

Report

The Working Group (WG) of the **Research&Innovation Partnership on 'Climate Change and Sustainable Energy' (CCSE)** of the **AU-EU High-Level Policy Dialogue on Science, Technology and Innovation** held their second workshop on 2 September 2021. The workshop took place online and attracted close to 220 registrations. During the workshop more than 110 participants joined the meeting. With 38% of participants originating from the African continent, 59% from the European and 3% from other regions of the world, good regional representation was achieved. The workshop was moderated by the two co-chairs of the working group; Leah Wanambwa Naess from the African Union Commission, Department of Agriculture, Rural Development, Blue Economy and Sustainable Environment and Dr Philippe Schild from the European Commission, DG Research & Innovation. Both highlighted the importance of the topics to the Commissions through e.g. the [AU's Green Recovery Action Plan \(2021-2027\)](#) and the EU's launch of its [first Horizon Europe work programme](#). The AU Green Recovery Action Plan will focus on climate finance, energy efficiency, biodiversity, resilient agriculture and green cities by utilising existing AU mechanisms to streamline and amplify green recovery action in partnership with Regional Economic Commissions (RECs) and regional stakeholders. The first Horizon Europe work programme is set for the period 2021-2022 and includes actions to support and strengthen cooperation through multilateral initiatives to help accelerate the green and digital transition. It comprises actions with non-EU partners, including the ["Africa Initiative"](#).

The workshop focused on four concrete focus blocks.

1. Knowledge & research;
2. Technology development and demonstration & innovative markets;
3. Capacity building, social sciences, humanities & resilience behaviour;
4. Good governance and policies.

Through the input of four panellists and four break-out sessions with eight input givers, participants discussed the chances, constraints and needs of African-European cooperation in climate change and sustainable energy in the identified focus blocks. The outcome of the workshop will give orientation for future cooperation, agree on a common definition of future priorities and a common roadmap and responsibilities, provide exchange with funding agencies on potential future calls and/or international events and define the future agenda and tasks.

Background AU-EU Research and Innovation Partnership on Climate Change and Sustainable Energy (CCSE)

The [AU-EU Research and Innovation Partnership on Climate Change and Sustainable Energy \(CCSE\)](#) is the second priority area for cooperation of the [AU-EU High Level Policy Dialogue \(HLPD\) on Science, Technology and Innovation](#) and was adopted at the 4th AU-EU HLPD Senior Officials Meeting (SOM) in Brussels, Belgium in October 2017.

The CCSE Partnership is based on the [CCSE roadmap](#) composed of two elements: (1) climate action for adaptation and mitigation and (2) sustainable energy. It is driven by understanding the climate risks, delivering knowledge to support adaptation and mitigation measures and Europe's existing strong contribution to climate change and to the transition to a sustainable energy production in line with political agreements such as the SDGs (especially affordable and clean energy (7) and climate action (13)), the [Paris Agreement](#), the [EU climate and energy union packages](#), the [AU Vision 2063](#), the [AU Science, Technology and Innovation Strategy for Africa 2024](#), the [AU-EU Statement on Climate Change 2014](#) and the [AU-EU Renewable Energy Cooperation Programme \(RECP\)](#).

In the framework of the CCSE partnership, a working group was launched on 15 July 2020 with the task to explore future avenues of cooperation notably on green/renewable hydrogen, circular economy, energy efficiency in buildings, climate-environment-health nexus and climate adaptation-mitigation and to accompany and monitor the implementation of the measures under the CCSE roadmap by developing (i) an Action Plan, as well as (ii) a Monitoring and Evaluation framework. The working group organised their first workshop on COVID19 and the-Health-Energy-Climate Nexus on 16-17 February 2021. All outcomes are available [here](#).

The priority area of CCSE is further implemented through various projects such as the sustainable energy activities: [PRE-LEAP-RE](#) | [LEAP-RE](#) | [ABC 21](#) and climate change activities: [CONFER](#) | [Down2Earth](#) | [FOCUS-Africa](#). Under the new [Horizon Europe Africa-Initiative](#), seven calls are dedicated to the priority of CCSE.

Panel discussion

The workshop was opened by four panellists introducing the topic of African-European cooperation in climate change and sustainable energy to participants and setting the tone for the following discussion on the four focus blocks.

Tinyiko Ntshongwana, deputy director for Africa Multilateral Cooperation at the Department of Science and Innovation (DSI) in South Africa shared her diverse experiences on national and collaborative funding mechanisms and institutions, putting special emphasis on the African perspective. She highlighted that research and innovation funding schemes tend to incorporate traditional stakeholders including public research funding agencies and institutions, however in the current era where countries need to

rebuild their economies, there may be a need to consider funding schemes that incorporate actors outside the public sector.

African funding agencies need to ensure that joint call priorities respond to their national development agenda. What is increasingly important with realising impact in research and innovation cooperation is moving beyond basic research to applied research – where the possibilities of creating a pipeline within the innovation value chain are open.

Particularly important aspects are the capacity building linked to international cooperation, the link between modern science and the need for policies, the local context and co-funding.

Mokhtar Sellami, director in charge of Science Technology and Innovation at the National Council for Scientific Research and Technologies (CNRST) in Algeria. The new institution is placed under the supervision of the Algerian Prime Minister. He presented the long-term joint AU-EU research and innovation partnership on renewable energy LEAP-RE as a promising renewable energy network in the framework of the AU-EU partnership. LEAP-RE is a project funded by the Horizon 2020 EU initiative, in response to the “Long Term EU-Africa Partnership for Research and Innovation actions in the area of renewable energy”. This programme aims to increase the use of renewable energy through a well-balanced set of research, demonstration, and technology transfer projects in both continents. LEAP-RE also represents a long-term network of stakeholders.

LEAP-RE consists of three pillars. The first pillar focuses on external research funding and capacity-building implemented through open calls for proposals which focus on the six roadmaps developed in the preparatory phase of the programme. The calls for R&I projects are funded by 15 European and African R&I funding agencies as well as the EU. ANR (France) and MESRS (Algerian Ministry of Research) jointly ensure the coordination of the pillar. The six roadmaps i.a. focus on innovation priorities, smart-grid and off-grid systems, productive and domestic uses, access to energy, recycling and further key topics necessary to make the development of renewable energy sustainable and efficient. An important aspect mentioned is open science. Next steps for selection of the new projects and consolidation of the network include an updated list of the projects, following the feed-back of the funding agencies, and the selection of an independent observer to ensure fairness of the evaluation process. Due to the complexity of Era-Net mechanisms a pedagogical session on these rules before the establishment of the list of funded projects is planned. It will ensure that the projects will focus on achieving goals of mutual benefit for EU and AU countries, based on a balanced and cooperative approach. Gregor Laumann, head of division “Climate, Policy, International” at DLR Project Management Agency in Germany, member of the JPI Climate Board and coordinator of SINCERE-Flagship Action for Africa addressed the question on how to decrease fragmentation and trigger a critical mass of African and European funding agencies supporting a common research agenda at regional level. He pointed out that SINCERE has the overall objective to unite and coordinate European climate change research to operate in partnership with

key European and non-European partners in support of the Paris Agreement and the Sustainable Development Goals. The objective of the “Flagship Action Africa” is to widen the scope of possible joint funding opportunities between African and European countries. The “Flagship Action Africa” also worked on an overview of linkages between the research and innovation strategies of African partners, JPI Climate and the SINCERE members incl. analysis of barriers and enablers, mutual priorities and synergies for future cooperation. The aim is to provide a prioritised description of topics on which expanded cooperation may be worth pursuing, incl. a proposal concerning potential joint funding mechanisms. Important aspects include the need for co-ownership and co-design of memberships, the enhancement of knowledge development as well as using knowledge as a pathway and monitoring these pathways.

Amany El Taweel, director of the Women’s Program at the Center for Political and Strategic Studies in Egypt explained some of the gender-effects of energy in Africa. Prominent challenges include energy shortage in Africa and extreme poverty which are, as well as Africa’s other challenges, exaggerated by climate change. Moreover, the African energy system is one of the least developed but the potential for green energy is considerable. Direct victims of climate change and the problem of energy availability in Africa are, besides marginalised and vulnerable groups, women. That said she also raised concern about the dependence on hydroelectric energy since increasing this dependence would lead to threatening regional peace and result in growing migration. The impact of climate change on women also shows in the African agricultural sector, whose workforce consists of a high percentage of women. Due to the lack of energy the use of mechanical tools is often not available. This increases the working time for women and additionally most energy is used for the process of cooking. However, the energy is mostly produced by burning wood, which contributes to increasing the phenomenon of climate change. She proposed to focus on renewable energy also those energies researchers are not focussing on yet. This includes energy resources such as: geothermal and wind energy. She also highlighted that the focus on energy would raise life quality, reduce climate change risks as well as the level of African armed conflicts.

Review of first workshop

CCSE working group member Joseph Mwangi reviewed the first workshop which took place online 16-17 February 2021 attracting an overall 115 participants. The workshop focused on climate change and sustainable energy in relation to COVID-19 recovery and resilience packages on day one and the health-energy climate nexus on day two. The workshop was organised around six thematic blocks: climate justice, gender measures, island specificities, climate risks and air quality, indoor pollution, as well as energy and health infrastructures. Through the input of eleven keynote speeches and fifteen parallel break-out sessions during the two days, the workshop provided high-level expertise and a fruitful exchange among the participants. Finally, it led to the identification of priorities

and challenges that should be tackled by the CCSE partnership within the selected topics and thus suggest 91 potential actions for implementation to the CCSE partnership. All details are available [here](#).

Focus blocks and actions

Acting upon the outcome of the first CCSE Workshop, the CCSE working developed four focus blocks towards concrete actions.

1. Knowledge & research (TRL 1-4)¹

The first session worked under the moderation of CCSE WG members Patrick Monfray and Ibidun Adelekan on the knowledge and research needed in the African-European cooperation in climate change and sustainable energy. Recommendations for action are:

Funding

- Dissolve mismatch between research funding and development aid funding which currently run in parallel
- Make more funding support available for applied research and action research
- Reconcile short- and long-term issues so investment benefit both for PRESENT and future climate

Regionalisation

- Broaden the influence of local/community knowledge
- Work with local partners to identify skills needed in order to provide training relevant to local communities
- Reduce language barriers: include African research institutes, use local languages
- Support AU-EU mobility and engagement in Africa to enhance local understanding and increase capacity
- Use digital tools to provide local knowledge, develop skill and capacity building
- Provide solutions that can be implemented at regional and local levels

Skills and capacity building

- Develop easily accessible research infrastructure in Africa
- Develop skills and capacity building in research management
- Undertake strategic skills needs assessment to identify where the critical skills gaps are
- Encourage collaboration between higher education institutions in the AU and EU
- Link research to policies

Research

- Link climate risks to local socio-economic practices and knowledge
- Identify where defragmentation between actors is more crucial to connect research and development
- Encourage practical-oriented research particularly with regard to climate-impact modelling and the investigation of climate resilient systems in an integrated approach.

¹ Guide to technology readiness levels:

https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf

- Link with on-going initiatives: e.g. Excellence Centre, CORDEX, SINCERE, etc.
- Consider possibility of a 'Thriving Earth Exchange for Africa' modelled after the AGU Thriving Earth Exchange: <https://thrivingearthexchange.org/>

2. Technology development and demonstration (TRL 5 – 7) & innovative markets (TRL 8 – 9)

The second session was led by CCSE WG members François Moisan and Luis Alves. An introduction to the topic of technology development and demonstration as well as innovative markets was delivered by experts Anne Wacera Wambugu, Strathmore University & LEAP-RE, François-Xavier Testard-Vaillant, EDF, and José Neves, Atlantic Technical University. Nationally Determined Contribution (NDC) prepared and implemented in compliance with the Paris Agreement were presented as a very useful framework for the design and the implementation of renewable energy policies and projects at national scale in African small island developing states (SIDS). They represent a specific issue regarding the weight of tourism in their economy. Renewable energy solutions for these countries should consider these specificities (example of Cabo Verde).

Recommendations for action are:

Regionalisation

- Ensure that high TRL demonstration of technologies close to the market are specifically adapted to the local context
- Take social acceptability into account when developing technological solutions/ technology. Socio-economic studies accompanying technological projects are often needed.

Joint approach

- Accelerate the green transition and energy access Partnership with Africa/EU Green Deal Call as a possible instrument to promote a partnership between African and European researchers and private companies

Funding:

- Encourage national funding agencies and international funding institutions to cooperate launching Calls for projects addressing both the research and development stage (TRL 4 – 6) and the innovation stage (higher TRL) in order to promote collaboration between public and private sector and to target new markets

3. Capacity building, social sciences, humanities & resilience behaviour

The third session under the moderation of CCSE WG members Maria Figueroa and Elham Ali focused on determining key priority areas and actions towards building capacity in Africa and empowering women. The introduction to the session was provided by experts Silvia Sartori, ENERGIA, Paul Mbuthi, Ministry of Energy Kenya and Olasimbo Sojinrin, Solar Sister. Recommendations for action include:

Finance & market

- Ensure access to finance & savings including missing infrastructure and lack of access to markets
- Promote local innovations and opportunities along the energy value chain

Funding

- Remove complicated calls for proposals that exclude local practitioners, request for collateral that exclude women
- Use human-centred-design to develop programmes and solutions
- Co-funding and the governance of research funding belongs to capacity building, social and scientific humanities
- Ensure evaluation of actions on implementation

Research

- Define existing inequalities, differences in climate change impact on women and men based on the varied purposes between women and men in using energy
- Women should not be dealt with as only perceiving and using energy but also as a role player in sustainable energy and consequently in sustainable development (i.e. sustainable energy supply chain and Expanding DRE)
- Include digital inclusion and data and evidence including the use of data science

Policies

- Support women-led energy enterprises and support girls in STEM recruitment, retention, re-entry, and career advancement
- Go beyond perceiving women as victims of energy poverty, but as potential drivers of the sector. For example, energy gender policy, could be a crucial starting point
- Reduce legal and regulatory barriers, including power asymmetries
- Validate the policies implementation not just set the policies and make sure it is implementable at local (continent/country) level

Skills and capacity building

- Address the significant skills required, and workforce gaps in energy access in a way that empowers more skilled women to participate across the value chain
- Set-up capacity development programmes incl. skills building, agency, digital literacy, financial inclusion
- Suggest cooking classes for women to secure efficient energy usages

Regionalisation

- Be aware of community values, norms, and traditions. Local systems of patriarchy shape the daily lives of people in a community.

4. Good governance and policies

The fourth session was led by CCSE WG members Rafiq Hamdi, Kari Herlevi and Joseph Mwangi. The session was opened by Robert Kranefeld, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Shuaib Lwasa, professor at Makerere University and researcher at the Global Center on Adaptation. It was made clear that action must happen now as the accelerating global warming is taking place already. Recommendations for action include:

Capacity building

- International collaboration can enhance capacity building. Concrete examples for the case of cities are for example: [ICLEI, 100 cities](#).

Regionalisation

- Consider the local context when building funding schemes and think of co-ownership of the produced knowledge
- Include the most disadvantaged and vulnerable people when planning climate change actions

Joint approach

- Making the link between academia and industry with private and public sectors can create spin-off companies.

Funding & programming

- Need for co-designing of actions including all involved actors when building action for climate change to overcome the weak link between policy makers and science output
- Include both national and outside financial resources in order to fund climate change solutions
- Co-funding and the governance of research funding is of paramount importance, such as the need to work on meta-governance (example from the LEAP-RE project)
- Recommendation from LEAP-RE project: work on circular programming and impact analysis with a proper setting of monitoring tools and evaluation metrics
- Longer planning is needed for effective implementation mechanisms and coordination, such as for example the need to create local hubs physically based to hold the produced data and share knowledge with the local researchers