critical mass of applied scientists, engineers and technologists can constrain the expansion of industries, the emergence of new sectors and the adoption of innovations.** While an improved business environment and other supportive measures are required, the growth of firms and diversification of manufacturing and services will depend critically on access to skilled labor, which can influence productivity growth through innovation and integration into regional and global markets. Recent analysis of the use of professional services (such as engineering, architectural, legal and accounting) in several countries, using a survey of firms in COMESA countries (which include 17 SSA countries) and Enterprise Skills Surveys for Tanzania and Zambia, show that this unambiguously increases firm-level productivity.^{3 4} This gap of highly skilled professionals is often filled by expatriate workers. Moreover, with the onset of the Fourth Industrial Revolution, the demand for skills is changing and the jobs on the continent will require digital literacy and advanced knowledge in applied sciences, engineering and technology (ASET) areas.
6. **SSA has just 1.1 percent of the scientific researchers in the world, with less than 92 scientific researchers per million inhabitants compared to an average of 1083 for the world.**⁵ Not only does this impact industry and hinder the growth of firms across sectors, but it also contributes to a shortage of qualified faculty in African universities, especially in ASET fields, which in turn affects the quality of graduates. Expenditure on research and development (R&D) across the region is low (0.41 percent of GDP) and only 1.4 percent of global scientific publications originate in SSA. Further, SSA – barring South Africa – is not seen by multinationals as a destination for undertaking research. This is reflected in the choice of Africa as a destination for a mere 0.8 percent of R&D-related projects financed through foreign direct investment (FDI) compared to 28.7 percent for China and India. The growth of such “research clusters” is known to increase innovation through the diffusion of technology in new firms. As of 2013, only 233 patents (0.1 percent of global share) were submitted by SSA researchers compared to 848 by India and 1,757 by China.
7. **Women continue to be under-represented in science and technological fields in SSA though there have been some gains in recent years.** There is a gender imbalance at all levels of education in the region, including tertiary education, with participation rates of women in tertiary education only at 31 percent in Ethiopia, 30 percent in Guinea, and 28 percent in Niger.⁶ Women form less than 30 percent of the tertiary education graduates in scientific fields in Ghana, Uganda and Swaziland, and between 35-40 percent in Angola, Madagascar and Rwanda. While women dominate health and life sciences related fields, less than 20 percent of women graduates are in engineering. In addition, among the scientific researchers on the continent, only 30 percent are women. Women in SSA and across the globe have less access to research funding compared to their male counterparts.
8. **Innovative high growth entrepreneurs for most SSA countries remain below the expected level from countries with similar R&D incentives.** This is mainly due to a lack of R&D facilities, quality entrepreneurship education, and insufficient entrepreneurship ecosystem in the region, as well as a lack of researchers and investment in R&D, innovation ecosystem including R&D facilities, entrepreneurship training, and finance. High growth entrepreneurs

³ Tan, Hong (2017), “Migration and Labor Mobility in Sub-Saharan Africa: Recent Trends in EAC, ECOWAS and SADC”, Note prepared for Global Education Practice, East and Southern Africa Region, March 2017, World Bank.

⁴ Tan, Hong, Sajitha Bashir and Nobuyuki Tanaka (2016), “Skills Use, Skill Deficits, and Firm Performance in Formal Sector Enterprises: Evidence from the Tanzania Enterprise Skills Survey 2015”, Policy Research Working Paper 7672, May, World Bank.

⁵ UNESCO (2015), “UNESCO Science Report: Towards 2030.”

⁶ UNESCO (2015), “UNESCO Science Report: Towards 2030.”



are a source of economic growth and job creation. Experience from other countries shows that in order for high growth entrepreneurs to succeed, technology adaptation and diffusion is critical, and this role often has to be played by specialized centers in universities.

9. **Given the small base of research capacity, a regional approach to build greater scientific and technical capacity will complement country specific initiatives.** Africa's Science and Technology Consolidated Plan of Action (CPA, 2005–2014) communicated the continent's common objectives and actions to improve capacity building, knowledge production and technology innovation for its socio-economic transformation. It also called for greater mobility of scientists across the continent. Its successor, the Science, Technology and Innovation Strategy for Africa (STISA-2024) aims to build on the outcomes of the CPA and accelerate Africa's STI development. Regional economic communities such as the Economic Community of West African States (ECOWAS) and the Southern African Development Community (SADC) are working towards greater regional scientific integration and have adopted strategies for science technology and innovation (STI) in the recent past. Similarly, the East African Community (EAC) aims to develop a Common Higher Education Area to establish internationally competitive and harmonized higher education systems in the region.
10. **While some of the larger and richer countries have established national research funds or councils (such as South Africa, Kenya, Senegal and Ghana), many of the smaller countries do not have the organizational and financial capacity to do so.** Even those that have research funds are not fully functional. They lack the budgets and capacity to establish a conducive research environment in their countries, run grant competitions to encourage research in fields crucial for Africa's development, provide support to improve facilities, and link universities with industry. They are unable to fund applied research on a scale that would transform the research landscape on the continent and advance knowledge creation and innovation to drive economic growth in SSA.

Sectoral and Institutional Context

11. **The number of graduates in ASET fields and the quality of higher education in these fields is impacted by the shortage of qualified faculty.** African universities have about 50 percent more students per professor than the global average.⁷ The serious lack of qualified faculty is driven by three interrelated factors: (i) the absence of a sufficient number of good quality postgraduate programs to train faculty locally; (ii) inability to retain highly qualified faculty due to the poor quality of the academic environment including poor facilities and lack of research funding; and (iii) brain drain, with over 10 percent of Africa's highly educated professionals living and working abroad.⁸ In recent years, the problem has been further exacerbated by low numbers of new entrants to the academic profession due to lack of scholarships to support their studies and research. There is a need to quickly build postgraduate faculty capacity in SSA countries, particularly in ASET disciplines. A critical element in developing this capacity and improving the quality of post-graduate programs is ensuring the financing of postgraduate programs, including support for students and research, improvement of facilities and faculty pay, and incorporating quality assurance mechanisms of post-graduate programs.
12. **Doctoral training and the development of researchers who can tackle practical research questions are important aspects of developing technical-scientific capability.** Not only are the PhD programs offered in SSA relatively few, but they have low levels of output and little relationship to the needs for highly specialized professionals. Further, most SSA universities do not provide post-doctoral opportunities for the new PhD graduates with continued support and advice, and ideally working on challenging tasks faced by industry and society. PhD researchers are needed to

⁷ Africa-America Institute (2015), "State of Education in Africa."

⁸ OECD (2013), "World Migration in Figures".



generate new knowledge, adapt technologies for evolving needs, and innovate to identify solutions to social and industrial challenges. In addition, there is a need for inter-disciplinary research to identify holistic and sustainable solutions to these challenges.

13. **No SSA university, barring those from South Africa, ranks in the top 500 universities of the world.** In fact, only four SSA universities rank within the top 1000 universities in the world as per Shanghai Rankings and QS World University Rankings. There is a dearth of high quality institutions in the region. University curricula are outdated and do not cater to the demands of industry and the job market. Academic staff use mostly old teaching methods that do not emphasize problem-solving and often lack industry experience. It is critical to develop top quality SSA institutions with leading programs in ASET fields to train Africa's best talent within the region and build a strong scientific and technical African labor force.
14. **Recognizing these challenges, a few regional initiatives have been launched, including several scholarship programs for graduate studies.** While the programs vary in scope and recipients, they can be broadly categorized as supporting degrees in three areas: agriculture, population and public health, and general sciences and engineering. Programs such as Building an Alliance for a Green Revolution (AGRA), African Woman in Agriculture Research and Development (AWARD) and Vavilov-Frankel Awards support direct efforts towards agricultural development in Africa. Initiatives like The Consortium for African Research and Innovation (CARI) and Consortium for Advanced Research Training in Africa (CARTA) predominantly focus on the health sector while Africa Development Bank's East Africa Centers of Excellence focus on biomedical sciences. Lastly, the MasterCard Foundation, the German Academic Exchange Service (DAAD), the Regional Initiative in Science and Education (RISE), and the Carnegie Foundation Africa Diaspora program offer scholarships for general science and engineering degrees. These programs support scholarships for degrees at the Bachelors, Masters and PhD levels. However, most similar initiatives in the SSA region mostly have involved training in foreign institutions and are largely driven by development partners, and therefore have not directly addressed the weak capacity on the continent to train researchers and conduct research as well as the lack of sustainability.
15. **The World Bank financed Africa Centers of Excellence (ACE) projects also target the higher education challenge and skills demand on the continent at the sub-regional level.** The Africa Higher Education Centers of Excellence for West and Central Africa (ACE I) and East and Southern Africa (ACE II) are competitively selected centers from African higher education institutions, with a focus on research and training of postgraduates in sectors such as science, technology, agriculture, health and education. The projects provide scholarships to Masters and PhD students to pursue graduate training in the specific sectors within ACEs in their sub-region, which are identified centers within universities. Currently, the third phase of the Africa Centers of Excellence project is under preparation, which focuses on scaling up and establishing ACEs with improved quality, greater development impact and stronger regional collaborations.
16. **The Partnership for skills in Applied Sciences, Engineering and Technology (PASET) was launched in 2013 by African governments with facilitation from the World Bank.** As a unique program led by highly-committed African governments with strong African ownership, and focused on priority sectors for the region, PASET offers a sustainable approach to address the region's needs. It brings together diverse partners including governments, private sector, traditional and new development partners to build competencies from the technician level to the post-graduate level focusing on the skills requirements of priority sectors of SSA countries and the region as a whole. Led by African governments, PASET is governed by a Board of Directors currently comprised of Ministers of Education or Higher Education of 5 SSA governments – Senegal, Rwanda, Ethiopia, Kenya and Cote d'Ivoire – and representatives of the Korea Development Institute and World Bank. The Board makes key strategic decisions of



PASET that are executed by the Executive Committee with advice and expert guidance provided by a Consultative Advisory Group comprised of African scientists, academics, and representative from the private sector and international partner countries. The World Bank hosts the PASET Secretariat and provides technical assistance and facilitates PASET activities. Collectively, the PASET governance bodies shape PASET's initiatives in response to the needs of the SSA countries and region.

17. **The Regional Scholarship and Innovation Fund (RSIF) is the flagship initiative of PASET.** RSIF aims to support doctoral training and post-doctoral research and innovation in about 10 priority sectors for growth and development across all SSA. This three-pronged approach follows global best practices for such programs, incorporating “sandwich” training options that include international study at leading partner universities and providing comprehensive support to students at all stages including post-graduate research support and grants to researchers at universities for undertaking work that is relevant to industry or to set up enterprises. The program also aims to build research excellence in ASET fields in about 5-10 SSA universities outside of South Africa by developing the capacity for PhD training and undertaking applied research and innovation in partnership with a network of well-renowned international partner universities. In the first phase, the RSIF universities are competitively selected from among the ACEs, taking advantage of synergies in the two programs.
18. **RSIF goes beyond the center level and supports universities to establish a high quality training and research environment and develop their institutional capacity for the benefit of the whole region.** RSIF's pan-African, focused and sustainable approach contributes to a solution to the challenge of building high quality research expertise in selected host universities in SSA countries that would benefit the whole region through its graduates and research and innovation results. Furthermore, because of its regional scope, RSIF targets funding from governments, private sector, cooperation agencies and international donors. Currently, five countries have joined PASET – Senegal, Rwanda, Ethiopia, Kenya and Cote d'Ivoire – with commitments to each contribute US\$ 2 million to the RSIF initiative. Kenya and Rwanda have made their contributions and other countries are making active efforts to follow suit. Five additional SSA countries have expressed interest in joining the initiative. In addition, several private sector organizations have demonstrated interest in supporting RSIF.
19. **Since 2015, several steps have been taken to operationalize the RSIF, particularly its PhD training window.** The Institute of International Education (IIE) was recruited as a third-party technical assistance organization to help design and operationalize the scholarship program.⁹ In 2016, the PASET governance bodies selected the Association of African Universities (AAU), a pan-African agency, to host the RSIF Implementation Unit (RIU) and administer a well-managed and results-oriented Fund. To raise the quality of the PhD program, in late 2016, PASET signed Memorandums of Understanding (MoUs) with the Korea Institute of Science and Technology (KIST) in Korea, and Maastricht University in Netherlands to collaborate under the RSIF. In early 2017, four Africa Centers of Excellence were formally selected competitively as the RSIF host institutions in three thematic areas of food security, minerals, mining and materials engineering, and information communications and technology (ICT). In addition, technical assistance was hired to develop a 5-year financial model for the entire program and a fundraising strategy with an initial target to raise \$100 million. A preliminary operational manual for the scholarship program was developed detailing the objectives, procedures, guidelines and governing principles of the RSIF scholarship window for all the stakeholders of the program. Finally, in mid-2017, PASET launched a call for its first cohort of RSIF students. Over 900 applications were received and the student selection process is on-going with the students expected to enroll in the host universities in January 2018.

⁹ The Institute of International Education currently manages the Fulbright Program in the United States.



20. **There has been interest from the private sector and research agencies to provide financial and in-kind support to the RSIF.** Philips Research Africa has committed to supporting scholarships while IBM is keen on hosting RSIF PhD scholars at their research labs in Africa as part of a structured program. The German Academic Exchange Service (DAAD) and German Research Foundation (DFG) expressed interest in issuing joint Calls for Scholarships with PASET while the French Research Institute for Development (IRD) proposed hosting RSIF scholars at their centers and labs in addition to having joint applications for research funding by IRD and RSIF researchers. MoUs have been prepared and discussions are on-going between PASET and these organizations. Active outreach efforts continue with other private sector companies and organizations.
21. **A benchmarking initiative has also been launched under PASET to address a key constraint of paucity of data in the region.** The SSA region faces a serious data gap particularly at the tertiary education level. There is very limited reliable data available on basic indicators such as number of graduates by degree level, proportion of doctoral students in science and technology fields, percentage of graduates employed within 6 months of graduating and so on that are essential to understand the performance of the system and help address weaknesses. To combat this data gap, PASET also launched a benchmarking initiative in 2015, in partnership with Shanghai Jiao Tong University, to help build capacity at the institutional and system level to collect and manage data effectively and equip universities and national tertiary education agencies with the tools to assess and improve their performance. Till date, benchmarking instruments, student surveys and university surveys have been developed and one round of the benchmarking exercise has been completed with data from 31 universities. A second round of data collection is planned for 2018 and will include an updated methodology, revised instruments, and graduate tracer studies.
22. **The proposed project would build on the progress of the pan-African RSIF and use it as an instrument for leveraging funding on a regional scale to scale up efforts to create a scientific and technologically skilled workforce in ASET fields in SSA.** A regional approach would be more effective in bringing together organizational capital to attract funding from diverse sources including governments, private sector, foundations and development partners. It would also be conducive to setting up a fund that will be managed with high levels of transparency and fiduciary responsibility. In addition, a pan-African fund would complement the efforts of national research funds by financing research in priority areas to build research capacity, creating a fertile environment for innovations, and forging partnerships with industry and international partner universities.

Relationship to CPF

23. **The proposed project, Africa Regional Scholarship and Innovation Fund for Applied Sciences, Engineering and Technology, would complement and go beyond existing regional initiatives on the continent focused on developing science and technology skills in higher education.** The project would build on the World Bank-facilitated RSIF initiative of PASET which has made significant progress since 2015. The proposed project also has strong synergies with the World Bank-financed Africa Centers of Excellence (ACE) projects for West and Central Africa and East and Southern Africa which seek to build capacity in higher education and scientific research. Currently, the RSIF host institutions are selected from the ACEs and hence quality enhancement support and partnerships (both academic and industry) forged under the RSIF also benefit the ACEs.
24. **The proposed project is also in line with the World Bank's Africa Strategy, new draft Africa Regional Integration Strategy (2017), and the twin goals of poverty reduction and shared prosperity.** The project's focus on building the capacity of SSA's human capital for target priority sectors is aligned with Pillar 1 of the Bank's Africa Strategy which aims to strengthen competitiveness and employment through the production of highly skilled human resources for priority growth sectors. The project also feeds into the third priority area of the new draft Africa Regional



Integration Strategy that prioritizes exploration of support for regionally beneficial activities like R&D, technology adoption, institutional capacity development and entrepreneurship support. In addition, the outcomes of the proposed project would give rise to a strong human capital base in the region, important research and transformational innovations that would support the socio-economic growth in SSA and serve to address the challenges of poverty and inequity.

C. Proposed Development Objective(s)

To support the enhancement region-wide of the quality and sustainability of doctoral training, research and innovation in applied sciences, engineering and technology.

Key Results (From PCN)

The Regional Scholarship and Innovation Fund is expected to benefit:

- Academic faculty of African universities who lack PhD training
- Students and researchers who receive PhD scholarships and internships
- Young African scientists and engineers entering academia, industry or business
- African institutions that train the PhD students and become internationally recognized in ASET fields
- Faculty and students of the African institutions hosting or hiring RSIF scholars who benefit from the improved quality and capacity of the institutions
- Industry that can hire better graduates and increase innovation capacity

Some proposed results indicators are:

- Number of PhD programs that acquire international accreditation.
- Improvement in key indicators in the benchmarking of RSIF host universities (indicators to be defined during preparation).
- Number of students (% female) receiving scholarships for PhD training/Number of RSIF scholars (% female) who obtain their PhDs.
- Number of publications submitted to peer reviewed, indexed scientific international journals by host institutions.
- Number of research or innovation projects conducted in collaboration with industry.
- New enterprises launched with the support of RSIF grants.
- Number of RSIF scholars that successfully participate in a study/research stay (minimum 3 months) with a partner institution abroad.

D. Concept Description

The Project will build on the established framework of the PASET Regional Scholarship and Innovation Fund (RSIF) to finance scholarships and research and innovation grants in applied sciences, engineering and technology in Africa, which will contribute to raising to international levels the quality of doctoral training, research and innovation in selected African universities in ASET areas. It is envisioned that this Fund will grow to finance activities beyond the duration of the Project and help create the needed nurturing environment for research and development in SSA. These objectives will be achieved through activities categorized under three primary components: (i) Support to the implementation of the Scholarship and Innovation Fund; (ii) Design and operationalization of a Permanent Fund; and (iii) System strengthening.

Scholarship, research and innovation funds are an excellent way to promote high level human capital development and



quality enhancement of research and innovation. General funds that restrict the use of their resources to finance activities agreed upon by the contributing parties improve the guarantee of the achievement of the proposed objectives. Such is the case of the Nigeria N3bn National Research Fund established in March 2016 and the Newton-UFATIFI research fund established by a partnership between UK and Kenya. Furthermore, permanent funds secure sustainability and leverage government and partner contributions by establishing a trust whose earnings are used to finance the activities agreed upon by the sponsors while maintaining the capital of the fund. Examples of permanent scholarship, research and innovation funds are the US-India Science and Technology Endowment established by USA and India governments for the promotion of joint activities that lead to innovation and entrepreneurship through the application of science and technology; and the Cambridge-Africa ALBORADA Research Fund, among many others.

To increase sustainability and leverage funds from governments and donors, it is proposed that the RSIF will be composed by two funds, a General Fund which will be used from the start of the Project to finance the three components, and a Permanent Fund whose returns will be used to finance the scholarship, research and innovation grants under Component 1 and the strengthening of the quality assurance of postgraduate programs and research programs in universities under Component 3.

During preparation, the possibility of structuring the Project as an umbrella operation with two parts will be explored. The two parts are: (a) a regional grant with a regional organization (to be confirmed whether it will be the African Association of Universities or other organization that satisfies the requirements to receive WB Regional Grants) as the recipient, and (b) loans to Participating SSA Countries who wish to use IDA credit for contributing to RSIF.

The Project will be implemented through three components that will ensure: (i) long-term sustainability as an independent pan-African fund; (ii) a wide range of beneficiaries – from individuals to universities; (iii) a holistic approach of close monitoring and support to its beneficiaries; (iv) versatility in design as it will serve as a platform for governments, foundations, the private sector and other donors to easily plug in and provide scholarships and grants to a specific target group of their choice; and (v) instruments to catalyze high level research into enterprises and industry by commercializing research supported by the Project (and by other initiatives, such as ACEs).

Component 1: Support to the implementation of the Scholarship and Innovation Fund (US\$ 15 million)

- **Sub-component 1.1: Doctoral training in ASET fields in selected African universities.** This Sub-component will support the training of doctoral students in ASET fields to support the development of priority sectors for the region. The scholarships will finance 3-4 year PhD training programs for citizens of SSA countries at competitively selected host universities in Africa. Scholarships will include “sandwich” training that will allow students to complete part of their doctoral program at international partner institutions or companies. Scholars will be selected on a competitive basis. A part of the Bank’s funds to be defined during project preparation will be assigned to match government funding, while the rest will finance scholarships regionwide. Scholars will go through a stringent competitive selection process conducted by an international independent committee that will ensure that the best students with the strongest research potential and leadership capabilities are admitted into the RSIF program.
- **Sub-component 1.2: Research grants.** These grants will support research projects in ASET fields aligned with the needs of the priority sectors, presented by faculty of RSIF host institutions involved in a PhD program with RSIF scholars. The proposal requires endorsement and co-financing by the institution. Grants will be assigned through open competitive calls and will be selected by international selection committees to ensure independence and the high quality and relevance of projects.



- **Sub-component 1.3: Innovation grants.** These grants will support: (i) Innovation projects and commercialization of research in ASET related areas aligned with the needs of the priority sectors, presented jointly by faculty of host institutions involved in a PhD program with RSIF scholars and private productive sector. Proposals will require endorsement by the institution and co-financing by the private sector involved; (ii) Development of innovation-enabling environments in higher education institutions, presented by faculty of a host institution. Proposals will require the endorsement and co-financing by the institution; and (iii) Start-ups and other entrepreneurial pursuits submitted by RSIF scholars and faculty in RSIF host universities in priority sectors. Proposals will require co-financing by a third party. All grants in this sub-component will be assigned by open competitive calls and will draw upon best practices from across the world, as well as experience within the Bank, of establishing innovation grant schemes to bring together research institutions and industries.

Component 2: Design and operationalization of a Permanent Fund (US\$ 10 million). This Component will support the design of a Permanent Fund in terms of its statutes, governance, structure and funding strategies, as well as the definition and implementation of the studies necessary for successful implementation and guaranteeing the sustainability of the Permanent Fund. These will include studies related to mechanisms based on solidarity for the beneficiaries to return to the Permanent Fund part of the benefits received: scholars once they have graduated and found a job or universities and industry once they have benefited from results from research and innovation projects supported by RSIF.

Component 3: System strengthening (US\$ 5 million).

- **Sub-component 3.1:** This Sub-component will finance the definition of the institutional arrangements to operate RSIF; the capacity building of the corresponding institutions involved, in case it is necessary; and the costs of operation of RSIF. This sub-component will also support investigation of gender issues during project preparation and specific mechanisms will be developed to ensure that women have equal opportunities.
- **Sub-component 3.2:** This Sub-component will support the strengthening of the RSIF host universities in the governance of their postgraduate and research programs, including financing the design and implementation of quality assurance, accreditation and benchmarking mechanisms, the required data collection and the design and implementation of corresponding information systems.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The project will be located in selected African Universities and in ASET areas. The project primary focus is institutional and individual skills development in ASET through implementation of the Scholarship and Innovation Fund. Research grants will support research projects in ASET fields aligned with prioritized needs of sectors. Although no civil works related infrastructure investment requiring land is envisaged under this project, it is important to ascertain that the individual projects or research grant funded projects will have minimal impacts.

B. Borrower's Institutional Capacity for Safeguard Policies



The institutional capacity of each participating entity relative to the applicable safeguards policies will be assessed during the preparation period.

C. Environmental and Social Safeguards Specialists on the Team

Svetlana Khvostova, Environmental Safeguards Specialist
Catherine Asekenye Barasa, Social Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	TBD	Environmental and social impacts for ASET research projects is expected to be very low. Where necessary, sub project screening will be conducted to inform ESMPs where applicable to mitigate any environmental and social impacts.
Natural Habitats OP/BP 4.04	No	
Forests OP/BP 4.36	No	
Pest Management OP 4.09	No	
Physical Cultural Resources OP/BP 4.11	No	
Indigenous Peoples OP/BP 4.10	No	
Involuntary Resettlement OP/BP 4.12	TBD	During project preparation, if there are any requirements for land to support generation, technology testing and transfer activities /and or restrict access to resources or loss of livelihoods, compensation notes or ARAP will be prepared for such projects. This is highly unanticipated.
Safety of Dams OP/BP 4.37	No	
Projects on International Waterways OP/BP 7.50	No	
Projects in Disputed Areas OP/BP 7.60	No	

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Mar 30, 2018

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

The participating institutions, candidates and projects funded under the research grant will be asked to conduct sub



project screening for environmental and social impacts. Where applicable, mitigation measures on how the proposed projects will avert negative environmental and social impacts and enhance positive impacts will be included in the funding/grant guidelines. The participating institutions will be responsible for ensuring adequate oversight on safeguards requirements.

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APPROVAL

Task Team Leader(s):	Javier Botero Alvarez
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Approved By

Practice Manager/Manager:	Toby Linden	31-Oct-2017
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Country Director:

Ahmadou Moustapha Ndiaye

31-Oct-2017
