



# Role of research infrastructures in Africa-EU cooperation

**Conclusions of the 2012 CAAST-Net - PAERIP stakeholder conference  
(3-4 December 2012)**

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A Network for the Coordination and Advancement of Sub-Saharan Africa-EU Science and  
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Promoting African-European Research Infrastructure Partnerships



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# Introduction

## Context of the Conference

CAAST-Net (the Network for the Coordination and Advancement of Sub-Saharan Africa-EU Science and Technology Cooperation) and PAERIP (Promoting African-European Research Infrastructures Partnerships), two projects funded under the European Union's Seventh Framework Programme (FP7), convened a stakeholder conference in Accra, Ghana, on 3-4 December 2012, to consider how research infrastructure partnerships between Africa and Europe could be enhanced. The Conference explored cooperation opportunities within the framework of the Science, Information Society and Space Partnership (the so-called 8<sup>th</sup> Partnership) of the Joint Africa-EU Strategy (JAES), specifically within the context of cooperation in science and technology to address Africa and Europe's shared societal challenges related to health, food security and the environment, but also with regard to collaboration in the basic sciences more broadly. The more than 100 participants included representatives of African and European governments, research funding agencies, the research community, research infrastructure organisations, and civil society.

## About the Conference Conclusions

The conclusions presented in this document constitute a summary of the most salient views expressed by participants during the event's various plenary and parallel sessions. The Conclusions highlight the arguments put forward by participants on why research infrastructure partnerships between Africa and Europe should be concertedly promoted as a priority action in bi-regional cooperation. They also present specific recommendations how bi-regional research infrastructure partnerships could be enhanced, ensuring greater impact and mutual benefit for Africa and Europe. The Conclusions also confirm several findings made by PAERIP through various workshops and engagements conducted in both Africa and Europe.

The Conclusions were adopted by the participants during the final plenary discussion.

## Aim of the Conclusions

Participants requested that the Conclusions be presented to the principal bodies entrusted with the governance and advancement of the Science, Information Society and Space Partnership of the JAES, respectfully hoping that the conclusions would be duly considered and, as appropriate, encourage initiatives to support bi-regional research infrastructure partnerships. The Conference accordingly tasked the CAAST-Net and PAERIP project coordinators to transmit the Conclusions to the Co-Chairs of the Bureau of the Africa-EU Science, Technology and Innovation Policy Dialogue, the Co-Chairs of the Joint Expert Group of the 8<sup>th</sup> Partnership (JEG-8), the European Commission, as well as the African Union Commission.

At the request of the conference, the CAAST-Net and PAERIP coordinators, in addition to releasing the document for general public information, will also communicate the Conclusions to other important actors engaged in the implementation of the Science, Information Society and Space Partnership including Africa's Regional Economic Communities (RECs), the New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency, as well as the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and other United Nations entities involved in science and technology partnerships with Africa. Dissemination to the broader public will target, among others, research communities (including associations of science and technology professionals or organisations such as the African Network of Scientific and Technological Institutes), as well as policy-makers, representatives of industry and business (including the Africa-EU Business Forum), and diaspora organisations.

### Note to the Reader

This document has been compiled and submitted on behalf of the Conference by CAAST-Net and PAERIP. The conference agenda and presentations can currently be found on event web page <http://bit.ly/YcVQ5g>, which is available on the CAAST-Net website ([www.caast-net.org](http://www.caast-net.org)). During the course of 2013, the contents of the CAAST-Net website will be migrated to the website of the CAAST-Net Plus project ([www.caast-net-plus.org](http://www.caast-net-plus.org)), where the relevant conference documentation will then be accessible.

## **Policy recommendation:**

### **Research infrastructures should be a priority focus of bi-regional Africa-EU cooperation in science, technology and innovation**

After considering evidence from past, current, and planned Africa-EU research infrastructure partnership initiatives related to infrastructures such as bio-banks, phenotyping facilities, radiation sources, clean rooms, observatories, telescopes, databases, supercomputers and high-speed research networks, the Conference concluded that there were compelling arguments why international cooperation was essential in order to optimally exploit the potential of research infrastructures to contribute to societal and scientific advancement. In this context the found that bi-regional research infrastructure partnerships between Africa and Europe partnerships offered rich potential to deliver significant mutual benefit for both regions. The conference, thus, concluded that research infrastructure cooperation should be a priority focus for Africa-EU cooperation in science, technology and innovation.

The Conference specifically highlighted that **global partnerships are essential for research infrastructures – regions and countries cannot do it alone.**

- Research infrastructures are increasingly complex and costly, requiring the integration of equipment, services and data, and accordingly necessitate extensive international cooperation, with regard to the planning for and funding as well as governance of facilities, including as appropriate with regard to their regulatory aspects.
- Bi-regional research infrastructure cooperation can leverage efficiencies of scale and scope. International cooperation presents opportunities to avoid duplication of effort and investments, and to better coordinate and rationalise the use of facilities, where for example the small size of a user community do not merit new investments.

**That Africa and Europe can benefit significantly from cooperating in research infrastructures – it is fully aligned with the objectives of the Joint Africa-EU Strategy.**

- Africa and Europe enjoy a close political, economic and development partnership (as embodied in the JAES) as well as historic ties in cooperation in

science, technology and education, which over recent years has grown significantly – for example, Africa’s success in the FP7. Cooperation in research infrastructures can build upon, complement and enrich these partnerships.

- Africa and Europe have comparative advantages to offer each other as partner for international science and technology partnerships, which can also be exploited for research infrastructure partnerships. Such advantages could be of a geographic nature, for example, ideal observation conditions for astronomy, or pertain to access to unique resources, such as sample material for clinical trials or relate to specific technical expertise.
- Cooperation in research infrastructures is fully aligned with the overall objectives of the Joint Africa-EU Strategy, including with regard to sustainable development and capacity-building (indeed cooperation in research infrastructures is specifically mentioned in the JAES Second Action Plan for the Science, Information Society and Space Partnership.)

**That there are persuasive arguments for research infrastructures to be at the heart of the JAES Science, Information Society and Space Partnership.**

- Research infrastructures are key determinants of competitiveness and development and can further leverage the important role of science and technology investments in stimulating economic growth and sustainable development:
  - Research infrastructures trigger innovation and partnership with industry; and
  - Significant “non-science” benefits can be leveraged from research infrastructures (for example, employment creation, service delivery, non-research infrastructures, etc.)
- Research infrastructures are essential instruments for collaborative research addressing societal challenges;
- Research infrastructures are drivers for international cooperation and science systems;
- Research infrastructures encourage multi-disciplinary research;
- Research infrastructures foster excellence in research;
- Research infrastructures are enablers for researcher training and the international mobility of researchers and ideas;
- Research infrastructures are ideal platforms for science communication (public awareness and understanding) and science education programmes, for example, for the youth.

# **High-level objective and goals for Africa-EU research infrastructure partnerships:**

## **Harness research infrastructures for scientific advancement and innovation on both continents**

The Conference concluded that the high-level objective for Africa-Europe research infrastructure partnerships should be to optimally leverage such cooperation for scientific advancement and innovation in Africa and Europe. Specifically, partnerships should address the following goals:

- Ensuring the availability to African and European researchers of world-class research infrastructures to enable and support their bi-regional cooperation, by:
  - Establishing reciprocal access (to facilities) and research infrastructure networking (between facilities) programmes; and
  - Building, maintaining and operating research infrastructures required for global and bi-regional partnerships.
- Leveraging research infrastructure partnerships as instrument for science, technology and innovation capacity-building in both Africa and Europe.

## **High-level recommendations:**

### How cooperation in research infrastructures should be promoted as part of the Africa-EU Science, Information Society and Space Partnership

The Conference commended to those bodies entrusted with the stewardship of the Science, Information Society and Space Partnership to take specific attention, as appropriate, to the following considerations with regard bi-regional cooperation in research infrastructures:

- Cooperation between and coordination of national and regional research infrastructure programmes, in Africa and Europe, should be encouraged;
  - Specific attention should be paid in both regions to raise mutual awareness of the other's research infrastructure capacities and needs;
- Synergy between different international, regional and national funding programmes (for example, research, economic and social development funding instruments) with the potential to support research infrastructure partnerships should be promoted, in order to leverage better returns on investments;
- The potential contribution of research infrastructures to innovation and innovation systems should be fostered and exploited;
- Human capital needs of research infrastructures (for example, technical and managerial expertise) should be addressed;
- Research infrastructures should be leveraged as a tool for human capital development and institutional capacity-building within science and innovation systems.

## **Specific recommendations:**

### Actions to promote Africa-EU research infrastructure partnerships that could be implemented as part of the Science, Information Society and Space Partnership in 2013

The Conference urged bodies such as the Bureau of the Africa-EU Science, Technology and Innovation Policy Dialogue and the Science, Information Society and Space Joint Expert Group (JEG-8) to as appropriate, undertake and encourage specific actions to promote Africa-EU research infrastructure partnerships in 2013. Six specific recommendations are submitted for consideration:

1. A roadmap for Africa-Europe research infrastructure cooperation with regard to large-scale facilities should be developed and approved by relevant stakeholders. The roadmap should notably:
  - Identify global research infrastructure partnership initiatives, which could be supported through Africa- Europe bi-regional cooperation;
  - Explore the potential for Africa and Europe to jointly develop new large-scale research infrastructures as required by their user communities;
  - Investigate the feasibility of establishing regional partner facilities (in Africa or Europe as appropriate) for existing African or European research infrastructures (including but not limited to those on the roadmap of the European Strategic Forum on Research Infrastructures – ESFRI); and
  - Analyse the enabling legal and financial frameworks, which would be required for these partnerships to be pursued.
  
2. An analysis of available funding instruments to support bi-regional research infrastructure partnerships, both with regard to access to existing and the development of new infrastructures, should be undertaken by a mandated expert group. The analysis should include recommendations how these instruments could best be accessed. Specifically, the analysis should consider:
  - Opportunities for the current and future call for proposals of the FP7 ERA-Net for Africa, ERA-Africa, to support research infrastructure partnerships;
  - How the African Union Commission’s African Research Grants programme, currently supported by the European Commission, could support research infrastructure partnerships;

- The most appropriate manner to include research infrastructures in the programming phases of the National and Regional Indicative Programmes of the Eleventh European Development and the planned African Partnership Instrument of the new EU Development Cooperation Instrument;
  - How the EU-Africa Infrastructure Trust Fund and financing agencies such as the African Development Bank and the European Investment Bank could support research infrastructure partnerships;
  - Opportunities under the future EU Horizon 2020 Framework Programme for Research and Innovation to support bi-regional research infrastructure partnerships with Africa, including, as appropriate, African participation in the successor to the FP7 Integrated Infrastructure Initiative scheme; and
  - The development of indicators with regard to research infrastructure partnerships, which could be used in the monitoring of the implementation of the Second Action Plan of the JAES, to gauge the efficiency of investments.
3. Guidelines should be developed by a mandated expert group for the bi-regional integration and opening up, which is to say reciprocal access to, of existing African and European research infrastructure. This analysis should draw on best practices in current cooperation, for example compiled by PAERIP.
4. In the light of the important horizontal impact of e-Infrastructures across all research and innovation areas, the JEG-8 or other appropriated body should develop a framework document with policy guidelines for the advancement of on bi-regional cooperation in e-infrastructures. The framework should address among other issues:
- Identification of e-infrastructure capacity needs and constraints;
  - Best practices in the development, deployment and operation of e-infrastructures; and
  - Policy frameworks for data management, including the translation of “open access” principles in partnership schemes.
5. A specific event should be organised to explore how bi-regional partnerships can foster and leverage the innovation potential of research infrastructures, for example, with regard to:
- Encouraging research infrastructures to act as early adopters of technology;
  - Promoting R&D partnerships between research infrastructures and industry;

- Facilitating industrial use of research infrastructures;
  - Stimulating the creation of innovation clusters; and
  - Creating platforms for technology transfer.
6. An Africa-Europe cooperation programme should be developed to ensure the availability of the required human capital for research infrastructures. This programme could comprise training and exchange programmes for staff managing and operating research infrastructures.