THIRD ISC GENERAL ASSEMBLY

Muscat, Oman 2025

Final Report from Future Africa on a Scoping and Mapping exercise for the ISC

Document 12d

This is the final report from Future Africa on a scoping and mapping project conducted for the ISC in 2023–2024. It replaces the progress report shared with the General Assembly in November 2024.

For noting

International Science Council

وزارة التعليم العالي
و البحث العلمي والابتكار
Ministry of Higher Education
Research & Innovation

Scoping and mapping exercise to determine the role and institutional presence of the International Science Council (ISC) in Africa

Report submitted by Future Africa at the University of Pretoria

January 2025

Contents

Summary

The essential purpose of the 2-year (2023-2024) collaborative scoping and mapping project between Future Africa at the University of Pretoria and the International Science Council (ISC) was to facilitate a pan-African consultative process of ISC members and the broader grouping of STI ecosystem stakeholders on the continent and make informed recommendations on the ISC's institutional presence in Africa.

- The workplan for the project included:
    - 3 consultative workshops with leadership representatives of African academies, universities, funders, and science policy makers and experts during the Future Africa's Africa Week in May 2023, and 2 events on the margins of Science Forum South Africa (SFSA) in December 2023 and 2024, respectively.
    - A comprehensive stakeholder mapping exercise of the broader African STI landscape.
    - A survey of African ISC members (23 of the 40 members responded to the survey)
    - 30 in-depth interviews with representatives of key STI stakeholders on the continent.
- Key outcomes emerging from the 2-year consultative process include:
    - Absence of Expressions of Interests from Africa to host the Regional Focal Points (RFPs) for the ISC after the partnership with the South African Department of Science and Innovation ended in 2021.
    - The consultations indicate that this apathy is partly linked to a combination of factors linked to the uncertainty on the required role and impact of an ISC ROA, as well as resource constraints and the fragmented nature of African science.
    - African science stakeholders have noted that the challenges in establishing an ISC institutional presence in Africa highlights the need to reframe the value proposition of African science and reflect on more transformative partnerships between the continent and the global science system.
    - This is also informed by the continued interest in more equitable science partnerships with Africa by the global community – as illustrated by several collaborative initiatives in recent years.
- Two recommendations are made from these outcomes:
    - The first, is the establishment of an African STI Leaders' (ASTIL) Forum to collectively strengthen African science so that it can advocate for its agenda in the global arena based on its needs and interests. Following extensive consultations, there is a general agreement that the Forum should go ahead and be launched in early 2025. The pan-African platform will be led by a group of core African STI organisations which will engage with the ISC and other

regional and international organisations to determine their role. In the first 3 years of the Forum the key priority issue will be *funding STI in and for Africa*. Such a Forum would be beneficial to the ISC by opening opportunities for a new membership base, providing the ISC with insight into African agendas and priorities, and demonstrating the ISC's constructive collaborations to strengthen and develop African science.

- The second, is the appointment of an ISC Regional Coordinator for Africa. The Coordinator will have the responsibility of coordinating ISC activities and opportunities, and being the interface with the African members to ensure their voices and interests are taken into account by ISC decision making bodies. It is proposed that the Coordinator be appointed through an open call/competitive process as a member of the ISC headquarters team, but hosted by an African institution. The Coordinator will have the opportunity to represent the ISC in the ASTIL Forum – ensuring the ISC's intrests are taken into account.

1. Background introduction:

1.1: ISC Regional Office in Africa (ROA)

The International Science Council Regional Office in Africa (ISC ROA)[1] funded by the South African Department of Science and Innovation was officially inagurated on 1 September 2005 with a composition of 3-5 staff members during its operational phase. For the first 10 years until 2015, the ISC ROA (ICSU ROA as it was called until 2018) was hosted by the National Research Foundation (NRF) of South Africa, and from May 2015 by the Academy of Sciences of South Africa (ASSAf) until its closure in 2021. The renaming of the ICSU-ROA into the ISC-ROA, following the ISSC and ICSU merger is strategically aligned to the ISC Action Plan (2019-2021) which focused on promoting the ISC as a trusted and recognized global voice for science in all the major regions of the world. Together with the other regional offices in a Latin America, and Asia-Pacific, the ISC Action Plan proposed the regional offices to work towards:

- Taking the lead in collaborating with partners in the delivery of certain activities or initiatives identified in the Action Plan for the ISC
- Supporting, where possible and as appropriate, the work of ISC-sponsored programmes in the regions and ensuring membership participation and engagement in the regions.
- Working with the ISC headquarters to ensure broad dissemination of information about the ISC and activities in the regions, taking the lead in adapting/translating some of those products for increased diffusion and impact.
- Supporting the Council's fundraising efforts, including for those activities that they are leading on behalf of the Council.
- Working to expand ISC membership.
- Following science and policy developments relevant to the ISC mission and proposing ways to the ISC headquarters or governing board to engage with them; identifying opportunities for the ISC and communicating them to the headquarters or the governing board.
- Exploring modes of engagement with relevant regional policy processes (UN Regional Commissions, AU, RECs, etc.), and with guidance from the Board, seeking accreditation.

The main budget contribution for running the ISC ROA came from the Department of Science and Innovation (DSI) in South Africa through the host institutions – NRF and ASSAf - and with additional annual contributions from the International Science Council (ISC) headquaters (see figure 1 and 2 below). Cumulatively, the ISC ROA received ZAR 77 million (approximately USD 4 million)) from the South African Department of Science and

[1] Prior to the merger of the Internationa Social Science Council (ISSC) and the International Council of Science (ICSU) to form the International Science Council (ISC) in 2018, the ISC ROA was part of ICSU and was called ICSU-ROA.

Innovation, and ZAR 29 million (approximately USD 1.5 million) from the ISC and other external sources over a period of 16 years from 2005 until 2021.

Figure 1: Funding allocation from the South African DSI through the NRF and ASSAf (2005-2021) Source: ISC ROA Legacy Report, 2022

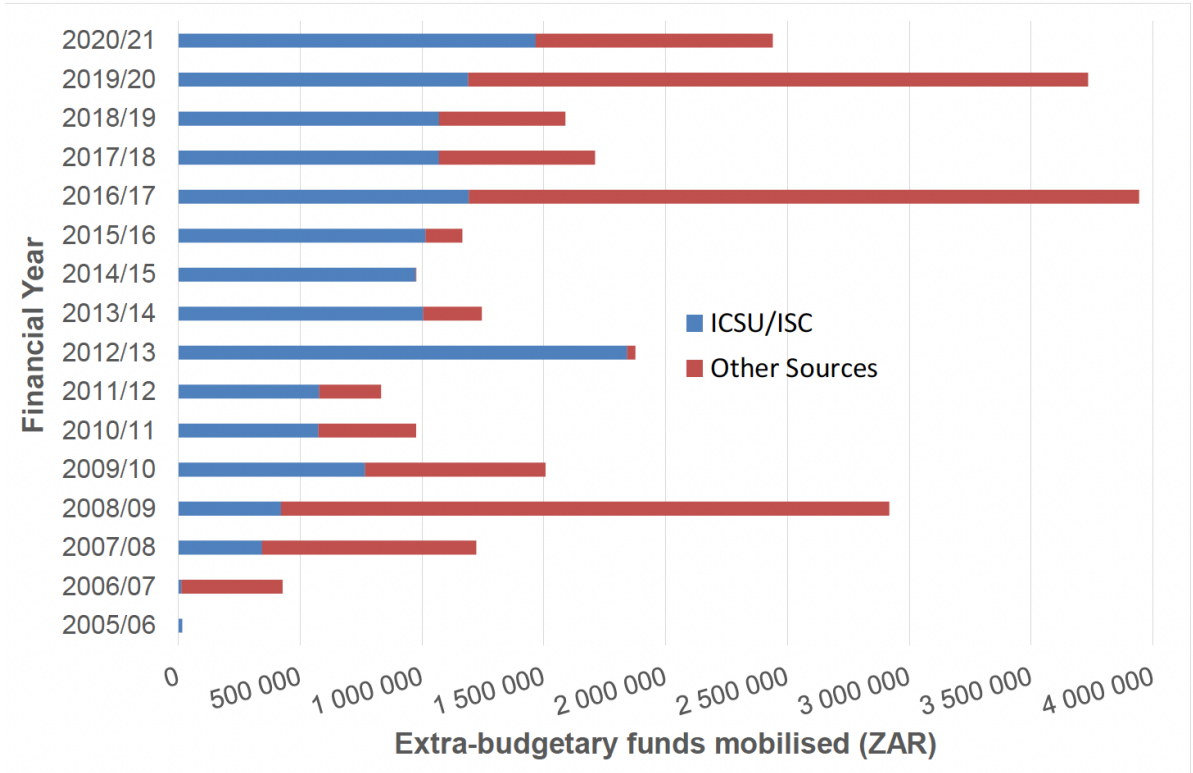

Figure 2: Funding contributions from the ISC and other external sources (2005-2021). Source: ISC ROA Legacy Report, 2022

Over the years the ISC ROA Office was operational, it made significant contributions to the science ecosystem on the continent which included (ISC ROA Legacy Report, 2022):

- Contributions to regional processes and strategies on STI, for example, being invited by the African Union Development Agency (AUDA) to partner and co-lead the development of the Consolidated Action Plan for African Science and Technology.
- ISC ROA Science Plans: To support the operationalisation and implementation of regional plans such as STISA 2024 and the Agenda 2030, the ISC ROA produced 4 Science Plans for Sub-Saharan Africa covering the following themes: Global Environmental Change, Health and Human Wellbeing, Sustianable Energy, and Natural and Human Induced Hazards and Disasters.
- Support implementation of the ISC regional and global activities, including the ICSU grants programme to support science unions, and the coordination of the Leading Integrated Research for Agenda 20230 (LIRA 2030) initiative which sought to increase production of high quality, inter and transdisciplinary research on global sustainability by early career researchers in Africa. The ROA was also instrumental in setting up the African Future Earth Committee (AFEC) which facilitated the establishment of the Future Earth Regional Office for Southern African (FEROSA). The ROA also acted as the secretariat for the International Network for Government Science Advice (INGSA) – Africa Chapter.
- Strengthening science and capacity building by establishing the Africa Scientist Directory and initiating a book series which led to the publication of 5 edited volumes.
- ISC membership engagement: ROA increased the visibility of the ISC both in government and science institutions on the continent. Partly as a result of these engagements the membership of African countries in the ISC markedly grew from 16 in 2005 to 29 in 2020 (26 national members and 3 associate members).

1.2: ISC ROA closure and follow-up Regional Focal Points (RFPs) call

In 2021 the ISC ROA was closed following the termination of the agreement with the South African Department of Science and Innovation. After the termination of the agreement and the publication of the ISC's first Action Plan (2019-2021) which included a new vision for increasing the ISC's reach and relevance in different parts of the world, the ISC issued a call for Expressions of Interests to host Regional Focal Points (RFPs) in Africa, as well as Latin American and the Carribean and the Asia-Pacific. The RFPs were to function as integral parts of what was envisaged as an expanded and distributed ISC global secretariat, headquatered in Paris, France.

In the case of Africa – and despite targeted outreach to ISC members on the continent – no expressions of interest were submitted. This may well have been due to a combination of factors, including new national priorities and resource constraints in the context of a

global pandemic, as well as a lack of clarity about the ISC's expectations and associated operational modalities for what, at that time, were called ISC Branches or Champions. The absence of a persuasive value proposition of an Africa RFP for Africa may also have played a role in the non-response.

1.3: The FA-ISC collaborative project

The absence of expressions of interests from Africa implied that more work needed to be done in understanding the interests and needs for, as well as opportunities and challenges of establishing an ISC institutional presence in and for Africa, by Africa. Therefore, instead of pursuing the original goal of establishing a RFP in Africa, in December 2022 the ISC and Future Africa (FA) at the University of Pretoria signed an agreement to collectively convene a consortium of African partners to lead a 2-year (2023-2024) pan-African scoping and development process aimed at identfying the need for and the ideal nature of a longer-term ISC role and related institutional presence on the African continent. The unique value that FA brought to this partnership, both for the ISC and the African ISC members is outlined below:

Value proposition to the ISC:

- Access to Future Africa networks, both pan-African and relevant global networks.
- Knowledge of African science systems and access to key system decision-makers.
- Office space and facilities, including meeting / collaborative venues at FA
- Financial accountability
- Access to relevant capacities to support the work proposed

Value proposition to existing African ISC members:

- The possibility to expand their own pan-African and global networks, for example, through meetings with stakeholders on the continent
- To have influence in ISC development and strategy that is relevant to Africa
- To be part of the conceptualization of a global platform for African science

1.4: Approach and methods used in the scoping and mapping exercise

As part of the FA-ISC agreement, Future Africa was appointed to host, with the ISC's financial support, a small, dedicated team with the responsibility of managing and coordinating the scoping and development process. (see appendix 1 for a list of the FA Task Team). This task team regularly engaged and consulted with the ISC Secretariat regarding the project implementation.

To support the implementation of the scoping and development process, a 11-member steering committee was appointed, composed of representatives of African ISC member organizations and regional scientific organizations. (refer Appendix 2 for list of the steering committee members). In particular, the steering committee had the key

responsibility of guiding the FA Task Team and overseeing the project implementation process. To fulfill these responsibilities the steering committee met 4 times virtually and twice in-person during the consultative meetings which were held during the Science Forum South Africa (SFSA) in 2023 and 2024. The steering committee was chaired by an ISC fellow who engaged with and reported to the ISC Governing Board on behalf of the project as a whole.

As part of the 2-year collaborative initiative, the following workplan was agreed:

(a) Comprehensive stakeholder mapping: The stakeholder mapping work began in June 2023 and was completed in November 2023. The stakeholder mapping exercise intended to provide an overview of the state of African science, focusing on the multiplicity of stakeholders, their activities, and networks. The project team mapped 233 stakeholders on the continent.

(b) Open consultation: Three consultative meetings were held to engage stakeholders in the broader African science ecosystem. The first consultative workshop was conducted by the project team on the 23rd of May, during Africa Week 2023 at the Future Africa Campus. The 2-hour consultative meeting engaged the participants on priorities and the ideal approach for the 2-year ISC-Future Africa collaborative initiative. The second and third consultative workshops were held as side events for the the Science Forum South Africa (SFSA) in 2023 and 2024. The first SFSA consultative side event 2023 which had 70 participants from the African science ecosystem focused on capturing the priorities, challenges and opportunities on the continent, as well as discussing proposals for the ISC's institutional presence in Africa. The second SFSA consultative meeting in December 2024 focused on sharing insights and findings from the 2-year scoping process and the proposal to establish an African STI Leaders Forum.

(c) Communication and outreach (including survey): In May 2023 at the mid-term meeting of ISC members, the FA Task team participated in a panel discussion on regional ISC presence around the world. This engagement served as an introduction to the Africa scoping project for the wider ISC community and allowed for networking with African members and others interested in the work for the project team. The project also published a news update in November 2023 on both the ISC and Future Africa website outlining the project goals and a call to action for all the African science ecosystem partners to share their insights and perspectives in shaping the future of African science through a survey. The survey was mostly targeted at ISC members from the African continent (in total 23 organisational representatives responded to the survey, that is, over 56% of the 40 ISC members in Africa). In addition to the survey, the FA Task Team hosted plenary sessions at key strategic conferences and gatherings of African science ecosystem stakeholders to engage with stakeholders on their perspectives on African science and how it can be strengthened. These included:

- Discussion with UNDESA team leading the STI for SDGs initiatives, including the African STI Coalition (February 2024).
- Contributions in a UN plenary session and a side event during the STI Forum in New York in May 2024
- Contributions in a plenary session during INGSA's conference in Rwanda in May 2024
- Contributions during 2 UNECA workshops in Addis Ababa in October 2023 and 2024.
- Contributions in plenary session during the Canadian Science Policy Conference in November 2024.

(d) Interviews: A total of 30 virtual interviews with science ecosystem leaders or those working on the continent representing key science organizations were conducted between August and October 2024.

2. Findings

The findings in this section reflect the perceptions and reflections on the state of African science and role of the ISC in Africa by the multitude of stakeholders that participated in the consultations including, the survey and interviews. Therefore, these perceptions are important in formulating recommendations for the way forward for the ISC in Africa. were not fact checked or corroboratd with existing literature.

2.1: Perceptions on the state of African science

2.1.1: Key functions and activities of African science organisations

KEY FINDING 1: Increasing focus on the role of science in societal development

As illustrated in figire 3 below, there is an increased focus by a significant number of organisations on the role of science in advancing societal (sustainable) development. This reflects current debates on the appropirate place of science in society. This not only because of the many contexts in which scientists and non-scientists interact, e.g, in policy advice, science communication, or stakeholder encounters within research processes. Due to these interactions and expectations, many organisations – including science funders - have in recent years started to reframe their missions and priorities to focus on their contributions to society, instead of only basic research – in some instances this is a result of political and public pressure.

Figure 3: Mapping of the key missions and priorities of the scince stakeholders.

KEY FINDING 2: Some variation in level of activity between ISC and non-ISC members

As outlined in figure 4, 5 and 6, it is evident that ISC members in Africa tend to engage in more activities than other non-ISC members on the continent. This is partly because most of the ISC members are the most recognised and established science organisations on the continent which attract signficant funding. As a result, they tend to have a wider portfolio of activities. More so, some of the other non-ISC members have narrow mandates.

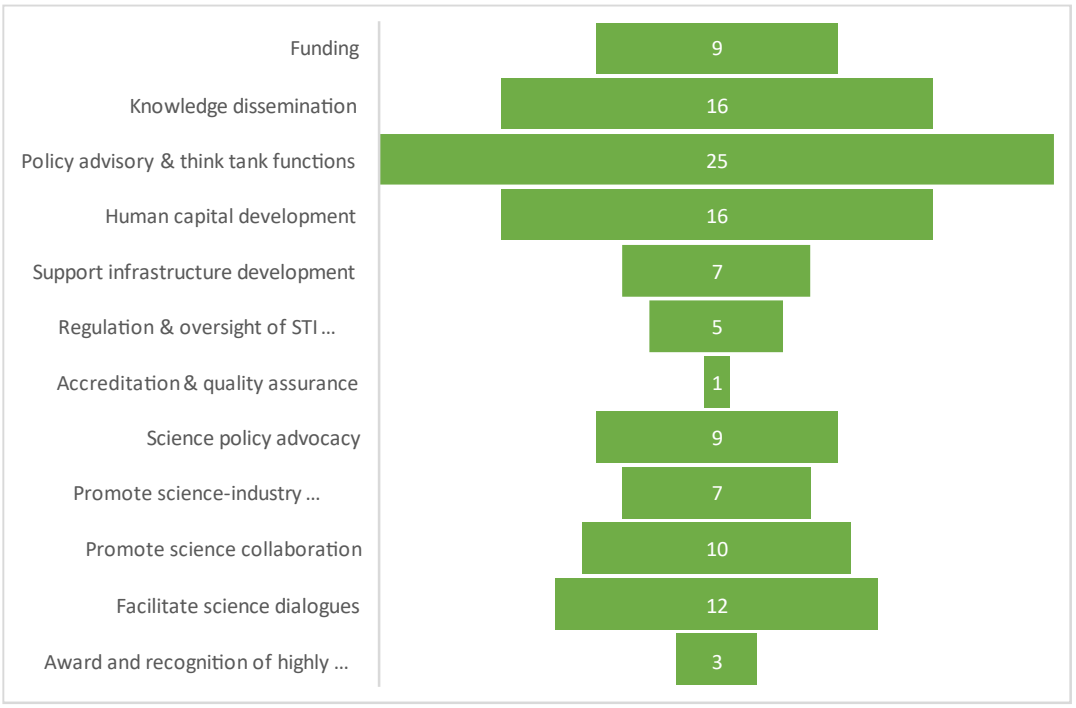

Figure 4: ISC member Academies core activities

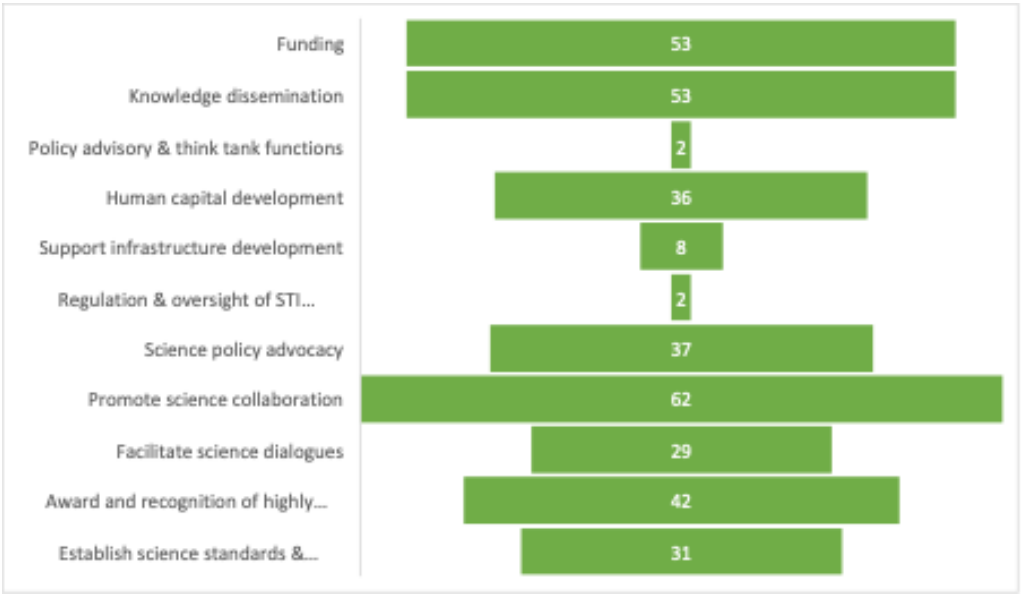

Figure 5: Activities of ISC unions/associations

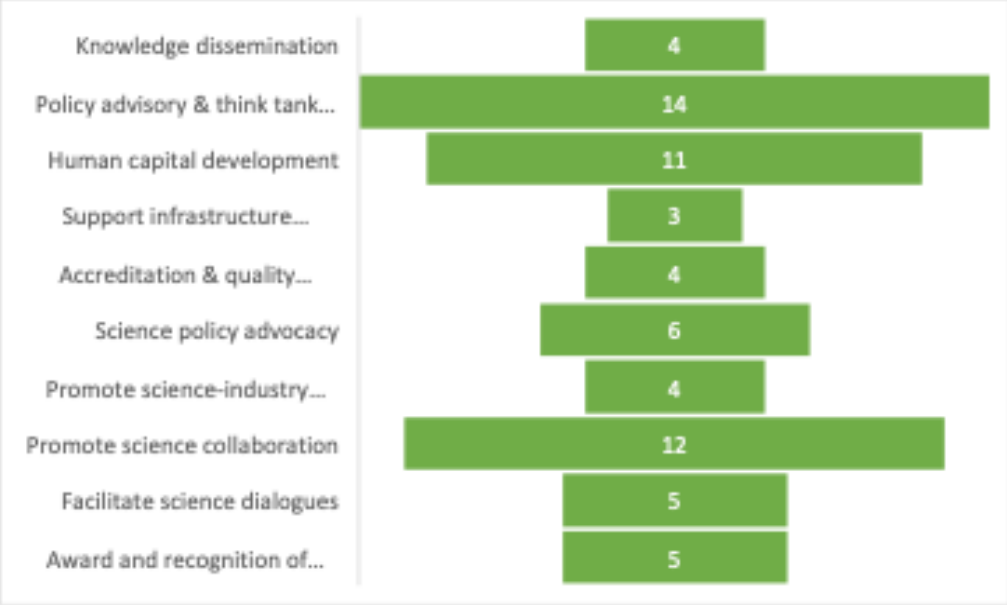

Figure 6: Activities of other science organisations (non-ISC members)

Despite the variations in the substantive number of activities, it seems most organisations are predominantly engaged in policy support, human capacity development and promotion of science collaboration. There is evidence that international unions headquartered outside of Africa but with a presence on the continent seem to provide more funding opportunities (e.g., fellowships and collaborations) than most of the African based organisations. This reflects the limited R&D funding emanating from within the continent, with most African institutions relying on external global north financial support. As a result, unlike African organisations, international organisations have more responsibility in setting norms and standards in the science ecosystem.

KEY FINDING 3: Low levels of intra-Africa collaborations

The consultations from many African stakeholders reveald that the density of pan-African collaborations in Africa is very low. This is possibly a result of limited funding on the continent. Nevertheless, many respondents during the consultations noted that intra-African collaboration is essential to addressing many of the interconnected challenges on the continent related to the limited power and voice of Africans in collectively shaping their own science agendas and influencing the global science policy arena. Beyond this, intra-Africa collaboration has significant value in leveraging shared resources and expertise to tackle common challenges on the continent such as health, climate change and food security. More so, building a unified African science ecosystem can enhance

the continent's global competitiveness and innovation capacity, reducing reliance on external funding and influence. Fostering partnerships among African nations can also promote knowledge exchange, strengthen local capacities, and create a more resilient and self-sufficient scientific community.

2.1.2: 'Voices' in the African science ecosystem

KEY FINDING 4: Dominance of global north partners in setting African science agendas and related priorities.

In the past 3 decades there is growing recognition of the transformative potential of African sciences in shaping global science agendas and addressing global challenges. To illustrate this, many respondents highlighted the steady increase of African 'hubs' of international initiatives on the continent, for example, the UN Regional Hub for Big Data for Africa in Rwanda, the African Open Science Platform (AOSP) and the African Future Earth Global Secretariat Hub, both hosted by the National Research Foundation (NRF) in South Africa.

With limited domestic investment and continued dependence on external or foreign funding for African science, many express concerns that this has also disempowered African countries from driving the STI agendas as the external funders have more influence in shaping the priorities of African science. As a result, several respondents indicated that a priority for Africa should be to reduce the dependence on the global north for funding, thereby creating greater autonomy in setting science agendas. This requires, in part, a shift to a distributed science funding model where African governments, African philantroprists, the private sector – which has not contributed recognisable funding to R&D, research-performing institutions, and knowledge networks to collectively share the costs of funding science and research on the continent.

To reduce the influence of global north funders and partners, other African stakeholders also argued for Africa to 'negotiate better collectively as a bloc to identify and voice African science priorities'. This is particularly important as there is a growing recognition of the expertise available among African scientists – challenging previous biases that underestimated their capabilities. Within this context, our consultations revealed that many African researchers are increasingly negotiating terms around intellectual property rights, ensuring their ownership of research outputs remains with them rather than solely with global north funders. In recent years, these discussions have prompted a movement towards establishing mutually benefical partnerships that prioritize the interests of African scientists, fostering equitable and sustainable partnerships that enhance local research capacity whilst adressing global challenges.

KEY FINDING 5: Dominance of certain African countries in the science ecosystem

There is a strong perception amongst many stakeholders that a few countries, predominatly South Africa, as well as, Kenya, Nigeria, Rwanda, and Egypt mostly dominate the science policy discourse on the continent. These are generally the largest economies on the continent which reflects their dominance. On other hand, many francophone and lusophone countries are not very visible in science-policy discourse nor are they key beneficiaries of opportunities on the continent. In recognising the leading role that countries such as South Africa play in science policy and capacity development initiatives, there was a strong suggestion that they should share their resources and expertise more effectively across the continent to build collaborative networks that benefit as many African countries. More so, this leading bloc of countries should foster more inclusive approaches by actively engaging other African nations in decision making processes.

Even though its important to ensuring a 'unified' African voice, some respondents noted the need for diverse voices in discussions about African unity. They argued that a narrow focus on inclusivity and having a 'unified voice' for Africa could overlook the continent's diversity – that is, not recognising the unique cultural, social and political contexts of its various regions. Others also noted that emphasizing unity can marginalize minority voices and at times inadvertently reinforce colonial frameworks of power and governance, which often prioritize hegemony over the celebration of multifacted identities. Therefore, the focus should be on creating spaces for all voices to be heard, fostering genuine dialogue and collaborations across different communities and disciplines. This entails that decolonising science is not only about challenging dominant western epistomologies, but also having African centred perspectives that recognize the diversity of experiences and voices on the continent. This ultimately means not imposing a singular narrative about what it means to be African.

KEY FINDING 6: Missing voice of the youth in African science

Many respondents argued that despite having the largest youth population in the world, many African youths are not aware and sufficiently engaged in scientific discussions and decision making processes, at both national and continental levels. The involvement of the youth, including early career researchers and young scientists was noted as important because they foster innovation and creativity, allowing fresh perspectives to address contemporary challenges such as climate change and social justice. Involving young scholars also promotes inclusivity and diversity in scientific discourse, ensuring that a broader range of ideas and solutions are considered in addressing global issues.

To ensure the effective participation of young scholars and harness their passion and energy several suggestions were made including;

- Providing mentorship and networking opportunities to empower them and ensure their voices are heard in academic and policy making processes.
- Providing material support (e.g., travel to meetings and conferences) to participate in scientific engagements.
- Develop greater understanding of the circumstances they face as young professionals – not only focusing on their careers.

KEY FINDING 7: Missing voice of indigenous local communities in scientific discourse and practice

The consultations also revealed concerns that indigenous knowledge systems and communities were often marginalised within Western scientific methods, leading to a lack of recognition for their value and relevance. This often limits the diversity of perspectives in scientific discourse, undermining the potential for collaborative and inclusive knowledge generation to address contemporary global challenges. This was of significant concern because indigenous ways of knowing emphasize community-based practices and holistic approaches which can offer sustainable solutions to environmental and social challenges. Several respondents also argued that for African scholars, the exclusion of indigenous knowledge sources could impose psychological barriers which discourage young researchers from pursuing innovative ideas, as they may feel their contributions are undervalued or irrelevant.

Due to these concerns there were several suggestions to enhance to credibility and integration of indigenous science and the perspectives of indigenous communities in science through transdisciplinarity. This focus fosters respect for diverse contributions and promotes equitable collaboration in research and development. These included:

- Integrating mother tongue languages in accessing knowledge. Mother longue languages facilitate better understanding and retention of knowledge, allowing individuals to engage more deeply with content. They also enable effective communication and expression of ideas, particularly in culturally relevant contexts, enhancing participation in science-policy dialogues and interventions.
- Encouraging collaboration between scientists and local communities. Indigenous knowledge holders possess valuable insights and practices that have been developed over generations, which can significantly contribute to sustainable solutions in various fields. Community representatives can also bridge the gap between scientific research and local realities, ensuring that scientific endeavors are relevant and beneficial to the communities they affect.

KEY FINDING 8: The diaspora as an important voice in African science

The diaspora seems to be considered by many as being an important part of the African science ecosystem. They noted that the diaspora is a critical resource – in terms of

expertise, access to networks, funding, and mentorship. However, leveraging on the diaspora as a resource is not straightfoward. For example, there were arguments that diaspora experts tend to hold Western epistemologies and leveraging on their expertise could result in the imposition of these epistemologies.

2.1.3: Challenges in the African science ecosystem

KEY FINDING 9: Consitent funding constraints for African science

Funding for science has been recognised as a persitent challenge in African science as both national governments and other non-state actors such as the private sector have continually contributed very little in terms of R&D. As discussed above, this means that African science continues to rely heavily on external sources of funding, mostly from the global north. The combined effect of diminished GERD and BERD contributions domestically and the reliance on external funding from the global north has significant implications for African science. The inconsitent and unreliable funding limits research organisations' capacity for consitent operations and long-term planning which leads to variability in the quality and continuity of projects. The situation is dire for science organisations in conflict zones, and those experiencing political instability and conditions of national polycrises. In many of these contexts, the STI governance systems have collapsed, and fully reliant on global north funding.

Where global north funding is available, it is mostly discipline oriented (particularly, health) despite the shifts to interdisciplinarity in recent years. As a result, many research institutions are still working in siloes with limited collaboration – exacerbating the duplication of efforts and competition for limited resources. Many respondents were pessimistic about the possibility of collaborative efforts because of the self-interests of countries and organisations. Even at the African Union level, there is no dedicated fund for STI to support the implementation of STISA.

KEY FINDING 10: Absence of coherent national and regional STI governance infrastructure

With the exception of selected countries such as South Africa, many African countries do not have coherent STI policies, defined systems of innovation and/or science ecosystems. This often tends to hinder innovation and development. More so, this not only has negative implications for the functioning of these 'systems', it also undemines their ability to thrive (locally and globally), and have positive societal impact, as well as source funding from prspective funders or international partners. The lack of coherent policies often results in fragmented approaches to research and developmet, limiting collaboration and resource allocation. Without clear policy guidelines and frameworks, countries face challenges in addressing local needs and leveraging scientific

advancements for sustainable growth. Even though the science stakeholders recognised the importance of coherent policies, many respondents noted the difficulty in convincing decision makers of the importance of STI and the need for supportive policies and financing mechanisms. In countries such as Sudan, the absence of an ideal institutional space and regulatory framework due to political instability restricted the establishment of start-ups and commercialisation of research outputs.

At both the regional and national levels, while there are a fair number of organisations, networks, and platforms for connecting scientists and academics in particular disciplinary or interdisciplinary fields, there is little in the way of organisational or community support for the more meta perspectives associated with STI policy, systems, governance, and resourcing (human, financial, infrastructure, etc.) and their coordination.

2.1.4: Key opportunities in the African science ecosystem

KEY FINDING 11: Existing pan-African platforms to leverage on to develop and strengthen African science systems.

There is a general desire amongst many Africa stakeholders for the ecosystem to be more *self-organising* through various pan-African platforms, as opposed to being organised outside the continent. To faciltate this self-organisation there is a recognition of the need to further develop and refine appropriate mechanisms and process on the continent. The Science Granting Councils Initiative (SGCI) was referenced by several respondents as being a model of such self-organising in partnership with the global north. As such, the SGCI mechanism could be leveraged, particularly on matters pertaining to funding for science on the continent.

Another platform linked to a global network that was referenced several times was the Global Research Council which provides a model for coordinated regional voices through structured meetings and collaborative initiatives. It enables member councils to collectively address regional issues and present unified responses to global challenges in research and funding. Another pan-African initiative mentioned was the OR Tambo research chairs supported by the National Research Foundation (NRF) in South Africa to enhance research capacity across the continent through the 10 research chairs across various interdisciplinary fields in 7 African countries.

These pan-African platforms can also be leveraged to:

- Build collaboration networks and for strengthening science policy, governance, management capacity (meta functions).
- Make important contributions to build and maintain intra-African partnerships.

- Provide a platform for sharing best practices and resources, including, fostering a more coordinated approach to funding scientific research across the continent (e.g., the SGCI has been able to leverage funding through collaborations such as the Africa-Japan Cooperation program).

2.2: Reflections on the value of the ISC in Africa

2.2.1: ISC value proposition in Africa

FINDING 12: Benefits of the ISC to its members
A sizeable number of the respondents who are ISC members articulated positive responses on the benefits of being ISC members, characterising the ISC head office as 'friendly, accomodating, responsive and supportive'. Some of the noted benefits include:

- Platform to connect with the global science community. Several respondents noted that membership of the ISC enabled them to 'become part of the global voice of science' which has enabled them to connect with a broader network of scientists and institutions, fostering collaborative initiatives and research opportunities.
- The participation in various international forums and workshops supported or linked to the ISC has enabled several African scientists and organisations to enhance their visibility and engagement.
- Technical advice provided to African countries on various science related issues.
- ISC maintains a database of scientists to facilitate collaboration (however, this was reportedly not very useful, especially for African scientists to find one another).
- ISC sometimes provides financial support to members (e.g., attend annual general assembly meetings, host national events).
- The relationship with the ISC has evolved to emphasize the importance of social sciences alongside traditional sciences, broadening the definition of what constitutes science within the African context.

2.2.2: Challenges related to the ISC's presence and engagement with Africa

FINDING 13: Perceived global north domination
The ISC is generally perceived as peripheral in African science ecosystem due to African researchers' and organisations' disconnection from the ISC's governance structures, limiting their influence in global science discussions. A more cynical view taken by some respondents was that if the ISC is to take African science bodies seriosuly, then its voices must be heard – which seems to not be the case from the consultations. One person argued that "inviting Africans on board does not make the ISC a 'global voice for science'". Another referred to the participation of African scientists/science in bodies such as the ISC can amount to 'tokenism'. Whilst there were prominent African scientists who represented Africa on the ISC governing board, some respondents argued that these representatives were already part of a dominant voice in science and their experiences

and perspectives were not inclusive and reflective of the 'unheard' voices in science. Therefore, a more balanced approach which adopts both top-down and bottom up approaches is required to capture the many voices in African science in global platforms such as the ISC.

The sentiments about the ISC seems to also reflect the general sentiments of the African science systems within the global arena. There is a general perception that African institutions are increasingly marginalized in global science discourse, impacting their ability to influence science policy and collaborations on the continent. Therefore, there is a need for a stronger institutional presence of the ISC in Africa to ensure that African voices are included in global science discussions. Within the context of these discussion some respondents suggested reforming the ISC voting system to ensure equitable representation and participation from all members, regardless of funding levels.

FINDING 14: Negative effects from the closure of ISC ROA
There are strong indications that the relationship between African members and the ISC has diminished since the closure of its regional office in Africa. The respondents noted that the lack of a dedicated regional office has resulted in diminished communication and support for African scientists and institutions.

Whilst some members recognised the convening power and networking opportunities as an ISC member, many African members interviewed often found it difficult to identify tangible benefits or outcomes from their participation. Many suggested that the ISC needs to provide a clear articulation of how it can support African science priorities and enhance collaboration amongst members beyond the convenings and virtual workshops. To a large extent, these issues are compounded by the closure of the ISC ROA which had some responsibilities of coordinating and supporting collaborative ISC activities amongst the members on the continent. As a result, it seems that the sense of value proposition of the ISC to Africa is either unknown or limited or non-existant as there are limited tangible benefits beyond the convenings. A number of respondents (especially those from organisations that were not yet members of the ISC) were also unclear about the ISC's mandate or role in Africa. These reflections and assessments are mostly linked to the limited funding opportunities for science on the continent for which many members and stakeholders expect the ISC to bridge. As such, value is largely being assessed based on the ability of the ISC to provide support for collaborative activities by members on the continent – a role which was partly filled by the ISC ROA.

Furthermore, in recent years the ISC headquaters has strengthened its capacity and absorbed many of the responsibilities of the Regional Focal Point or regional office. Therefore, whilst there is continual virtual communication with African members, the interaction, particularly amongst the African members is very limited and not visible to provide a tangible value. This partly perpetuates the perception that Africans have less power and voices to shape their agendas and priorities which are being driven from outside, mostly the global north.

FINDING 15: Lack of coordinated approach in engaging the ISC

Since the closure of the ISC ROA there has been no coordinated approach from the continent in engaging with the ISC. Many African researchers and institutions often engage the ISC individually – leading to a more 'transactional' relationship with African members. This has also led to a fragmented representation and missed opportunities for collective action amongst African members in the ISC. Existing networks and unions often operate in silos, limiting collaboration across disciplines and hindering the development of a cohesive African scientific identity within ISC.

3. Recommendations

In developing recommendations that reflect the concerns and insights gathered during the project and that meet the ISC's needs and interests, the question to be answered is not only what Africa can contribute in the global science arena through organizations such as the ISC, but what Africa needs from that arena and from these organizations.

Two related recommendations emerge from this challenge, namely for the ISC to:

- Support the further development of an African STI Leaders' (ASTIL) Forum and seek to become a Forum partner
- Appoint an ISC Regional Coordinator in Africa who could, amongst other things, represent the ISC in the ASTIL Forum.

Together, these recommended actions would provide a solid foundation for meeting the regional ambitions of the ISC as articulated in the Council's first Action Plan (see section 1, page 3). Each recommendation is set out in further detail below.

3.1: Recommendation 1: African Science, Technology and Innovation Leaders' (ASTIL) Forum

3.1.1: The need for a Forum: purpose and added value

In May 2024 the FA-ISC Task team presented the idea of an African STI Leaders (ASTIL) Forum following consultations in 2023. Following further consultations in 2024 which culminated in a workshop with leaders of the key STI organisations on the continent on the sidelines of the Science Forum South Africa (SFSA) in December 2024, there was an agreement to go ahead with the idea of formally establishing the ASTIL Forum. As such, there is consensus for the Forum to be formally launched in early 2025.

As a pan-African platform, the ASTIL Forum intends to address many of the issues raised in this report, including the need for a common vision for STI in Africa, the persistently limited domestic investment in research and development by African governments and industry, the accompanying reliance on and degree of competition for foreign sources of funding, power dynamics inherent in regional and international scientific and funding partnerships, the fragmentation of collaborative research and broader STI development interventions on the continent, and the ambition to increase Africa's visibility and influence in global STI policy arenas.

These issues are often discussed, but rarely across all sectors that comprise the broader African STI ecosystem and even more rarely by leading decision makers representing those sectors. Therefore, the scope of the Forum will be broadened to focus on issues beyond science by including related issues of Technology and Innovation. The added value of the Forum would lie in changing the fragmented nature of the STI landscape in Africa by bringing the continent's STI leadership together to exchange information,

catalyse innovative thinking, mobilise advocacy, and foster collaborative action. In this way, the Forum will serve to promote the development and deployment of a unified African voice for science, one that is both effective in advancing STI across the continent and influential in global STI policy dialogues and action.

3.1.2: Priority focus: Funding STI in and for Africa

It is intended that the first three years of the Forum would focus on addressing the issues related to funding STI in and for Africa, and thereafter expanding to other priority STI policy issues. This is because many of the challenges and complexities in the African science ecosystem discussed in this report are predominantly shaped by the enduring challenge of funding. The African Union (AU) continues to advocate for a target investment of 1% of GDP yet, due to national budgetary constraints and competing political priorities, most countries on the continent have not yet met this benchmark.

The funding issue is complex, involving multiple actors and multiple dimensions. Each of the latter involves decision points that, together, determine the efficacy of the allocation and management of resources for research, innovation and technology development. Addressing the issue of funding will have to take this complexity into full account, resulting in a programme of work that could include a range of collaborative activities, including for example:

- Futures visioning and anticipatory horizon scanning exercises aimed at articulating a shared vision for the role of STI in African societies, and identifying emergent challenges and opportunities.
- Strategy development and agenda-setting to identify priority STI interests and needs and viable pathways to funding STI activities that address them.
- Identification of STI funding data and knowledge gaps and mobilization of research resources.
- Engagement in relevant regional and global STI funding and policy fora, to provide advice, represent African interests and undertake appropriate advocacy work.

3.1.3: Composition: A network of networks

The ASTIL Forum is envisaged as a 'network of networks' of pan-African institutions which will bring together STI leaders representing important regional networks and key funding organizations in the broader African STI ecosystem. To ensure collective ownership from the continent and prioritization of African needs, the stakeholdrs participating in the consultative workshop in December 2024 collectively agreed that the core members of the Forum be leaders of key African STI organisations. After extensive engagements, the leadership of the following six leading pan-African STI organistions have agreed in principle to become the core founding Forum members:

- The group of African national funding agencies involved in the Science Granting Councils Initiative (SGCI), represented by:

    - Heads of a select group of Science Granting Councils (the nominated heads will be confirmed in due course)
    - CEO of the SA National Research Foundation, a SGCI funder
    - An African-based representative of the Advisory Panel
- Science for Africa Foundation (SAF), represented by:
    - Board Chair; or
    - Chief Executive Officer
- African Research Universities Alliance (ARUA), represented by:
    - Board Chair; or
    - Secretary General
- African Association of Universities (AAU), represented by:
    - Governing Board Chair; or
    - Secretary General
- African Academy of Sciences (AAS), represented by:
    - President; or
    - Executive Director
- Network of African Science Academies (NASAC), represented by:
    - President; or
    - Executive Director

It is proposed that decisions about additional Forum core members be deliberated and jointly agreed upon by the abovementioned core group.

- Additional Forum members, e.g.,
    - Domain-specific scientific networks such as the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), the Alliance for a Green Revolution in Africa (AGRA), the Future Earth Africa Hub, and the Council for the Development of Social Research in Africa (CODESRIA).
    - Other foundations such as the Mo Ibrahim Foundation and African philanthropists such as Aliko Dangote, Johann Rupert, Nicky Oppenheimer, the Sawiris brothers and Strive Masiyiwa.
    - STI-relevant government, industry and civil society groupings.
- Forum partners, e.g.,
    - International funders regarded as key stakeholders in the African STI landscape, including for e.g., the Canadian International Development Research Centre (IDRC), the Swedish International Development Cooperation Agency (Sida), Norwegian Agency for Development Cooperation (Norad) and foundations like the Bill and Melinda Gates Foundation, the Wellcome Trust, Carnegie Corporation of New York, Mastercard Foundation and the European Union.
    - Multilateral bodies like the African Union (AU), the UN Educational, Scientific and Cultural Organisation (UNESCO), the UN Department of Economic and

Social Affairs (UNDESA) the STI Coalition for Africa, the African Development Bank (AfDB) and the World Bank.

- International scientific organizations like the ISC, the International Association of Universities (IAU), the Worldwide Universities Network (WWU), the InterAcademy, World Academy of Sciences (TWAS) that have strong regional STI interests and networks.

3.1.4: The role of the ISC

As an important global science stakeholder with strong STI intrests and networks on the continent, the ISC will be amongst the international organisations which will be invited to become partners of the forum. To ensure that an African agenda and African voices shape the priorities of the Forum, the group of the core forum members will collectively deliberate on the role that the ISC and other international organisations will play. This role could include being a strategic partner(funding or implementation partners) for policy issues of mutual interests or providing an advisory role possibly through ISC fellows. As noted in the second recommendation below, the ISC could be represented in the ASTIL Forum by a Regional Coordinator. At the core, the involvement of the ISC will be informed by principles which ensure transformative and equitable partnerships that showcase African scientific strengths and global contributions and strengthen Africa's influence in global policy making, agenda setting.

Overall, the value of the African STI Forum to the ISC can be framed within the following benefits:

- Access to and increased visibility amongst pan-African STI networks and potential new members
- Opportunity to expand partnerships on the continent
- Access to insights on ky priority issues and developments in the African STI ecosystems
- Engagement with key STI decision makers and experts on the continent and opportunity to participate in shaping these developments.
- Access to relevant capacities on the continent to support other ISC activities.

3.1.5: Structure and operational mode

As the case with Forum's composition, its envisioned that its governance and management structure and operational mode will continually evolve. Decisions on longer-term arrangements would be addressed as part of the Forum's work in the initial start-up phase (2025-2027) and would lie in the hands of the founding Forum members.

For the initial start-up period of three years, the Forum will function as an informal, loosely connected and flexible network. Forum members, partners and advisors would come together for annual meetings and communicate regularly but operate

independently. Depending on work plans they will participate in Forum workshops or project meetings, some of which could be held as hybrid events.

For purposes of facilitating and managing Forum activities, Future Africa at the University of Pretoria and the Centre for Research on Evaluation, Science and Technology (CREST) at Stellenbosch University will continue to collaborate. The leadership of this function would be provided by Dr Heide Hackmann, Chair in Science Futures at CREST, and a senior member of staff at Future Africa. They may submit to Forum members a proposal for a small group of advisors to support their work, which should include:

- Developing a work programme, organizing relevant Forum meetings/events and facilitating regular communications.
- Bringing on board additional members, partners and advisors, as agreed with Forum founding members.
- Developing, in close consultation with Forum founding members, an optimal governance and management structure and operational mode for the Forum beyond 2027.
- Securing resources to support the Forum's governance and operations.

3.2: Recommendation 2: ISC Regional Coordinator for Africa

3.2.1: Purpose and value

The 2 year-consultations also revealed that there are several African ISC members who still value a dedicated ISC regional coordinating presence. However, due to the high financial costs of operating an office with staff, it is proposed that the ISC appoints an ISC Regional Coordinator through an open call/competitive process amongst the ISC members on the continent. The Regional Coordinator could fulfill the following responsibilities:

- Operationalise ISC strategies and ensure alignment with members on the continent.
- Communicate ISC activities and opportunities with African members, as well as strengthen and nurture an effective and mutually beneficial relationship and synergies between the ISC and its African members.
- Coordinate and strengthen ISC collaborative initiatives on the continent.
- Engage and represent African members in the ISC governing board to ensure African needs and priorities are taken into account.
- Represent the ISC in the ASTIL Forum to ensure that its needs and interests are met (e.g., expanded visibility and membership, access to networks and African policy making).
- Coordinate and facilitate ISC capacity development and fundraising activities on the continent.

3.2.2: Structure and operational mode

It is expected that the appointed ISC Regional Coordinator is an experienced and respected science expert with a strong network of the STI ecosystem on the continent. Ideally, the Regional Coordinator would work as a member of the ISC headquarters staff but hosted by an African institution. It is suggested that a part of the annual amount that the ISC spends on regional offices be allocated to cover the Regional Coordinator's salary and other related coordinating activities. The hosting institution in Africa would then provide office space and IT infrastructure.

Appendix 1:

The FA Task Team is composed of the following:

1. Heide Hackmann (project oversight until June 2024
2. Farai Kapfudzaruwa (project lead)
3. Jason Owens (project support)
4. Claire Chagwiza (senior postdoctoral fellow)
5. Tracy Bailey (project support)
   *Alison Meston – ISC liaison and contact person.

Appendix 2

The FA steering committee is composed of the following:

1. Daya Reddy, Acting-Vice Chancellor, University of Cape Town, South Africa (*chair*)
2. Ahmed Bawa, Professor, University of Johannesburg, South Africa
3. Oladoyin Odubanjo, Executive Director, Nigerian Academy of Sciences/INGSA, Nigeria
4. Lisa Korsten, President, African Academy of Sciences, South Africa
5. Christian Acemah, Executive Director, Uganda National Academy of Sciences, Uganda
6. Isabella Aboderin, Director, Perivoli Africa Research Centre (PARC), University of Bristol, UK
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9. Dorothy Ngila, Director, Strategic Partnerships, National Research Foundation, South Africa
10. Jackie Kado, Executive Director, Network of African Academies, Kenya
11. Priscilla Kolibea Mante, Global Young Academy steering committee co-chair & Professor of Neuropharmacology, KNUST, Ghana