PASET @ 5: Progress since the 2014 Dakar Call to Action
LAYING A SOLID FOUNDATION

In 2013, the Governments of Ethiopia, Rwanda and Senegal came together to lay the seeds of a partnership that is Africa-led, Africa-owned and Africa-financed to address the critical shortage of scientific and technical capacity on the continent. In 2014, they gathered once again in Dakar with an urgent Call to Action to bring governments, private sector, educators and partner countries together to develop Africa’s applied sciences, engineering and technology (ASET) talent for the socio-economic development of the continent.

These past five years of PASET are a reflection of what can be achieved with a clear vision, strong governance, collaborative partners, and a desire to make an impact on Africa’s technical and scientific capacity. PASET has met several of the goals laid out in the 2014 Call to Action. We have successfully established and operationalized the Regional Scholarship and Innovation Fund as a pan-African science fund and raised US$36 million for scholarships. We are supporting 11 sub-Saharan African institutions to become world class institutions for PhD training and research institutions in science and technology fields and have made sure inroads towards training doctoral students, especially women. Through the Regional TVET Initiative that has World Bank funding of US$ 293 million, 16 centers have been competitively selected as regional flagship TVET institutes to train TVET faculty. In addition, the Regional Benchmarking of SSA Universities initiative has made strides to support quality assurance by supporting universities to measure their performance and take corrective actions. Furthermore, PASET has also served as a fertile knowledge sharing platform to facilitate knowledge exchange across Africa and internationally with Brazil, China, India, Japan and Korea on best practices to build home-grown expertise in science and technology areas.

PASET’s growth has been anchored in its regional approach and the ownership and leadership of African governments to solve the continent’s challenges. We are delighted that today 8 African governments have contributed to PASET’s initiatives, an additional 5 have made firm commitments, and about 30 countries have taken part in our knowledge sharing activities. We look forward to more countries joining us in this important goal to provide opportunities for ASET training to African youth.

At the same time, PASET has been fortunate to have excellent partners in our journey. We have truly appreciated the collaboration of the World Bank which has been steadfast in facilitating this partnership since its inception and currently hosts the interim Secretariat. We extend our appreciation to the various partner countries that have graciously hosted PASET knowledge sharing visits including Brazil, China, India, Japan and Korea. We are also grateful to the Korea-World Bank Group Partnership Facility and the China-World Bank Group Partnership Facility for their financial support to PASET’s activities and PASET looks forward to their continued support.

By 2050, 525 million young people – over half the world’s young population – will be living in Sub-Saharan Africa. It is imperative that we urgently respond to the impending shift in the world, marked by the digital economy and Fourth Industrial Revolution, and actively promote programs in ASET areas. We must seize the opportunity to ensure that our education systems deliver the highest quality training and that our youth has the scientific and technical skills to be at the forefront of transformative technologies and innovation. While much work is yet to be done, PASET has laid a solid foundation that we look forward to building upon in the coming years to position Africa and African youth as leaders in the global economy.

Sincerely,

Prof. Aminata Sall Diallo
Executive Director, PASET Executive Board
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<tr>
<th>Acronym</th>
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<tr>
<td>ASET</td>
<td>Applied Sciences, Engineering and Technology</td>
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<td>KSP</td>
<td>Knowledge Sharing Program</td>
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<td>PASET</td>
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US$ 36 million raised for the Regional Scholarship and Innovation Fund (RSIF), a pan-African science fund.

11 RSIF host universities competitively selected among 160 applicants and 16 RSIF PhD scholars selected from 980 applicants.

30 SSA countries and 700 participants across PASET knowledge sharing events.

More than 80 sub-Saharan African universities participating in the Regional Benchmarking for SSA Universities Initiative.

US$ 293 million investment for the Regional TVET Initiative with 16 regional flagship institutes.
Sub-Saharan Africa faces a critical shortage of scientific, engineering and technological expertise – from the level of the technician to the level of the applied scientific researcher. This contributes to limited adoption, adaptation and diffusion of the scientific and technological innovations sweeping the world that could benefit the continent.

Together with appropriate economic and social policies, incentives and institutional structures, building this critical mass of technical-scientific expertise is essential to enable Africa’s transformation.

The Partnership for skills in Applied Sciences, Engineering and Technology (PASET), a regional, collaborative approach brings together African governments, local private sector and donors to revitalize higher education and TVET institutions, and programs refocusing them towards development of excellence in science and technology to build skills across key sectors driving development on the continent.

What does PASET do?

- Incubates new ideas and operationalizes them for implementation as scale through regional initiatives that complement country level actions.
- Mobilizes finance for flagship regional initiatives.
- Facilitates knowledge transfer to SSA countries from countries that succeeds in creating and sustaining high quality, demand-driven science and technology programs in higher education and TVET.
PASET 10-YEAR GOALS
FROM CALL TO ACTION
PASET FORUM, DAKAR, 2014

HIGHER EDUCATION

→ Over 10,000 new African high quality PhDs in the applied sciences in priority domains, who will train the next generation of students, researchers and innovators in priority areas, particularly women.

→ At least 5 SSA universities that emerge as leaders in applied research in one or more domains.

→ Increasing the proportion of students enrolled in applied sciences, engineering and technology (ASET) courses and higher education.

→ Establishing a SSA-wide regional post graduate scholarship program in ASET areas.

SKILLS DEVELOPMENT

→ At least 5 regional TVET centers of excellence for training faculty of TVET institutions, to enable resource sharing, quality assurance and provide specialized training in emerging areas;

DATA

→ The development of a regional quality assurance mechanism for ASET programs, benchmarked to comparable systems globally

→ Establishment of high quality data systems and benchmarking of ASET programs and institutions in at least 10 SSA countries.
KEY MILESTONES

INITIATIVES

JUN 2015
Launch of Regional Scholarship and Innovation Fund by H.E. President Macky Sall

NOV 2015
Launch of Regional Benchmarking of SSA Universities Initiative

FEB 2016
First benchmarking exercise begins

OCT 2016
Start of Knowledge Sharing Program with Korea

AUG 2017
Contribution from Government of Kenya to RSIF

OCT 2017
Contribution from Government of Rwanda to RSIF

JUN 2018
Enrollment of 1st cohort of RSIF scholars

OCT 2018
Approval of Regional TVET Initiative as World Bank project

DEC 2018
Second benchmarking exercise begins

MAR 2019
Contribution from Government of Cote d’Ivoire to RSIF

APRIL 2019
Contributions from Governments of Burkina Faso, Ghana and Senegal to RSIF

KNOWLEDGE SHARING

JUL 2013
1st PASET Forum, Addis Ababa

MAR 2014
2nd PASET Forum, Kigali

JUN 2014
3rd PASET Forum, Dakar and PASET’s Call to Action

AUG 2015
Brazil-Africa Learning Event

SEP 2015
Joint Workshop for Promoting Korea-Africa Knowledge-Based Development

APR 2017
4th PASET Forum, Nairobi

JUL 2017
1st Africa-China-World Bank Education Partnership Forum on TVET

SEP 2017
Korea Visit for RSIF Host Institutions

NOV 2017
India-Africa Knowledge Exchange Visit on Skills

SEP 2018
2nd Africa-China-World Bank Education Partnership Forum on TVET

OCT 2018
1st Africa-Japan Higher Education Partnership Workshop

MAY 2019
5th PASET Forum, Kigali

GOVERNANCE

JUL 2013
Establishment of Founding Steering Committee, Technical Executive Committee, Consultative Advisory Group and Secretariat

JUL 2016
Adoption of PASET Charter and Formal Governance Structure with Board of Directors, Executive Committee, Consultative Advisory Group and Secretariat

AUG 2018
Change to new Governance Structure with Governing Council, Executive Board, Consultative Advisory Group and Secretariat

DEC 2018
Adoption of revised PASET Charter
A nimble, efficient and inclusive governance structure has been at the heart of PASET's management as an effective partnership. Guided by a Charter that lays out the objectives, principles and norms for the partnership's functioning, PASET's governance is led by a high-level Governing Council and an Executive Board that bring together the contributors to PASET's regional initiatives. A Consultative Advisory Group (CAG) comprising scientists, academics, and industry leaders advises the Council and Board and a small Secretariat hosted at the World Bank supports the governance structure. PASET's regional initiatives are implemented through technical partners.

The current governance structure has evolved from the initial structures adopted by PASET's leadership during its foundation stages and formally in 2016 to enable PASET to continue to respond rapidly to new and increasing demands that have accompanied the partnership's growth.

**Governing Council (GC):**
High-level body for Ministers and donors to provide thought leadership and take major policy decisions on PASET's direction.

**Executive Board (EB):**
Managing body of PASET responsible for overseeing implementation of PASET's activities.

**Consultative Advisory Group (Only advisory capacity):**
Provides scientific and technical advice to GC and EB. Composed of experts from higher education and TVET/skills from Africa and other regions.

**Secretariat:**
Responsible for implementing technical assistance, knowledge sharing & convening of GC and EB meetings. Hosted at the World Bank in the interim.

**RSIF Implementation Unit**
Implements RSIF according to guidelines/procedures set by EB and contributing donors.

**NOTE**
Solid arrow represents reporting line, while dotted arrow represents close working relationship.
Starting from 3 countries (Ethiopia, Rwanda and Senegal) at its inception, PASET has expanded its footprint and engaged countries across the SSA region.

Countries Contributing to RSIF/participating in the Regional TVET initiative: 8

Additional SSA Countries Engaged in PASET activities: 22

Partner Countries China, South Korea, India, Japan and Brazil: 5
REGIONAL SCHOLARSHIP AND INNOVATION FUND (RSIF)

PASET’s flagship initiative on higher education, the Regional Scholarship and Innovation Fund (RSIF) is a pan-African science fund seeded by African governments that aims to raise the quality of PhD training and applied and demand-driven research in competitively selected SSA universities through partnership with top-class international universities. The RSIF was launched in 2015 by H.E. President Macky Sall of Senegal with support from representatives of the Governments of Ethiopia and Rwanda to support PASET’s vision of facilitating the emergence of at least 5 high quality research universities in sub-Saharan Africa with expertise in selected domains and contributing towards training 10,000 PhD students in ASET disciplines, at least 30 percent of whom are women. The RSIF finances 3 windows for PhD training, research and innovation and is innovatively designed to ensure the long-term sustainability of funding through the establishment of an endowment fund.

Since the launch of the RSIF, PASET has successfully operationalized the PhD Scholarships window, putting in place rigorous processes for a well-managed program, competitively selecting SSA host universities and welcoming a first cohort of RSIF scholars in 2018 at these host universities. The program is enabling young Africans, especially faculty without PhDs and women, to pursue doctoral training and research in priority sectors for Africa’s growth such as food security, material, minerals and mining engineering, energy, climate change and ICT and become dynamic researchers, innovators and leaders who will solve Africa’s development challenges. It gives them the opportunity to complete part of their study at selected renowned international partner institutions. The program also greatly benefits the African host universities through capacity building support and partnerships with international universities to mold them into world class institutions. The research and innovation grant windows will also be operationalized soon.

The International Center of Insect Physiology and Ecology (icipe) was competitively selected to serve as the implementing unit.

The RSIF program is unique because it focuses on promoting research in Africa. I see this initiative as a catalyst in training a highly skilled workforce while building an attractive environment for African scientists like myself to thrive and continue our research.

Sylvia Wairimu, RSIF PhD Scholar
KEY BENEFICIARIES

→ SSA Host Universities – Receive capacity development support, international partnerships, research and innovation grants

→ Young SSA Scholars – Receive scholarships for doctoral training, research grants, innovation grants, and have the opportunity to study abroad through sandwich program and work alongside international researchers

→ Faculty of SSA universities – Receive research and innovation grants

HIGHLIGHTS

→ US$ 36 million raised from 6 SSA governments, Government of Korea and World Bank. Commitments made by 5 additional SSA governments.

→ 11 SSA universities competitively selected as Host Universities from almost 160 applicant universities.

→ 16 scholars from 8 countries (first cohort) competitively selected, funded and enrolled in PhD programs from 980 applicants.

COUNTRIES WITH RSIF HOST UNIVERSITIES
In order to develop a highly skilled labor force, top quality universities are critical and measuring their performance is a high priority. The Regional Benchmarking of SSA Universities initiative aims to improve the quality and relevance of PhD programs and institutions by equipping SSA universities with the tools to measure their performance, identify their strengths and weaknesses, and improve their capacity to provide PhD training and undertake cutting-edge research.

PASET has worked closely with Shanghai Jiao Tong University to adapt their internationally accepted methodology and tools for the African context through a consultative process. The initiative directly impacts universities by assisting them to improve their capacity in data collection, management information systems and evidence-based strategy development. It has brought the issue of lack of quality higher education data to the forefront. In addition, universities gain valuable insight on how well they perform on governance, revenue generation, technology transfer and other indicator dimensions at the program and institutional levels.

The Benchmarking initiative has grown considerably since its pilot phase in 2014 and successful launch in 2015. A first benchmarking exercise was held in 2016 that saw the participation of 48 SSA universities and a second exercise is ongoing in 2019 with the participation of about 75 institutions. A graduate tracer study tool is also being developed with MyCOS, a Chinese higher education data analytics company and several partners are supporting the initiative including the Southern African Association for Institutional Research (SAAIR), and German Academic Exchange Service (DAAD) among others. The African Virtual University was selected competitively in 2018 to serve as the initiative’s implementing entity.

### UNIVERSITIES PARTICIPATING IN BENCHMARKING EXERCISES

- **2014 PILOT**: 7
- **2016 1ST ROUND**: 48
- **2019 2ND ROUND**: 74
REGIONAL TVET INITIATIVE

PASET’s Regional TVET Initiative focuses on developing technical-vocational skills for new industries and services as well as for modernizing agriculture. The initiative aims to support the development of highly specialized TVET programs at selected flagship institutes for training of technicians and TVET faculty meeting international certification standards.

Conceptualized under PASET, the Regional TVET Initiative is financed through a US$ 293 million World Bank project initially for East Africa that was approved in 2018. The project benefits competitively selected Regional Flagship TVET Institutes to become networked centers that can provide high-quality industry-recognized TVET training programs at the diploma and degree levels as well as short-term trainings, cutting-edge training facilities and equipment, and certification of trainees. It also supports the national TVET systems through capacity building and regional integration through harmonized occupational standards and qualifications, knowledge sharing and regional advocacy and strategy development. The Inter-University Council of East Africa (IUCEA) serves as the Regional Facilitation Unit. A similar project for West Africa is also expected in the future.

HIGHLIGHTS

→ US$ 293 million World Bank financing for a regional project in East Africa

→ 16 competitively selected Regional Flagship TVET institutes in the areas of transport/infrastructure, power/energy, manufacturing and ICT in Ethiopia, Kenya and Tanzania

→ Complementary interventions at the institutional, national and regional levels.
KNOWLEDGE SHARING PROGRAM (KSP) WITH KOREA

The Korea Development Institute and PASET started a three-year multi-country Knowledge Sharing Program (KSP) in October 2016 for technical assistance and policy recommendations in the areas of Human Resource Development, Science, Technology and Innovation, and TVET. The first phase of the KSP targeted the three initial member countries of PASET – Senegal, Rwanda and Ethiopia – and has focuses on the priority areas for each country.

Over the course of the program, representatives from Korea Development Institute and the 3 African countries have been meeting regularly for workshops and consultations to share findings and discuss recommendations. Two policy recommendation documents have been published for Senegal and Rwanda focusing on areas such as strategic planning to establish TVET centers of excellence and science, technology and innovation governance for Senegal, and improving performance of the human resource development system and ICT human resource development for Rwanda. The program is currently in its third year and has begun work with Ethiopia as well.

KNOWLEDGE EXCHANGE

PASET Forums

The PASET Forums serve as PASET’s key avenue for knowledge-sharing and bring together diverse stakeholders for a rich exchange of strategies and experiences to build high quality technical and scientific capacity in the SSA region. Since 2013, PASET has organized five Forums around Africa that have seen the participation of about 700 attendees including Heads of State, Ministers of Education and high-level officials from African governments, representatives from partner country governments, private sector, universities, research agencies, academics and donor organizations.

The PASET Forums have provided a fertile platform for knowledge exchange and the incubation of new initiatives such as the RSIF at third Forum in Dakar. They have offered an ideal space to cultivate new partnerships. For example, discussions at the fourth Forum in Nairobi gave rise to a promising PASET-India partnership on skills development and resulted in a PASET study tour to India with 6 African governments. In addition, the Forums have contributed to building momentum for PASET’s growth by providing SSA governments an opportunity to interact with PASET’s leadership and learn more about PASET’s vision, goals and programs.

IMPACT OF PASET FORUMS

→ Promotion of rich knowledge exchange
→ Incubation of new initiatives
→ Cultivation of new partnerships
→ Building momentum for PASET’s growth
PROMOTING PARTNERSHIPS

Through the years, PASET has invested in promoting partnerships between SSA countries and partner countries that have successfully developed a conducive policy environment and invested in building ASET skills capacity to develop their labor force. These partnerships allow SSA countries to leverage the experience of partner countries and build close collaborations at the government as well as institutional levels.

KOREA

PASET has been honored to share a close partnership with the Republic of Korea since 2015, which has only strengthened over time. Korea’s support to PASET has ranged from technical assistance on the Knowledge Sharing Program (KSP) and knowledge exchange through various study tours to financial support to PASET’s activities through a Trust Fund at the World Bank and investment of US$10 million in the RSIF. In addition, the collaborations span across different levels: at the government level, PASET collaborates with the Ministry of Economy and Finance and Ministry of Science and ICT; at the university level, Korea Institute of Science and Technology, Korea Institute of Energy Research, Seoul National University, and Korea Research Institute of Chemical Technology are partners on the RSIF and have MoU; and on the private sector side, Samsung Dream Scholarship Foundation and Korea Development Institute support the RSIF and the KSP. In addition, the Government of Korea is represented on the PASET Governing Council and Executive Board and Korean industry leaders are members of the PASET Consultative Advisory Group.

CHINA

PASET has had numerous engagements with China since 2015. The Ministry of Finance of China supports PASET through a Trust Fund managed by the World Bank to promote partnerships on higher education between Africa and China and also supported the preparation of PASET’s Regional TVET Initiative. In September 2017, the Chinese Ministry of Finance, Ministry of Education and the World Bank signed a MoU on a cooperation framework for support to African higher education, science and technology and TVET and there has been an ongoing tripartite collaboration among China, Africa and the World Bank in these areas. In addition, there are several vibrant bilateral engagements at the institutional level and Chinese private sector companies have also demonstrated interest in supporting PASET’s activities.
**INDIA**

Following the 4th PASET Forum in 2017, PASET and the Government of India began exploring a promising partnership on skills development. PASET organized a knowledge exchange visit with 6 African governments to India in 2017 and a partnership dialogue is currently on-going to determine the modalities of collaboration. On the higher education side, the World Bank and India’s Department of Science and Technology signed an MoU in 2019 that will facilitate partnerships between select RSIF host universities and the renowned Indian Institutes of Technology (IITs).

**JAPAN**

PASET has recently engaged with Japan to explore collaborations on higher education. Following the “1st Africa-Japan Higher Education Partnership Workshop” held in Japan in late 2018, two MoUs were signed between RSIF host universities and a Japanese university and an online education company respectively. Immediate results of the partnership will be showcased at the upcoming Seventh Tokyo International Conference on African Development (TICAD VII) in August 2019 in Japan. In addition, the Japanese Ministry of Finance will further support knowledge sharing and technical assistance for PASET.
Over the years, PASET has organized several study tours for African governments and institutions to partner countries to promote knowledge exchange on higher education and skills development. These visits have benefited participants from Ministries of Education and TVET as well as from higher education and TVET institutions in sub-Saharan Africa by enabling them to leverage and learn from the experience of the host country through strategic discussions with policy makers, site visits to implementing institutions, and interactions with beneficiaries. In addition, the study tours have resulted in the birth of exciting new institutional partnerships and signing of Memorandums of Understanding (MoUs) for rich collaborations between Africa and global partners.

Through generous support from partner countries, PASET has been pleased to arrange study tours to:

- Brazil for TVET and skills development in 2015
- Korea for RSIF host institutions in 2017
- China for higher education in 2017
- India for TVET and skills development in 2017
- China for TVET and skills development in 2018
- Korea for TVET and skills development in 2018
- Japan for higher education in 2018