

Findings and Recommendations for Decision-makers

1st CAAST-Net Plus Stakeholder Forum

Transferring Knowledge Into Solutions:
Africa-EU Strategies for Science, Technology and Innovation
Entebbe, Uganda | 24-25 November 2014



CAAST-Net  **PLUS**

Building Bi-regional Partnerships for Global Challenges

Copyright © 2015 by the CAAST-Net Plus consortium. All rights reserved.

CAAST-Net Plus (2013-2016)

Advancing Sub-Saharan Africa-EU Research and Innovation Cooperation for Global Challenges

AUTHORS: Ismail Barugahara (UNCST), Andy Cherry (ACU), Stefan A. Haffner (PT-DLR), James A. Haselip (UNEP DTU), Cheka Mailula (DST), Najia Musolino (COHRED), Arne Tostenen (RCN), Isabella Wagner (ZSI)

CONTRIBUTORS: Participants of the 1st CAAST-Net Plus Stakeholder Forum “Transferring Knowledge Into Solutions: Africa-EU Strategies for Science, Technology and Innovation” (24-25 November 2014) and CAAST-Net Plus partners. All contributions are gratefully acknowledged.

Please send any queries about this publication to enquiries@caast-net-plus.org.

Any citations to this publication should read:

CAAST-Net Plus (2015), *Findings and Recommendations for Decision-makers. 1st CAAST-Net Plus Stakeholder Forum “Transferring Knowledge Into Solutions: Africa-EU Strategies for Science, Technology and Innovation”*



CAAST-Net Plus is funded by the European Union’s Seventh Framework Programme for Research and Technological Development (FP7/2007-2013) under grant agreement n^o 311806. This document reflects only the author’s views and the European Union cannot be held liable for any use that may be made of the information contained herein.



Publication compiled by: Research Africa (www.researchresearch.com/africa)

Design and layout: Tracey Watson

Printed on Triple Green™



This publication contains the findings and recommendations for decision-makers that emerged from discussion at the 1st CAAST-Net Plus Stakeholder Forum. The forum convened 60 African and European experts working across three global challenge areas of special interest for CAAST-Net Plus: food and nutrition security, climate change, and health. The findings and recommendations presented here focus on the development of cross-cutting support mechanisms, frameworks and viable policy options for using science, technology and innovation (STI) to tackle these global challenges.

WHO SHOULD READ THESE FINDINGS AND RECOMMENDATIONS?

CAAST-Net Plus is designed to support both the formal EU-Africa partnership in STI and its associated High-Level Policy Dialogue (HLPD), as well as the broader Africa-EU STI relationship. As such, we address decision-makers in various contexts and at different levels:

Inter-regional context : e.g. High-Level Policy Dialogue (HLPD), InterAcademy Panel (IAP), African Union Commission (AUC), European Commission (EC), etc.

Sub-regional context : e.g. Regional Economic Communities (RECs) in Africa, Network of African Science Academies (NASAC), European Academies Science Advisory Council (EASAC), African Development Bank (AfDB), etc.

National/local context : e.g. Officials in the Member States (MS) of the AU and the EU, sub-national local entities, etc.

FORUM BACKGROUND

The 1st CAAST-Net Plus Stakeholder Forum was co-organised by the Uganda National Council for Science and Technology (UNCST), the International Bureau of the German Federal Ministry of Education and Research at the German Aerospace Centre (PT-DLR), and the South African Department of Science and Technology (DST). All background documents and presentations from the forum can be accessed from:

<http://www.caast-net-plus.org/object/news/994>

FINDINGS AND RECOMMENDATIONS

The **findings** of the 1st CAAST-Net Plus Stakeholder Forum are clustered around five major areas. Each area, in turn, contains a series of detailed **recommendations** and associated actions for implementation. The five areas are:

1

Establishing knowledge sharing and match-making structures to support stakeholder involvement in research and innovation projects

2

Fostering closer collaboration between academia and industry through the African RECs

3

Defining bi-regional STI roadmaps for societal challenges through participatory approaches

4

Supporting joint Africa-EU Centres of Excellence and Think Tanks

5

Strengthening of national and multinational innovation systems



CAAST-Net Plus stakeholder forums convene participants from Africa and the EU to discuss topics of mutual interest. [Image credit: CAAST-Net Plus]

1

Establishing knowledge sharing and match-making structures to support stakeholder involvement in research and innovation projects

The demand for enhanced collaboration and exchange of knowledge is becoming more and more obvious among stakeholders involved in innovation processes. From an initial idea or need through the research and the sharing of knowledge, to the implementation of new products, services and optimised societal frameworks, the expertise of several actors has to be combined in complex processes of communication and cooperation. The following recommendations address interfaces for innovation processes, and approaches to linking research and entrepreneurs. They also address the embedding of practitioners in research and projects for research uptake and innovation, multidisciplinary in research and research uptake, and the involvement of the diaspora, women and youth.

✓ CONCRETE ACTION AREAS

A. Match-making between African and European institutions working at the interface of research and innovation



Inter-regional context

HLPD

- Development of common roadmaps for specific global challenges.
- Development of strategies and programmes for the production and commercialisation of knowledge and innovations generated by existing pan-African thematic Science and Technology research initiatives (for example, for health), and that are supported through cooperation with the EU or EU MS.

Sub-regional context

RECs, NASAC, EASAC

- Coordination of policy dialogues for coherent STI policy environments in the context of National Development Plans (NDP).

National/local context

Ministries and local governments, economic institutions, institutions of civil society, research institutions

- Establishment of innovation centres and industrial science parks.
- Support for agricultural training for small-scale farmers based on their needs, developed together with private investors.
- Networked governance: Collaborative thinking and alignment of interests for the best common desirable outcomes through horizontal decision-making processes.

B. Providing incentives for good practice in linking research with entrepreneurship

WHO

?

HOW

?

Inter-regional context

HLPD

- Dialogue on the support of competitions for the best product, service or societal framework as a result of cooperation between African and European research institution(s) and entrepreneur(s).

Sub-regional context

RECs

- Yearly competitions for the best product or service as a result of the cooperation of sub-regional research institution(s) and entrepreneur(s).

National/local context

Ministries for research, science, education and economy together with institutions of the economy

- Yearly competitions for the best product, service or societal framework as a result of cooperation between research institution(s) and entrepreneur(s).
- Implementation of the COHRED Fairness Index (CFI), which is a certification system that can operate at national and institutional levels and is based on best practice guidelines of research collaborations between African and European institutions. CFI will consider existing guides, tools and international conventions related to research and innovation, and design new standards only when there are gaps or no guides available. A seal of approval from COHRED will certify best practices in the following domains: Responsiveness to Local Priorities; Impact on Research and Innovation Capacity; Financial and Management Transparency and Parity; Fair Distribution of Benefits and Burden; Reduction of Reputational Risk; and, Ensuring Ethical Principles.
- The CFI could be applied with necessary adjustments to the fields of health and food and nutrition security.

C. Embedding producers and service providers, such as small-scale farmers and entrepreneurs, in research and projects for research uptake and innovation — from conceptualisation through research and knowledge transfer to practice



Inter-regional context
HLPD

- Dialogue on the alignment of regional research grants, development instruments, and programmes for research and research uptake.

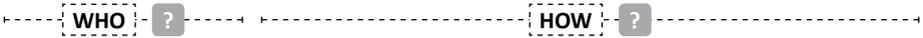
Sub-regional context
NASAC, IAMP, African Universities, institutions of the economy and entrepreneurs

- Availability of capital for creating platforms of collaboration between NASAC, the Africa regional office of the InterAcademy Medical Panel (IAMP), African universities and the private sector for the enhancement of novel innovation projects.

National/local context
Ministries for research, science and economy together with institutions of the economy and entrepreneurs

- Financial support and capacity development for adequate infrastructure and human capital for mediator entities at research institutions addressing academia-industry-entrepreneur cooperation.

D. Fostering multidisciplinary research to enhance the applicability of results across thematic domains to achieve impact for development



Inter-regional context
AUC, EC

- Integration of multidisciplinary approaches in all programmes.

Sub-regional context

- Establishment of regional research consortia and fora for multidisciplinary and collaborative research focussing on the global challenges.

National/local context
Ministries of research and economy, civil society organisations, local communities

- Establishment of national research consortia and fora for multidisciplinary and collaborative research focussing on the global challenges.
- Establishment of multidisciplinary technology platforms addressing issues of common interest across the societal challenges from the perspective of academic research and development practice.
- Curriculum reform in universities based on needs assessments undertaken at national level.
- Access for students from all academic backgrounds to multi-disciplinary professional training through exchange programmes in the private sector.

E. Involvement of the diaspora, women and youth as key actors to facilitate STI

Diaspora, women and youth can commit support for cooperation and investment, in particular for uptake of research in the private sector. Innovation should be driven by needs but also endeavour to tackle societal challenges. The World Bank's African Diaspora Program (ADP), which seeks to further enable and enhance the human and financial capital contributions of African expatriates to the economic development of their home countries, should be considered as a good practice example in this regard. The African Institute for Remittances (AIR) project, which is led by the African Union with the support of the World Bank and the European Commission, and in cooperation with the AfDB and the International Organisation for Migration, is another such example. High-quality evidence and data to promote pathways to innovations should be communicated. Incentives for entrepreneurs and SMEs enable value creation and innovation.

Inter-regional context*HLPD*

- Dialogue on the role and support of the African diaspora in bi-regional STI cooperation.
- Dialogue on the role and support of women and youth in education and STI.
- Development of supportive structures for individuals in the diaspora, such as the simplification of visas and mobility for consideration within MS.
- Inclusion of strategies relevant for fostering women and youth within bi-regional STI roadmaps in specific areas.

Sub-regional context*RECS*

- Moderation of a sub-regional dialogue on the involvement of the diaspora.
- Moderation of a dialogue on the role of women and youth for STI and development.

National/local context*Ministries of research and economy, civil society organisations, local communities*

- Inclusion of strategies relevant for fostering women and youth within bi-regional STI roadmaps in specific areas.
- Foster the transfer of local research to local production, linking products to economic development through creation of jobs, for example, for the production of vaccines or fertilizers in African countries, or anti-malarial bed nets produced in African countries and exported to African countries.
- Establishment or strengthening of repatriation programmes.
- Reduce brain drain by providing paid leave to African experts working outside Africa to transfer knowledge and skills in African institutions in their home countries.
- Invitations extended to guest lecturers at African universities, and assignments on consultancy.
- Foster permeability for women in science careers, and encourage and support youth to consider higher education and careers in STI.

Africa's Regional Economic Communities (RECs) constitute an intermediate level for intervention in supporting evolving country-level relationships between universities and research institutions, on the one hand, and the private sector, on the other hand. Thus far, African universities have largely not been adequately oriented toward the private sector and innovation, that is, with a view to producing industrial prototypes and services that the private sector could commercialise.



Dr Najia Musolino, senior specialist for global action at the Council on Health Research for Development [Image credit: CAAST-Net Plus]



Dr Patrick Worms, senior science policy advisor from the World Agroforestry Centre. [Image credit: CAAST-Net Plus]



Host and co-organiser, Ismail Barughara (UNCST), introduces co-organiser Stefan A. Haffner (PT-DLR). [Image credit: CAAST-Net Plus]



Dr Ole F. Olesen of the European Developing Countries Clinical Trials Partnership. [Image credit: CAAST-Net Plus]

✓ CONCRETE ACTION AREAS

WHO

?

HOW

?

Sub-regional context RECs

- The RECs could serve as a platform for suggestions for the necessary concrete steps that must be taken at the country level where governments have adopted policies and charted development strategies that may need revision to create an environment conducive to fostering closer relations between academia and the private sector. The RECs could thus be a driving force in encouraging their MS to improve their policy environments.
- The Association of African Universities (AAU) could assist in reforming the merit systems of universities towards offering greater credit to academic staff who contribute to innovation and patenting in conjunction with the private sector. Such action would incentivise academics to become involved in innovation endeavours.
- Within the East African Community, a case in point that could serve as a model for other RECs is the emerging collaboration between the East African Business Council and the Inter-University Council of East Africa. This relationship shows great promise and should be pursued vigorously and possibly emulated elsewhere in Africa. To be successful it should be linked to bi-regional collaboration with European counterparts in academia and the private sector.

National/local context *Ministries of research and economy, civil society organisations, local communities*

- Support for collaboration between universities and the private sector through university and specific industry institutions.
- The Linking Industry with Academia (LIWA) initiative of the Kenya Private Sector Alliance (KPSA) is a good practice collaboration example from which lessons could be derived.

Africa-EU roadmaps to tackle common societal challenges could play a crucial role for bi-regional cooperation in STI. To date, bi-regional STI roadmaps have largely been developed using top-down approaches, as opposed to bottom-up methods characterised by building consensus among key stakeholders. A bottom-up approach could increase the success in terms of achieving observable outcomes.

A shift toward consulting ‘grassroots’ communities is advocated for on the assumption that local communities and organisations are closer to the realities and impacts of the global challenges, and hence better-positioned to not only inform the relevant research and innovation needs, but also suggest how these might be addressed. A wholesale displacement of high-level officials and political authorities in the elaboration of roadmaps is not intended. Rather, the suggestion is that grassroots organisations become more closely involved in the conceptualisation, development, implementation and review of roadmaps. Experience has shown that stakeholders and communities are willing to participate in finding solutions to problems if they have co-ownership of the programmes.

Therefore, following a bottom-up approach, the involvement of civil society and the private sector in the development of roadmaps is crucial. The consultation of MS, particularly in an initial preparation phase for identifying national research and innovation priorities and needs before drafting a roadmap at the multilateral level, is also critical. At the multilateral level instruments for STI, but also instruments for development cooperation, have to be considered for bi-regional collaboration in STI.

✓ CONCRETE ACTION AREAS

WHO ?

HOW ?

Inter-regional context

HLPD, AUC, EC

- Striving toward coherence between STI and development policies.
- Reinforcement of the use of instruments for development cooperation for cooperation in STI.
- Inclusion of civil society, private sector (including financial institutions), and academia in the development of bi-regional STI roadmaps.

Sub-regional context

RECs

- Striving toward coherent policies for cooperation in STI and development cooperation in their sub-regions.
- Coordination of member state dialogue and contributions to the development of bi-regional STI roadmaps.
- Inclusion of civil society, private sector (including financial institutions), and academia in the development of sub-regional STI roadmaps.

National/local context

MS

- Striving toward coherent policies for cooperation in STI and development cooperation with in their countries.
- Reinforcement of the use of instruments for development cooperation for cooperation in STI.
- Use of the Medium Term Expenditure Framework (MTEF) to advocate STI in the context of a bi-regional roadmap.¹

¹ MTEF is a government strategic policy and expenditure framework consisting of a top-down resource envelope and bottom-up current and medium-term estimations (usually in a 1-5 year period).

Significant benefit could be derived by establishing or strengthening existing thematic Centres of Excellence to conduct specific analyses and studies, including STI foresight, STI policy-making, investment appraisals and impact analyses in various thematic domains. Support to joint Africa-EU Centres of Excellence and Think Tanks should be given through capitalisation, resourcing and twinning and/or teaming of African and European institutions. Other innovative and smart networking arrangements could also be delivered as a capacity building programme. The European-South Africa Science and Technology Advancement Programme (ESATAP, ESATAP 2 and ESATAP Plus), and the UK-South Africa Newton Fund for Science and Technology Partnership, could be considered as example initiatives in this regard.

✓ CONCRETE ACTION AREAS

A. *Strengthening of existing thematic Centres of Excellence through capitalisation, resourcing and twinning of African and European academies*

WHO

?

HOW

?

Inter-regional context *AUC, EC*

- Establishment of a joint capacity development programme for strengthening thematic Centres of Excellence.

Sub-regional context

- Establish regional level capacity development programmes. Current examples include: OHCEA (One Health Central and Eastern Africa), AFENET (African Field Epidemiology Network), RUFORUM (Regional Universities Forum for Capacity Building in Agriculture), EAIDSNet (East African Integrated Disease Surveillance Network), and SACIDS (Southern African Centre for Infectious Disease Surveillance).

National/local context

- Establishment and/or designation of thematic Centres of Excellence.

B. Think Tanks could be set up to draw on scientific expertise from Africa and Europe and as well as on the input of other stakeholders, and enrich the intellectual resources available to Africa-EU policy-makers with regard to STI cooperation

WHO

?

HOW

?

Inter-regional context
AUC, EC

- Agreement on a common definition of a “Think Tank” vis-à-vis a “Centre of Excellence”.
- Establishment of existing thematic networks, for example, in health, agriculture and environment as Think Tanks.
- Concerted effort should be made toward achieving more twinning arrangements to promote collaboration between Think Tanks to exchange experiences.
- FANRPAN (Food, Agriculture and Natural Resources Policy Analysis Network) should be promoted and supported as a Think Tank in the area of FNS and climate change.

Sub-regional context
RECs

- Moderation of a MS dialogue on Think Tanks.

National/local context
*Ministries for research,
economy and
development*

- Investing in Think Tanks.

Innovation is understood and implemented differently by both EU and AU MS, and within different sectors and thematic areas. The diversity of definitions, nomenclatures and approaches to innovation across nations calls for a common understanding to enhance cooperation and comparability of results of innovation efforts across countries. The OECD has developed meta-data manuals and instruments for the measurement of innovation efforts across its MS. The AUC has developed similar instruments under the NEPAD African Science and Technology Indicators Initiative (ASTII) and the African Observatory of STI (AOSTI). In addition to the OECD-based approach of measuring the status of national innovations, the United Nations Industrial Development Organization's methodology of National Systems of Innovation should be considered.

✓ CONCRETE ACTION AREAS

- A. Efforts invested in innovation systems need to be supported to cover all AU MS and to build the necessary infrastructure and human resource capacity for the development of national innovation systems**

WHO

?

HOW

?

Inter-regional context

HLPD

- Dialogue on national innovation systems.

Sub-regional context

RECS

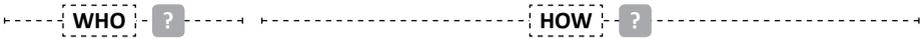
- Moderation of a MS dialogue on innovation systems.

National/local context

Ministries for research, economy and development

- Dialogue and structural support for the institutionalisation of national/local innovation systems through involvement of research institutions and institutions of policy and the economy, including SMEs and civil society.

B. As an interface between industry and research institutions, EUREKA could be a model transferrable to Africa²



Inter-regional context

HLPD

- Dialogue on the EUREKA model as a starting point for a similar African initiative.

Sub-regional context

RECs

- Dialogue on the EUREKA model with representatives of EUREKA as a starting point for a similar African initiative.

National/local context

Ministries for research, economy and development

- Dialogue on the EUREKA model with EUREKA partner countries as a starting point for a similar African initiative. South Africa is an experienced associated partner of EUREKA and would be relevant for other African countries to consult with in collaborating with Europe on this type of initiative.
- EUREKA's Eurostars Programme should be considered, since it is specifically dedicated to support SMEs to innovate and compete internationally.

² The EUREKA European research initiative emerged in 1985 with a goal to motivate cross-border co-operation between industry and research institutions in the area of technological research and development. The initiative aims at concentrating the existing potential of specialists, know-how, research facilities, and financial resources in Europe in order to make more efficient use of all these elements. In this way, EUREKA contributes to the competitiveness of European industry within global markets. It is a long-established public network, present in over 40 countries in Europe. South Africa is the only associated African country so far. For more information visit www.eurekanetwork.org

C. Reinforcement of the OneHealth Initiative

The OneHealth Initiative, a global strategy to address interdisciplinary collaboration in health (human, animal and environmental), the Laboratory Twinning Programme, and the Veterinary Education Twinning Programme of the World Organization for Animal Health (OIE), are complementary twinning programmes as a part of the wider OIE efforts to collaboratively support and improve the capacity of veterinary services in developing countries. These initiatives could be reinforced within the context of African health challenges.



Inter-regional context *HLPD*

- Dialogue on the potential reinforcement of the OneHealth Initiative, the OIE Laboratory Twinning Programme and the Veterinary Education Twinning Programme.

Sub-regional context *RECs*

- Dialogue on the OneHealth Initiative, the OIE Laboratory Twinning Programme and the Veterinary Education Twinning Programme with representatives of the initiative.

National/local context *Ministries for research, economy and development*

- Dialogue on OneHealth Initiative, the OIE Laboratory Twinning Programme and the Veterinary Education Twinning Programme with representatives of the initiative.
- Re-enforcing of One Health Initiative through increase in African representatives on the Board of Trustees to voice local and complex African health challenges.

D. Establishment of African and European STI attachés in Brussels and Addis Ababa, as a structure for immediate dialogue and action between all the MS, their National Contact Points and multilateral institutions



Inter-regional context
AUC, EC

- Establishment of regular meetings of STI attachés in Addis Ababa or Brussels.

Sub-regional context
RECs

- Regular involvement of STI attachés in REC activities or nomination of STI attachés representing the sub-region.

National/local context
*Ministries for research,
economy and
development*

- Nomination of STI attachés.

E. Policy advocacy for science to promote local innovation systems within communities, governmental institutions and development banks, as well as for the development of science policies and the positioning of science within national, sub-regional and regional development plans



Inter-regional context
AUC, EC, MS

- Dialogue on the alignment of regional research grants, development instruments and programmes for research and research uptake.
- Establishment of a successor programme to ERAfrica for joint funding of research projects.

Sub-regional context
Sub-regional context
RECs, NASAC, EASAC
AfDB

- Establishment of a Sub-Regional Counsellor for Research & Innovation as part of the delegation of the region to the African Union.
- The African Development Bank may be approached with recommendations to expand its financial instruments, such as the African Guarantee Fund (AGF), for application to sectors such as in health.

National/local context
Ministries for research,
science and economy

- Establishment of national science officers to represent their country in the RECs and in the AU. This could also happen in combination with the National Contact Point role.
- Advocacy by the science officers for strengthening the role of science within their societies through development and implementation of STI plans as integral parts of MS NDP, including the private sector.
- Using the Medium Term Expenditure Framework (MTEF) to advocate for STI.
- Support SMEs through tax reductions, stronger legal protection and flexible access to capital provided by the government for SMEs working with local resources.

PROPOSALS FOR FOLLOW-UP STAKEHOLDER ENGAGEMENT

In order to push ahead with the actions recommended here, CAAST-Net Plus has begun to plan follow-up stakeholder meetings. The topics outlined below are two among many others addressed in this paper that could be pursued within the context of future engagements.

I. Stakeholder forum to support the development of programmes for fostering academia-industry cooperation

There is a need to foster academia-industry collaboration for mutual understanding and evidence-based decision-making. Concrete actions to achieve this include:

- support for ‘embedding arrangements’ for industrial training that involve the supervision of students by both academics and entrepreneurs;
- coordinating or establishing new or existing platforms for collaborative research;
- joint investment ventures; and,
- other avenues for academia-private sector cooperation in technology transfer, research, product development and commercialisation.

In order to achieve these objectives, a systematic and long-term approach, with interconnected databases of actors and exchange programmes, is needed. The creation of a network of scientists, for instance a Network of Scientists in Africa that is similar to the Global Young Academy, could be considered. This network would retain concrete links with local industry in Africa to raise the public profile of local scientists as well as advise on academic projects in collaboration with business.



CAAST-Net Plus stakeholder forums emphasise frank discussion between participants.
[Image credit: CAAST-Net Plus]

II. Stakeholder forum on mechanisms and approaches to include STI in National Development Plans

The position STI holds in national development frameworks is an indication of the prioritisation and emphasis that countries place on the role of STI in development. National budget decisions are mostly guided by policy priorities indicated in development frameworks. Similarly, bilateral and multilateral funding and development instruments are guided by national development frameworks. For example, the AfDB is currently implementing various STI programmes in African MS with a particular emphasis on research infrastructures.

It is therefore essential that STI plans are integrated into NDP in order to ensure that they are adequately resourced and implemented. Topics to be addressed within a future CAAST-Net Plus stakeholder forum include:

- the development of scenarios for governments on the role and benefits of STI;
- development and integration of STI plans into NDP;
- streamlining the institutional arrangements on STI based on best practices to achieve impact;
- development of a template for roadmaps for funding STI by governments, the RECs and the AU under STISA-2024; and
- templates for STI funding under European Development Fund (EDF) 11, the Development Cooperation Instruments (DCI) and other EU instruments of development cooperation.



Follow us online



www.caast-net-plus.org



Like us on Facebook



Follow us on Google +



Find us on LinkedIn



@CAAST_Net_Plus



enquiries@caast-net-plus.org