

Workshop on building capacity and scaling up adoption of STI4SDGs Roadmaps in Africa

Summary by the Secretariat¹

4 November 2023

Background:

From 12 to 13 October 2023, the United Nations Department of Economic and Social Affairs (UNDESA), the United Nations Economic Commission for Africa (UNECA) and European Commission's Joint Research Centre (JRC) co-hosted the *Workshop on Building Capacity and Scaling Up Adoption of STI4SDGs Roadmaps in Africa*.

The purpose of the Workshop was to build on the work of the STI Roadmaps of the sub-working group of the UN Inter-Agency Task Team on Science, Technology, and Innovation for the SDGs (STI4SDGs Roadmaps) including recent discussions on STI Roadmaps, which were discussed during the 8th annual Multi-Stakeholder Forum on Science, Technology, and Innovation for Sustainable Development Goals (STI Forum).

The Workshop was well attended with over 170 participants from African STI4SDGs roadmap pilot countries such as Ethiopia, Ghana, and Kenya, including representatives from international partners China, Japan, and the European Union. Participants representing African governments, the scientific and engineering community, the donor community, the private sector, academia, and various international and UN entities were actively engaged in the conference. Representatives from India and Mexico as STI4SDGs roadmap champions from Asia and Latin America also participated.²

The Workshop consisted of the following eight Roundtable discussions:

- **Roundtable 1:** Strengthening innovation ecosystems through mapping STI potentials and multi-stakeholder engagement: case studies and champions.
- **Roundtable 2:** Funding and institutional mechanisms for promoting mission-oriented technology deployment to solve specific problems.
- **Roundtable 3:** Designing, funding, and implementing mission-oriented research and innovation policies and national STI roadmaps to address national sustainability challenges.
- **Roundtable 4:** Localising SDGs: mobilizing stakeholders to bridge the gap from laboratories to farms, factories, and communities.

¹ The recommendations expressed in this report are a summary of the contributions made by experts in the meeting and do not necessarily reflect the views of the United Nations.

² UN DESA successfully chaired two-day's meeting, with substantive and institutional supports provided by UN Economic Commission for Africa (ECA), the Coalition on STI for Africa's Development, the International Research Centre on Big Data for the SDGs (CBAS), International Science Council (ISC), World Federation of Engineer Organization (WFEO), the Global Solutions Summit (GSS), UN Major Group for Children and Youth (MGCY), the Irish Embassy, the TFM 10 Member Group, the Africa-Europe Science Collaboration and Innovation Platform (AERAP), Future Africa, the African Union (AU) Commission, the EU delegation to the AU, OECD, Japan Science and Technology Agency (JST), Massachusetts Institute of Technology (MIT), and FAO.

- **Roundtable 5:** Mobilizing science and research funding for development.
- **Roundtable 6:** Strengthening capacities to access and use relevant open data - big earth data for SDGs.
- **Roundtable 7:** Youth initiatives and stakeholder mapping in science, technology, and innovation.
- **Roundtable 8:** Regional networks and other mechanisms for promoting multi-stakeholder approach with localized STI4SDGs and bottom-up community inputs.³

Highlights:

The [Workshop on building capacity and scaling up adoption of STI4SDGs Roadmaps in Africa](#) highlighted a key challenge of the fragmentation of various initiatives and limited funding for scaling up and sustaining the implementation of STI policies and strategies at different levels. The continuous evolution of STI with the current wave of Artificial Intelligence (AI) and the general rapid technological advancement coupled with growing environmental (including climate) challenges, require regular reviews of policies and adoption of STI best practices across the globe to accelerate the achievement of the SDGs. The UN can play an instrumental role in addressing these challenges.

The Workshop marked a significant milestone as the first dedicated, in-person meeting on the STI4SDG Roadmaps since the onset of the COVID-19 pandemic. It served as a milestone UN event of the year to enhance STI capacity, facilitate peer learning and partnership, support governments in assessing and advancing the implementation of STI roadmaps/actions, deliberate on options to address challenges, and strengthen the science-policy interface. Another significant milestone of the Workshop was the inclusion of the [Coalition on Science, Technology, and Innovation for Africa's Development](#) in its agenda. The Coalition is an informal group emanating out of the 2023 STI Forum, which was initiated, and is co-led, by five (Cameroon, Ethiopia, Ghana, Morocco, and South Africa) African Permanent Representatives accredited to the United Nations in New York. The *raison d'être* of the Coalition is to advance Africa's STI interests within the UN and mobilize the Diaspora talent and investment to promote awareness of and exploit STI opportunities in Africa.

Inclusion of the Coalition in the agenda of the Workshop was based on the following correlation between the STI4SDG Roadmaps and the Coalition: a) both are concerned with utilising STI for the implementation of SDGs; and b) the Coalition consists of UN Member States who participated in the STI4SDGs Roadmap Pilot Programme.

The Workshop discussed how Roadmaps could help Africa mobilize youth, the Diaspora, innovation, and the private sector. The focus on Africa is crucial given that the continent lags in the achievement of the key SDGs including SDGs 1, 2, 3, 6 and 8. The Workshop proposed the establishment of thematic technical groups to further advance the STI4SDGs agenda within Africa and beyond. Additionally, the Workshop helped identify potential partners for STI4SDG initiatives, specifically focusing on the Coalition on STI for Africa's Development. It also liaised and explored potential future collaborations with various STI partners, including:

- The International Research Centre of Big Data for Sustainable Development Goals (CBAS)
- The International Science Council (ISC)

³ Detailed documentation about the Workshop, including webcast videos, concept notes/background notes, speakers' bio/photos, the Terms of Reference for the Coalition on STI for Africa's Development presentations, as well as guiding questions can be found at the Workshop's website at [here](#). It will serve as a virtual site of references/resources for STI capacity development.

- The World Federation of Engineering Organizations (WFEO)
- The Global Solutions Summit (GSS)
- The United Nations Major Group for Children and Youth (UN MGCY)
- The Government of Ireland,
- The Technology Facilitation Mechanism 10 Member Group
- The Africa-Europe Science Collaboration and Innovation Platform (AERAP)
- Future Africa, the African Union Commission
- The European Union Delegation to the AU
- The Organisation for Economic Co-operation and Development (OECD)
- The Japan Science and Technology Agency (JST), and
- The Massachusetts Institute of Technology (MIT).

The Workshop promoted partnerships on STI capacity-building for the SDGs, strengthening knowledge sharing, peer learning,⁴ and international cooperation.⁵

All actors (i.e., government, civil society, and academia) shared their plans and reaffirmed their support to African countries' commitments to reach 1% of GDP for research and development at the national level. The quality of research and development will focus on enhancing the achievement of sustainable development and require strong partnerships with public research institutions and the private sector.

National development strategies were presented to share lessons and experiences on how to provide an enabling environment for STI, including to enhance research infrastructure and to establish a framework to ensure a healthy eco-system that allows sharing of knowledge while protecting the ownership rights of intellectual property (IP).

Some participants emphasized that STI4SDG Roadmaps serve as practical and operational action plans and strategies that are valuable tools for enhancing local, regional, national, and continent's STI systems in support of the SDGs, effectively mobilizing domestic efforts and resources, and fostering international partnerships to leverage STI for the achievement of the SDGs. In this connection, participants committed to collaborating with their national delegations to integrate the STI4SDG Roadmap approach into the Voluntary National Reviews (VNR) and Voluntary Local Reviews (VLR) processes for the SDGs.

Recommendations:

- A) The recommendations on regional networks and mechanisms for promoting the multi-stakeholder approach focused on the Coalition on Science, Technology, and Innovation for Africa's Development:⁶

⁵ For example, at the margin of the Workshop, DESA and ECA were invited to witness the signing ceremony of the memorandum of understanding (MoU) between CBAS/ the International Centre on Space Technologies for Natural and Cultural Heritage (HIST) under the Auspices of UNESCO and the International Council on Monuments and Sites (ICOMOS)' Ethiopian National Committee. In addition, the workshop served as a platform for partnerships between UK-based universities and African universities, for standard-setting, and equalizing playing field for joint publications and research infrastructure development.

⁶ The main objectives of the Coalition are to: i. Empower Africa's youth; ii. Enable the contribution of the African Diaspora; iii. Leverage the African Continental Free Trade Area (ACFTA); and iv. Build a diversified supply and value chains for Africa's industrial development. The Terms of Reference of the Coalition were presented. It was launched in May 2023 during the UN STI Africa Day, co-founded by South Africa, Ethiopia, Cameroon, Ghana, and Morocco, representing the five African regions.

- One of the main roles and powers of the Coalition is to raise awareness of and maintain momentum at the level of diplomatic missions accredited to the UN in New York about initiatives and projects implemented on the ground in Africa, best practices that can be scaled up, and pressing challenges to be addressed. The Coalition has the potential to support the UN policy discussion with evidence and findings from projects and initiatives. This evidence and findings can be used by the Coalition to inform and support future SDG processes, resolutions, programmes, and funding mechanisms discussed at the UN level. Raising awareness and making data and policy recommendations available are practical initiatives that the Coalition can engage without dispensing considerable effort on its part.
- For the Coalition to determine a clear value proposition for the Diaspora and improve its (i.e., Coalition's) visibility and branding.
- For the Coalition to capitalise on the UN's convening power, which can be used to approach funding partners such as development banks for resource mobilisation for the implementation of the SDGs.
- Secretariat for the Coalition to be established within the UN and funded. At the moment, UNDESA and UNECA function as the Coalition's secretariat on an informal basis.
- The Coalition to reach out to Diaspora networks as well as individuals who connect existing networks.⁷
- African universities associations to be linked with African Diaspora networks; African Universities Alumni can be created to work with the Diaspora and for the Coalition to facilitate match-making events for universities and the Diaspora.
- The Diaspora to support the mobility of youth through North-South, South-South and the Intra-Africa Mobility Programme and for youth partnerships, such as the Greater Boston Area Youth Connection to be created.
- Establish big data centres for knowledge-sharing, Artificial Intelligence and remote censoring technologies to be used to determine the needs of African communities, which can be communicated to the Diaspora for matchmaking purposes.
- Establish a knowledge and data sharing platform, such as an SDG Big Data Centre.
- Facilitate the collaboration of WFEO members, committees, and partners with UNDESA, UNECA and African member states that are part of the Coalition to advance the SDGs, especially through engineering and capacity-building.

⁷ The focus of the discussion is on what diaspora can benefit from returning or engaging in collaborations with home countries institutions. It is not just a matter of brain drain and returning human capital and it is important to leverage this potential and strengthen collaborations. One way to do this is by ensuring awareness on opportunities for engagement. In addition to mapping the diaspora communities, it is important to map initiatives that facilitate collaboration and favour research on topics that are relevant for Africa. There is no need to build new networks but is rather important to make good use of the existing ones.

- Prepare a thematic ‘call for papers’ on topics of the Coalition and beyond (e.g., other UN Inter-Agency Task Team on STI workstreams could propose more topics for the next STI Forum).⁸
- Establishment of a technical committee is fundamental to ensure the implementation and identification of relevant content. As it is proposed, the formation of an informal gathering of experts of co-leads (including STI focal points from the co-leads’ diplomatic missions and their capitals) will be the starting point. It will draw expertise and experience from thematic expertise and various partners to inform their work.
- A dedicated session on the Coalition at the upcoming Regional Preparatory Conference for the 9th Pan-African Congress, which will be hosted on 4 - 5 December 2023, in Pretoria, as well as a dedicated session on the Coalition at the Forum on Big Data for the SDGs by CBAS in September 2024.

B) Key recommendations on funding

Funding was a cross-cutting topic of discussion. This took the form of discussing ways and means of scaling up innovative solutions (including grassroot innovations), particularly those developed by the ⁹COB, and those aimed at promoting the commercialization of Indigenous knowledge. The central idea was the necessity of involving these groups in the policymaking process. Nevertheless, a recurring challenge remains the collection of data or mapping the often-informal modes of knowledge creation.

- Build on the ‘entrepreneurial university’ model, focus on large flagship efforts, e.g., African STI Fund, addressing the gaps on lack of trained expertise to utilise and apply the technologies.
- Call for a dedicated working group to prepare a position paper on options for funding mechanisms on STI for SDGs.
- Call for 'best practices' in the different thematic areas that were already identified by the Coalition. A pool of ‘best’ initiatives ready to scale up can be selected by the Coalition’s Technical Committee. These initiatives should have the potential to be scaled up and could be promoted in the relevant fora at the UN level. This package of initiatives could be showcased for funding through regular information meetings for UN Member States.
- Plan a follow-up Addis Ababa meeting in the first quarter of 2024 to discuss a voluntary funding model to operationalize the implementation of the [UN Technology Facilitation Mechanism](#), using Africa as a first piloting region. The meeting can review and validate the position papers on financing STI for SDGs

Annex I: Proposed next steps and activities

- I. **Strategic partnerships:** Country partners such as the United Arab Emirates, Brazil, China, the EU, Japan, Turkey, and the US that have ongoing initiatives with a focus on Africa. These could focus on a specific area, such as a partnership on digital transformation - access to tools and

⁸ This call for paper could be in collaboration with African peer-reviewed journal to publish selected papers on a special issue. Wide dissemination of the call for paper and engagement of African researchers from different existing networks. And Establishment of a small prize assigned to the best paper and to be awarded at the next STI Forum.

⁹ For example, the American Society of Civil Engineers (ASCE) hosts an Innovation Contest – details, including WFEO's program can be shared.

network (e.g., AI and big data); research and development funding; development of regional hubs; industry and investment materials for renewable energy solutions; health and education, etc.

Possible activities: Seek and discuss with potential partners, secure commitments, and design implementation programmes.

- II. **Mapping Diaspora networks, associations, and similar formal bodies working in STI and STI-related fields.** There are several networks or organised groups of the Diaspora that could, among others: a) provide the Coalition with access to a large pool of experts in the Diaspora; b) offer useful lessons on how to link the Diaspora to the continent to suggest what works and what may not work; c) leverage existing resources (e.g., human, financial, services, technologies, fellowships, etc.) that may exist in the networks; and d) help further identify and extend potential partners for the Coalition.

Some examples include: africandiasporanetwork.org; africandiasporic.org; www.ardn.ngo; Réseau des Entrepreneurs de la Diaspora Africaine, All-Africa Students Union; africatdc.com; www.adept-platform.org; and the (US) President's Advisory Council on African Diaspora Engagement. Some have relations with UN entities such as the International Organization for Migration (IOM), UN Network on Migration, etc., that could also serve as entry points and engagement partners.

Possible activities: Capacity-building programs in innovation, investment, and entrepreneurship promotion, hosting awards ceremonies, organizing events, and showcasing endeavours relevant to the Diaspora community.

- III. **Mega R&D and Technology Initiatives Database:** Research and development infrastructure consists not only of equipment but also the organizations that facilitate collaboration among researchers and scientists from academia, industry, and government. Collaboration, as such, accelerates the advancement of scientific discoveries, breakthroughs, and the provision of technological services, fostering interdisciplinary work. Examples include the Square Kilometre Array and Consortium, which represent significant global technological initiatives with numerous partners, including those from Africa, and have demonstrated their utility during the COVID-19 pandemic. R&D infrastructures of the African Centres of Excellence (ACE) funded by the World Bank and some African countries also reflect the current efforts to build such needed infrastructures to boost scientific research and development. Therefore, establishing a comprehensive database showcasing Africa's extensive mega R&D infrastructure can play a pivotal role in attracting researchers for cross-border collaboration, enhancing technical and managerial skills, and securing investments in such vital facilities.

Possible activities: showcasing of R&D facilities in Africa, which is expected to encourage collaboration and partnerships both among African countries and between Africa and the global community, thereby fostering the growth and development of African scientific infrastructure.

- IV. **Community technology needs reference:** While most technology looks for problems to fix, communities seeking development solutions or technologies have fewer options for reaching potential solution providers. To address this, a portal can be created where communities, including leaders and partners (e.g., UNICEF, UN-Habitat, etc.), can submit their specific needs, such as clean water, disease surveillance, and energy solutions, among others. Communities may range from 'small or specialized communities' to cities and even countries willing to implement solutions. This, in turn, can attract the attention of philanthropists, entrepreneurs, innovators, inventors, and scientists and inform the efforts of governments, international partners, and civil society.

Possible activities: Develop a portal for community challenges. The Coalition can leverage the Origin platform in the short-term. These challenges and their owners/champions can be

showcased to attract the interest of innovators, scientists and entrepreneurs willing to support them.

- V. **Youth platform:** Enabling the youth to work with each other and share their expectations with the experienced seniors across the continent and beyond could help bring their concerns to political and business leaders and unlock their full potential as innovators, entrepreneurs and community leaders. The Coalition could bring existing youth groups such as YALDA to engage, support, moderate and grow the platform. Both ASCE and WFEO have Young Members and Future Leaders groups that could be leveraged and expanded (scaled up).

Possible activities: Friendly, yet competitive, youth innovation and technology challenges; youth exchange programmes and partnerships between African youths and youths of the world. The Coalition can call on its members and partners to support some of the efforts (e.g., extend or host visiting fellows even among African countries).

- VI. **Convening Africa-wide events:** The Coalition is well placed to convene Africa-wide events and initiatives that could bring together the teams in Africa, the Diaspora and partners alongside key meetings in Africa and at the United Nations.

Possible activities: These could include exhibitions, roundtable discussions, webinars, social media publications, and matchmaking events aimed at highlighting STI progress in Africa. These events may be held in New York or within African member states and could feature the contributions of youth, the Diaspora, and collaborations with partners across the continent.

- VII. **Supporting an informal secretariat:** UNDESA and UNECA currently serve as an informal secretariat of the Coalition. The Coalition and its partners may wish to provide funding, interns, fellows and staffs that can work with the current team at UNDESA and UNECA to undertake the work and support. Over time, the Secretariat should evolve to become more dedicated to the Coalition, and thus, give the Coalition more freedom to operate.

Annex II: Mobilizing science and research funding for development: Transforming African science systems to promote sustainable development

The Workshop also discussed underlying causes that preclude sufficient global attention to, and funding of, science in Africa. This discussion covered the following areas:

1. **Mission-oriented science** is about setting priorities and designing science projects to address and solve the problems at the core of the priorities with outcomes and impact at the local, regional, national and/or global levels. Multi-stakeholder participation in priority-setting and project formulation is vital.
2. To facilitate **transformative partnerships** that promote equity and sustainability in science and co-development that is inclusive and empowering is crucial. To this end, the *African Charter on Transformative Research* was mentioned as a blueprint to guide initiatives in this regard.
3. We also need to address issues of **scaling and application** to draw more global or generally applicable lessons from studies that are – necessarily and appropriately – place-based and embedded in a local context.
4. For stakeholders from multiple backgrounds to work together, conceptual frameworks should be developed to promote integration. These can only be achieved when all actors communicate clearly. All the above points also call for a change in institutional culture.

5. There is a need for **longer-term, innovative funding** to facilitate transdisciplinary research which requires action at multiple levels from local to international. These new funding models need to be tested urgently.
6. **Donor drive agendas driving research were mentioned as a challenge** in trying to establish a truly transdisciplinary and cross-SDG approach. Suggestions to raise funds included exploring the local level and community-driven funding to more private funding including from businesses, philanthropy and faith-based organizations. Approaches to blended finance for mission-oriented science need to be studied and tested in the African context.
7. **Examples** of work approaching the concepts discussed in national contexts were provided. For example, in Ghana, the Research-Extension Linkage Committees (RELCs) identify specific agricultural problems in a particular region of the country, and they mobilize the scientific capabilities, and stakeholder commitments to solve the problem. The model is contextually focused, multi-stakeholder-driven and trans-disciplinary. However, a major challenge has been the dependence on siloed donor funding. It was a World Bank project at the Directorate of Agricultural Extension Services of the Ministry of Food and Agriculture that gave birth to the RELCs. Subsequently, the operations of the RELCs have been linked to specific limited projects.
8. A suggestion was made to bring together African skills from complementary scientific profiles to form scientific trans-disciplinarity around research themes concerning the SDGs. This grouping could take many forms, such as an “African network”, or “associated African laboratories” within the framework of a multi-country partnership. It was also suggested to establish joint Public-Private research structures where research projects carried out by young researchers will be incubated with the aim of ensuring the entrepreneurial spirit and promoting innovation. These approaches are close to the proposed model of the regional sustainability hubs in goals and principles.
9. It was mentioned that a strong voice (or voices) from the African context to champion action for local impact using STI for SDGs is needed to drive forward the agenda. Participants of the Workshop are encouraged to engage with their respective authorities for greater commitment from governments and the institutions.
10. A key principle in going forward with the Coalition on Science, Technology, and Innovation for Africa’s Development, should be fostering research and innovation that address specific contextual problems ranging from problems at the local communities, regions or states of the countries, sub-regions of the continent and at the continental level. How to ensure context-specificity is a complex challenge that must be properly analysed and addressed.
11. Other partners called for establishing the regional sustainability hubs in Africa which would require building effective networks with various stakeholders to co-define key issues, co-design actionable research agendas and co-implement solutions.
12. It was proposed to have a meeting in January 2024 between the Future Africa-ISC and DESA/ECA to discuss the parameters of supporting the Coalition, building on existing work on Technology Facilitation Mechanism and STI roadmap, possibly through the technical committee.