



## **REPORT**

### **ONLINE REGIONAL CONSULTATION FOR AFRICA**

#### **ON**

### **THE FIRST DRAFT OF THE UNESCO RECOMMENDATION ON OPEN SCIENCE**

**Tuesday, 15 December 2020**

## Regional Consultation for Africa on the first Draft of the UNESCO Recommendation on Open Science

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At the 40<sup>th</sup> session of UNESCO's General Conference, Member States tasked the Organization with the development of an international standard-setting instrument on Open Science in the form of a UNESCO Recommendation on Open Science.

To this end, UNESCO conducted consultations in all geographic regions, to gain insight into the key existing challenges and opportunities for Open Science implementation, as well as to take stock of the infrastructures required for Open Science. The consultations also sought to compile suggestions for improving the development and implementation of Open Science.

In September 2020, after a series of regional and thematic consultations held since December 2019, the first draft of the UNESCO Recommendation on Open Science was sent by UNESCO Director-General to UNESCO Member States. The drafting process was guided by the UNESCO Advisory Committee on Open Science, appointed by UNESCO Director-General in June 2020.

### Organization and Objectives of the meeting

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The regional consultation on the first Draft of UNESCO Recommendation on Open Science was jointly organised by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the African Union Commission (AUC), and the Department of Science Innovation (DSI, South Africa), with the following objectives:

- Present the results of regional Open Science consultations held in 2019 and 2020.
- Advance the discussion on the meaning, scope and opportunities of Open Science between policy makers, experts from academia, private sector and citizens.
- Discuss the key aspects of Open Science that are most relevant in the African context and should be addressed by the UNESCO Recommendation.
- Provide an opportunity for the Open Science actors to provide comments on the first draft of the UNESCO Recommendation on Open Science from the African perspective.

A concept note (Annex 1) was shared with all African Ministries in charge of Science, Technology and Innovation (STI) and Higher Education, with a request to nominate experts for the meeting. Regional organisations dealing with science were invited to make interventions, and an open invitation to participate was broadcasted online.

The online meeting took place on Thursday, 15 December 2020, from 12:00 to 15:30 CEST (the agenda is appended as Annex 2). More than 100 participants attended the meeting, 30 African countries were represented, and 8 regional organisations presented their views.

## Summary of the meeting

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Prof Hubert Gijzen, Director of the UNESCO Regional Office for Southern Africa, moderated the opening session, in which Dr. Shamila Nair-Bedouelle, UNESCO Assistant Director-General for Natural Sciences, praised the AU for its support to Open Science including notably the opportunity created in December 2019 to present Open Science at the highest level to a specialized Ministerial Committee. She further highlighted the historical significance of Open Science to deliver UNESCO's mandate of peace through equal access to knowledge, and the potential for human well-being that Open Science has demonstrated during the COVID-19 crisis. Dr Nair-Bedouelle underlined also the importance of the meeting to collect feedback and further inputs from a comprehensive range of stakeholders, to ensure that the Recommendation would fully reflect the ideas, concerns and priorities of African countries and stakeholders.

On behalf of the AU Commissioner for Human Resources, Science and Technology (HRST), Director Dr. Mahama Ouedraogo, highlighted the urgent need for Africa to strengthen Open Science. Firstly, because we live in an era when science needs to be more connected to societal needs through equal opportunity for all; secondly as the African economy is rising and sustainability will depend on transparency and information sharing of research results, which can be duplicated across the globe for the common benefit of all. Furthermore, the need for Open Science is critical, considering that African development critically depends on STI, as embodied in the African Union's Agenda 2063, the AU Science, Technology and Innovation Strategy for Africa 2024 (STISA 2024) and the UN 2030 Agenda for Sustainable Development. The African Ministers for STI expressed their support to promote Open Science at national, regional and continental level. The Ministers committed to support the ongoing consultative process led by UNESCO to develop a standard-setting instrument. Emphasis was placed on the need for Africa to actively lead the implementation in Africa, and the importance to assess the readiness and specific needs of the continent was further underlined.

Dr. Peggy Oti-Boateng, Director of the Division of Science Policy and Capacity Building, UNESCO, provided more context to the potential of Open Science as a game changer in bridging STI gaps within and among countries and for STI to become more effective as Sustainable Development Goals (SDGs) accelerator. She gave a comprehensive overview of the progress so far achieved in the development of the UNESCO Recommendation on Open Science, including the global, regional and thematic consultations leading to the first draft text, which was submitted to the Director-General in September 2020 and shared with Member States and the global audience for their inputs by 31 December 2020. Dr. Oti-Boateng invited the participants to contribute perspectives during the meeting and continue to encourage Member States and other actors to go online and provide final comments by the end of December 2020. A second draft will be sent to Member States in March 2021, and an intergovernmental special committee meeting will be held in May 2021 to negotiate the text that will be presented at the 41<sup>st</sup> session of the UNESCO General Conference in November 2021 for discussion and adoption.

The opening session was followed by three sessions facilitated by three members of the Advisory Committee: Dr. Vivian Boamah, Ms. Jane Chinkusu and Dr. Phil Mjwara. The first two sessions provided feedback from regional organisations, while the final session opened the floor to country representatives and all other participants.

## Summary of the inputs

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Speakers reiterated general support for the opportunity that Open Science offers, and the work carried out so far in developing the draft UNESCO Recommendation on Open Science. Among the key conclusions was that the Recommendation will be an excellent framework to develop Open Science in the African continent. Participants considered the Recommendation as a working draft, helping them to start the Open Science journey, and referred to the definition of Open Science in the draft Recommendation as a useful element, because many constituencies take different meanings into the definition of open science. The core values and guiding principles were deemed equally useful. Several speakers raised the importance to go beyond definitions and principles, and hence most of the suggestions referred to the section Areas of Action of the Recommendation.

Several speakers pointed out that science is needed to address urgent and multidisciplinary societal challenges. The gap between the scientific community and policymakers is a challenge in working towards Agenda 2030. In this regard, Open Science is a tool to assist in facilitating an interface between disciplines, bringing in data from economic, social and natural sciences for evidence-based action. Only if Open Science transforms science to contribute to societal challenges, it would go beyond a fancy definition or a superficial policy instrument. The draft Recommendation, which is intended for Member States, recommends them to create instruments that will make Open Science thrive. However, the participants noted that, in general, the engagement of the broader global scientific community to transform the scientific culture towards Open Science is still missing. UNESCO's global scientific partners, such as the World Academy of Sciences (TWAS) and the World Federation of Engineering Organizations (WFEO), can engage the global scientific community to become more receptive to the Open Science concept.

Overall, participants' comments on the draft Recommendation focused on Intellectual Property Rights, the actors involved in Open Science, and the cultural change needed for Open Science:

- Participants noted that the Open Science Recommendation should pay more attention to the reconciliation of IPR and policies and mechanisms in which inventors and researchers benefit from open sharing of research, both in terms of investment, financial return and academic credit. Notably the African academies of science are highly concerned with this issue.
- According to participants, the heterogeneous nature of the actors involved in Open Science was captured relatively well in the first draft text of the Recommendation. The different ways of thinking and working of the different actors should be noted. Participants cautioned that when being among proponents of Open Science, one should not forget that there are stakeholders who are reluctant or possibly opposed to the principles of Open Science. These actors should also be brought in at an early stage. Several speakers pointed out that the private sector, including large industries, is not listed as a key actor in the draft Recommendation. This sector should be involved in the process, as a key stakeholder with relevant concerns and ideas. Further consultations with civil society organisations in the operationalization of Open Science were also recommended.

- It was also noted that researchers currently work in silos as they compete for resources, and they are not sharing. A cultural change is needed to bridge this gap between the different actors so they can collaborate with each other. Therefore, Open Science should have a robust capacity-building programme to change the mind-set in all the sectors at different levels, to see each other as collaborators in an established network. Changing this mind-set should start with children who are taught they are not competing; instead they should be sharing objectives, collaborating, and trusting one another.

In addition to these general comments on the draft Recommendation, participants noted the risk of applying the Recommendation universally without addressing the particular challenges of individual countries or regions and adapting to different contexts during the implementation. Although the draft Recommendation recognizes regional differences, and in particular takes into account specific challenges in developing countries and aims to contribute to reducing the knowledge divide existing between or within countries, it is not specified how these objectives could be achieved. Many speakers therefore underscored the importance of contextualising the way forward to each region and specifically to the African situation. The Regional Economic Communities (RECs) were mentioned as role-players in facilitating specific actions, tailored to the situation of each (sub)region. In this context, speakers from RECs covering Southern (SADC) and Central Africa (ECCAS) noted the contrast between the reported baseline situations.

In the African context, participants noted infrastructural issues, financing, inequities in science, technology and innovation, and openness to indigenous knowledge as fundamental challenges to implementing Open Science:

- Regarding infrastructure, in some countries, basic scientific literacy and basic internet access are still major challenges. In these cases, providing open access to research does not automatically imply that everyone can actually access it. It may be required to explore how communities without such infrastructure can benefit from Open Science. On the other hand, the digital era may offer the possibility to leapfrog some of the infrastructural challenges by accessing infrastructure all over the world. In addition, participants pointed to the need for an Africa-based open data repository that standardizes policies and practices around data storage, compatibility, access, licensing, rights, etc. across sciences in Africa. It would be wise to embark in a continental license from publishing houses instead institution to institution.
- Regarding funding, participants pointed out that Open Science is one element in an enabling STI-environment. UNESCO over the years has championed the cause of African countries to reach Research & Development (R&D) expenditure at 1% of Gross Domestic Product (GDP). This has not yet been achieved everywhere and participants raised the question on how Open Science can circumvent failures of the past. In developing countries open access funding policies are mostly directed at financing technical infrastructure required to upgrade open access online platforms, with little or no measures directed at funding content production. Speakers pointed to the need to consider how to fund the content production, including public and private funding. As many stakeholders mentioned availability and effective utilisation of resources, examples were given of SADC countries with increased availability of R&D funding and new mechanisms. The need to increase the awareness about existing funding that can be used to

promote open science was also mentioned. The African Publishers Network warned that Open Science could have unintended negative effects. They could result in discouraging investment in Africa publishing industries and act as a disincentive for content producers, when overseas research is easier to access and local investment less needed. Open Science should not mainly become an additional opportunity for overseas scholars. Therefore, the network recommended an impact assessment of the proposed Recommendation on all stakeholders including content producers and publishers.

- Participants pointed out the need to examine global inequities in science technology and innovation. For example, affordable access to reading and publishing in scientific journals is a critical issue for Africa and for all Low and Middle Income Countries (LMICs). When major science publishers transform into data processing companies, there is a risk of locking scientists and their institutions into expensive solutions. Therefore, participants argued that while private sector involvement in Open Science is important, it is equally important to avoid private monopoly on specific research agendas. This needs to be offset in the process of Open Science, avoid the emphasis on prestige or rankings or impact factors. Fully depending on public funding on the other hand may pose a risk regarding content restrictions that could be imposed by governments. Therefore, independence in publishing is an important criterion that needs to be upheld.
- Openness to indigenous knowledge is critical for Africa according to participants. The Recommendation would necessitate African countries to develop policy frameworks, actively engage, educate and consult indigenous knowledge communities, and facilitate collaboration between them and the wider national science enterprise in the countries. Involvement of local and indigenous communities is currently hampered by the absence of knowledge gathering and sharing systems and there is a need for an interface between different scientific communication cultures. Participants pointed to regions that do have experience with systems to make indigenous knowledge available and protect it, such as the South African indigenous knowledge documentation centres, where indigenous knowledge is stored. To gain access, there is a mechanism to obtain consent from the knowledge holders. Other regions have developed similar systems that can be shared.

Several speakers emphasized the need to identify, recognise and build on existing African initiatives and platforms where public funders in STI already interact. Firstly, the establishment of the new African Open Science Platform (AOSP), hosted by the Foundation for Research and Development (FRD, South Africa) with support from the Minister of Science and Technology of South Africa, is an important step. The regional office for Africa of the International Science Council (ISC) is also one of the drivers of this platform. Secondly, participants mentioned the involvement of the African Academy of Sciences (AAS) in issues related to Open Science and open data. AAS already has an open access publishing platform for all scientists and students associated with AAS, including young affiliates and people associated with grants, and is currently creating an open data science platform. Thirdly, non-profit organisations have been active in promoting Open Science with very little financial support and providing access to key stakeholders. Organisations like the African Journals OnLine (AJOL) provide an open access library of African published journals that are peer-reviewed and quality-controlled, mentoring in terms of improved publishing practices for the partner journals, and

regular training workshops. Organisations like the African Publishers Network (APNet) offer platforms to liaise with key stakeholders. Youth initiatives such as the Africa Open Science & Hardware (AfricaOSH) have networks and experience with specific more grassroots challenges and opportunities.

In addition to the abovementioned initiatives, participants commented on the potential that Open Science offers to promote collaborative work bridging geography, language, generations, and disciplinary boundaries in Africa, with opportunities to create African-led repositories of knowledge. Currently, scientific publication takes place in a fragmented way in Europe and North America, Latin America, and Africa, which adds to the fragmentation of the global science community. Therefore, speakers advocated for globally accessible publications to allow the African voice to be heard at the global level. Similarly, participants noted that Open Science contributed extensively in enhancing the international and continental visibility as per internal STI metrics (Scopus, Web of Science, GoogleScholar). This has facilitated fundraising from international agencies. Additionally, it is important to create opportunities for researchers to share the early stages of their work, collaborate and produce results. Focus so far has been on making existing data and research available, but there must also be a way to let researchers from the early stages be able to collaborate from within Africa and all across the world.

To raise the African voice in the global conversation on Open Science, several speakers pointed out the need to broaden the consultation and participation, including the need for coherent mobilization of communities and institutions over the continent. Regarding the implementation of the Recommendation, a comprehensive multi-sectoral, multi-stakeholder advocacy process will be needed, and major events such as the World Science Forum, would be an opportunity to raise awareness and increase ownership. African stakeholders at all levels, starting with the AU, should allocate resources in order to implement Open Science policies. The AU needs to play a role in positioning and putting practical solutions and resources on Open Science. As Open Science requires a new set of incentives, a new way of designing programs, funding, and science policy interface can take place in international cooperation. The 'hub and spoke' model of the Open Science platform would support this, with a central hub and with initiatives on the ground in each (sub)region.

## Conclusions and closing remarks

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Dr Phil Mjwara, moderator of the last session, closed the open discussion with some concluding messages.

The first message was the role of UNESCO in providing an excellent framework, to take full advantage of the opportunities that are offered by operationalizing Open Science. He pointed out that there are many issues faced by Africa that require functional scientific programmes, Pan African programmes that need to be developed to ensure that science is used to address societal problems. With regard to the feedbacks on the draft Recommendation, Dr Mjwara raised the following questions, which need to be addressed: is the document sufficient in bringing the private sector to the party? Does it have a global reach? What are the advocacy processes that need to be put in

place? And are all other shared or unique challenges in the African continent addressed in the current document?

Secondly, he recommended that stakeholders, UNESCO and the AU Commission should consider that the Open Science Recommendation is not an end in itself,. He highlighted that the new challenges in Africa and globally require a dynamic interface between various disciplines as demonstrated by the COVID-19 pandemic. Open Science provides a perfect instrument to bring together data sources from the economy, from the social sciences and humanities and from natural sciences, in order to address complex societal challenges. He recalled that problems such as climate change do not affect one country but an entire region.

The third issue he listed was the infrastructure. He noted that unless there are adequate policies, driving the infrastructure and incentives in the different regions, it will be difficult to collect and share the much needed data. If Africa wants to be part of the globally changing society, it will need the infrastructure to be able to handle large amounts of data and files in the countries across the continent to be able to produce what is required.

He also underlined the need for strengthening an enabling policy environment. This could be driven either at regional level or at a country level, and there already are regional bodies in Africa, including SADC in the south. The African Open Science Platform will continue to advance this work, and continue to make the platform available to the rest of scientists over the African continent.

A final suggestion building on the above, was that in the annual African Union meetings, the advancements made on the African Open Science Platform can be shared with Ministers and leaders in the continent.

In the concluding remarks, the AU representative, Dr. Ouedraogo, thanked the organizing partners and recognised the importance and inclusiveness of the initiative and the process. He acknowledged recurring challenges of the digital divide, the low investment in R&D, which remained very low across Africa, the further infrastructure challenges, capacity, policy and funding. Dr. Ouedraogo re-emphasized the importance of many organisations particularly active in the field of Open Science. He noted that the African Open Science Platform can only survive if it is funded by Member States. He ended by welcoming once more the Open Science movement and encouraged to take the draft Recommendation forward with the comments made during the meeting.

In her closing remarks on behalf of UNESCO, Dr. Oti-Boateng highlighted the potential of Open Science, but also acknowledged the challenges raised by many speakers, notably the low investment in R&D, and consequent inability to address many societal challenges. She thanked the AU and DSI for championing Open Science and STI towards the socio-economic transformation that Africa wants to see. She concluded by encouraging all participants to become advocates for Open Science in Africa, including open innovation, so to leave no one behind, and support a social, economic and environmental transformation on the continent. Finally, she reminded everyone that online comments are still very welcome until 31 December 2020.

## Annex 1 – Concept Note

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### Towards a Global Consensus on Open Science

Online Regional Discussion for Africa on the first draft of the  
UNESCO Recommendation on Open Science

December 15, 2020, 13:00-17:00 (GMT+2 time)

## Background

Open Science (OS) is a global movement aiming to make science more accessible, democratic, transparent and beneficial for all. Driven by unprecedented advances in our digital world, the transition to Open Science allows scientific information, data and outputs to be more widely accessible and more readily shared with the active engagement of all relevant stakeholders. Open science is a powerful tool that is crucial to the global capacity to address many of the fundamental issues that human society will continue to face. By encouraging science to be more connected to societal needs and by promoting equal opportunities for all, Open Science can be a true game-changer in pressing planetary and socio-economic challenges and bridging the science, technology and innovation (STI) gaps between and within countries.

The recent response of the scientific community to the COVID-19 pandemic has demonstrated how open science can accelerate scientific solutions for a global challenge. The genetic sequence of the SARS-CoV-2 virus was posted in an open access repository and made freely available to all researchers. To accelerate our common understanding of the global threat and finding the treatment, scientists are sharing their protocols and results of their research in open access journals and open data repositories. Many international publishers have made COVID-19 research content freely accessible and technology leaders have joined in creating the needed infrastructure for open access databases, containing valuable information on scientific and technological advancements.

Despite the encouraging open science actions in response to COVID-19, and the growing number of national and regional initiatives, there is currently no international framework or common policy guidance for Open Science globally. UNESCO, as the United Nations Agency with the mandate for Science, is the legitimate global organization enabled to build a coherent vision of Open Science and a shared set of overarching principles and shared values. That is why, at the 40<sup>th</sup> session of

UNESCO's General Conference, 193 Member States tasked the Organization with the development of an international standard-setting instrument on Open Science in the form of a UNESCO Recommendation on Open Science.

UNESCO Recommendations are legal instruments in which “the General Conference formulates principles and norms for the international regulation of any particular question and invites Member States to take whatever legislative or other steps may be required in conformity with the constitutional practice of each State and the nature of the question under consideration to apply the principles and norms aforesaid within their respective territories”. Emanating from the Organization's supreme governing body, Recommendations are intended to influence the development of national laws and practices. The Recommendation on Open Science is expected to define shared values and principles for Open Science, and identify concrete measures on Open Access and Open Data, with proposals to bring citizens closer to science and commitments facilitating the production and dissemination of scientific knowledge around the world.

The Open Science movement in Africa is gradually gaining pace in the last decade. In 2016 at the 4<sup>th</sup> Council for the Development of Social Science Research in Africa (CODESRIA) Conference to discuss opportunities and challenges to the Open Science movement in the region, the Dakar Declaration on Open Science in Africa was published as a main outcome. Signatories of the declaration agreed to promote and support Open Science across Africa. Later several Open Science initiatives came out across the continent. For example, during 2017-2019, the African Open Science Platform (AOSP) was initiated through a pilot phase supported by South Africa's Department of Science and Innovation (DSI), key institutions in Africa, and the International Science Council (ISC). The AOSP is a pan-African endeavour that aims to position African scientists at the cutting edge of data-intensive science, by stimulating interactivity and

creating opportunities through the development of efficiencies of scale, the creation of critical mass through shared capacities, and amplifying impact through a commonality of purpose and voice. As a powerful means of providing evidence-based solutions, deep African engagement with Open Science movement would advance Africa's self-reliance on the achievement of the sustainable development. To this end, UNESCO conducted consultations in different regions including the Africa Region in order to gain insight into the key challenges and opportunities existing for Open Science implementation as well as take stock of the infrastructures required for Open Science. The consultations also sought to compile suggestions for improving the development and implementation of Open Science in Africa. Lessons learned and opportunities created during the development and implementation of Open Science initiatives in Africa are valuable experiences, which will assist UNESCO in developing a comprehensive Recommendation on Open Science.

### Objectives of the Online Regional Discussion Meeting

To advance the Open Science discussion in the global context, it is important to take stock of the different regional perspectives. The online regional discussion meeting is aimed at sharing with stakeholders the draft Recommendation from the Regional Open Science consultations. These include the Africa Union Ordinary and Extra-Ordinary Sessions of the Specialized Technical Committee on Education, Science and Technology (Stc-Est 3) held on 15 December 2019 and 30 April 2020 respectively, the EU-AU policy dialogue and consultations during the Africa Regional Forum on Sustainable Development held in Zimbabwe in February 2020. The meeting will bring together key stakeholders in Africa such as scientists, researchers, publishers and policy makers to serve as a key step towards enriching the draft Recommendation through identification of gaps and other areas for improvement particularly for the continent.

The meeting will provide the platform for

scientists, policy makers and other concerned stakeholders to share experiences and good practices and provide comments to the first draft of the UNESCO Recommendation on Open Science. This first draft was developed by UNESCO in September 2020 after a series of regional and global consultations held from December 2019. The drafting process was guided by the 30 member UNESCO Advisory Committee on Open Science appointed by the Director General of UNESCO in June 2020.

The specific objectives of this online regional consultation are to:

- Present the results of the regional open science consultations which took place in Ethiopia with, Ministers and policy makers in 2019, online consultations during the extraordinary session which was held virtually, EU-AU policy dialogue and consultations during the Africa Regional Forum on Sustainable Development held in Zimbabwe in February 2020.
- Advance the discussion from the perspective on the meaning, scope and opportunities of Open Science between policy makers, experts from academia, private sector and citizens.
- Discuss the key aspects of Open Science that are most relevant in the African context and should be addressed by the UNESCO Recommendation.
- Provide an opportunity for the OS Actors to provide comments on the first draft of the UNESCO Recommendation on Open Science from the African perspective.

This online meeting is envisaged to bring together multi-stakeholder participants from the African region and will be held in English with French interpretation on the Zoom online platform.

The meeting will be comprised of two main sessions namely, (i) a technical session to present and review the draft Recommendation on Open Science, and (ii) a session on Key

challenges and opportunities for member states (Africa Union) and other actors to further reflect on the recommendations on advancing Open Science from the African perspective.

### Expected Outcome

- i) The results of the discussions emanating from the Africa Regional Open Science consultations shared with stakeholders for their consideration;
- ii) Opportunity for stakeholders to deliberate on the views of stakeholders implementing Open Science initiatives presented;
- iii) Key aspects of Open Science that are most relevant in the African context and should be addressed by the UNESCO Recommendation identified;
- iv) Comments on the first draft of the UNESCO Recommendation on OS provided by stakeholders particularly from the African perspective collected.

- Association of Africa Universities (AAU)
- Regional Economic Communities (RECs)
- The Network of African Academies (NASAC)

### Co-Organizers

UNESCO is organizing this virtual meeting in collaboration with African Union Commission for Human Resources Science and Technology (AUC-HRST), the Department of Science and Innovation (DSI) of South Africa and UNESCO National Commissions of Ghana, Ivory Coast, South Africa and Zambia as members of the Global UNESCO Open Science Advisory Committee.

### Participating Institutions

- Governments of Member States
- ISC Regional Office for Africa (ISC ROA)
- African Open Science Platform (AOSP)
- African Network of Scientific and Technological Institutions (ANSTI)
- The World academy of Sciences (TWAS)
- African Observatory of Science, Technology and Innovation (AOSTI)
- African Academy of Sciences (AAS)
- Advisory Group on Open Science



## Programme

13:00-13:45	<b>SESSION 1: OPENING SESSION</b>
	<p><b>Moderator: Prof Hubert Gijzen</b>, Regional Director and Representative, United Nations Educational Scientific and Cultural Organisation: Regional Office for Southern Africa (UNESCO-ROSA)</p> <p><b>Welcome Remarks:</b></p> <ul style="list-style-type: none"> <li>• <b>Dr Shamila Nair-Bedouelle</b>: Assistant Director-General for Natural Sciences, UNESCO</li> <li>• <b>Prof Sarah Anyang Agbor</b>: African Union Commissioner for Human Resources, Science and Technology (HRST)</li> </ul> <p><b>The first draft UNESCO Recommendation on Open Science and inputs from Africa:</b></p> <ul style="list-style-type: none"> <li>• <b>Dr Peggy Oti-Boateng</b>: Director, Division of Science Policy and Capacity-Building, Natural Sciences Sector, UNESCO</li> </ul>
13:45-14:45	<b>SESSION 2: OPEN SCIENCE IN AFRICA: KEY CHALLENGES AND OPPORTUNITIES Reflection by the African Open Science Actors on the draft UNESCO Recommendation</b>
	<p><i>Speakers will have maximum 4 min for their interventions.</i></p> <p><b>Moderator: Dr Vivian E. Boamah (Ghana)</b>: Member of the Advisory Committee</p> <ul style="list-style-type: none"> <li>• Dr Khotso Mokhele (Chair AOSP Advisory Council)/Dr Sepo Hachigonta (Interim Manager), African Open Science Platform (<b>NRF/AOSP</b>)</li> <li>• Dr Ahmed Hamdy, Executive Director, AU Scientific Technical Research Commission (<b>AU-STRC</b>)</li> <li>• Ms Elizabeth Marincola, Senior Advisor, African Academy of Science (<b>AAS</b>)</li> <li>• Dr Daniel Nyanganyura, Regional Director, International Science Council-Regional Office for Africa (<b>ISC-ROA</b>)</li> <li>• Dr Irie Vroh-Bi, Senior Expert, African Observatory of Science Technology and Innovation (<b>AOSTI</b>)</li> <li>• Ms Susan Murray, Executive Director, African Journals OnLine (<b>AJOL</b>)</li> <li>• Mr Jorge Appiah, CEO, Kumasi Hive Mr Samuel Kolawole, Chair, African Publishers Network (<b>APNET</b>)</li> <li>• Dr Henri Tonnang, Head of Data Management, Modelling and Geo-Information, International Centre of Insect Physiology and Ecology (<b>ICEPE</b>)</li> <li>• Dr Jonathan Mba, Director of Research, African Association of Universities (<b>AAU</b>)</li> </ul>
14:45-14:55	<b>Break</b>

14:55- 15:45	<p><b>SESSION 3: OPEN SCIENCE IN AFRICA: KEY CHALLENGES AND OPPORTUNITIES</b>  <b>Reflection by the African Open Science Actors on the draft UNESCO Recommendation</b></p> <p><b>Moderator: Ms Jane M. Chinkusu (Zambia),</b> Member of the Advisory Committee</p> <hr/> <ul style="list-style-type: none"> <li>• Ms Anneline Morgan, Senior Programme Officer: STI, Southern African Development Community (<b>SADC</b>)</li> <li>• Dr David Blaise Ossene, Education and Culture expert, Economic Community of Central African States (<b>ECCAS</b>)</li> <li>• Mr Fortunate Muyambi, Acting Executive Secretary/Principal Off. Innovation &amp; Technology Development, East African Community (<b>EAC</b>)</li> <li>• The Economic Community of West African States (<b>ECOWAS</b>)</li> <li>• The Common Market for Eastern and Southern Africa (<b>COMESA</b>)</li> <li>• The Community of Sahel-Saharan States (<b>CENSAD</b>)</li> </ul>
15:45– 16:45	<p><b>SESSION 4: OPEN SCIENCE IN AFRICA: KEY CHALLENGES AND OPPORTUNITIES</b>  <b>Open discussion on the comments from Africa on the 1<sup>st</sup> draft Recommendation</b></p> <p><b>Moderator: Dr Phil Mjwara (South Africa),</b> Member of the Advisory Committee</p>
16:45-17:00	<p><b>SESSION 5: CONCLUSIONS AND CLOSING</b>  <b>Closing Remarks:</b></p> <ul style="list-style-type: none"> <li>• <b>Dr Mahama Ouedraogo:</b> Director, African Union Commission, Human Resources, Science and Technology (HRST)</li> <li>• <b>Dr Peggy Oti-Boateng:</b> Director, Division of Science Policy and Capacity-Building, Natural Sciences Sector, UNESCO</li> </ul>