
TOWARDS BETTER SYNERGY BETWEEN S&T AND DEVELOPMENT: WORKSHOP REPORT - 23-24 APRIL 2009, KAMPALA

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EXECUTIVE SUMMARY

1. The CAAST-Net project is designed to establish a platform for improving cooperation in science and technology (S&T) between Europe and sub-Saharan Africa. Under the umbrella of CAAST-Net, Work Package 2 (WP2) is addressing the interface between S&T under the Framework Programmes (FPs) and the broader development endeavours towards poverty reduction and food security, especially within the context of the European Development Fund (EDF) as a main instrument of development cooperation.

2. Over the years there has not been much synergy between the objectives of EDF programmes for Africa and the output from African participation in successive Framework Programmes. Few EDF-funded activities—nationally or regionally—have a specific science and technology capacity-building component. Similarly, S&T has also not been optimally integrated into broader thematic development cooperation activities.

3. WP2 has analysed the existing S&T landscape in relation to broader development efforts in Africa and made recommendations on how synergies between the EU's respective instruments for S&T and development cooperation with Africa could be improved. The analyses and recommendations are contained in two reports, namely 'Analysis of Synergies between the European Development Fund and Framework Programmes' and 'Towards Better Synergy between S&T and Development: Proposals and Recommendations'. Although separate outputs, the two reports are complementary and provide an analysis of the policy and institutional landscape as far as S&T and development are concerned in the EU and Africa alike. They also suggest possible approaches to the forging of greater synergy between science and technology and development. Hitherto, these pursuits seem to have been running on parallel tracks.

4. These reports provided the basis for discussion at a two-day workshop that was held on 23-24 April 2009 in Kampala for eminent Africa- and Europe-based scientists, policy makers and development practitioners. The reports were supplemented by case studies of Tanzania and the East African Community (EAC). The country level case study examined the underlying factors of Tanzania's relative success in accessing the EU FPs, while the regional case study examined the process, level of influence of RECs through the EAC example on national and regional science, technology and innovation (STI) agendas, as well as the alignment of regional S&T programmes within the Regional Indicative Programme (RIP) which is the regional funding instrument for the EDF.

5. The participants lamented the deplorable state of S&T development in Africa regarding the financing, human resource capacity, research facilities, linkage of S&T and development, although varied as Africa is not a homogeneous entity. This state of affairs has hindered Africa's participation in international cooperation activities including the EU Framework Programmes. The participants endorsed the reports and recommendations and further proposed the following:

A dialogue on the bridge of S&T and development should be carried out on different levels—national, regional and continental—and incorporate topics such as the link between S&T, quality

education and development; the link between S&T, development and thematic areas, especially those already defined within the EU-Africa Strategy (for example, agriculture, health, energy, environment); the S&T and the rural community including exploitation of indigenous knowledge. Such regular fora on S&T and development should be sought in African as well as in European countries.

6. On the African side, such fora should feed their results into the RECs. One of the objectives of a high-level forum would be that African countries raise their investment in S&T as a proportion of their GDP to 1 per cent (as has already been pledged but in most countries not realised). Correspondingly, on the donor side the commitment to provide 0.7 per cent of GDP to Official Development Assistance (ODA) should be honoured. A concrete recommendation was to ensure the inclusion of S&T as a component in national poverty reduction strategies in order to boost socio-economic development. The dialogue activities would need to be embedded in the Joint EU-Africa-Strategy in order to guarantee effectiveness and transparency.

7. A framework should be established for linking S&T and development at project levels, and in the European context aimed at making existing programmes such as FP7 more applicable to Africa by influencing the direction through calls. The calls could be more targeted and include elements that would give a bonus to proposals that include suggestions as to how results of research projects would apply to development endeavours. This would act as an incentive for researchers to synergise with the development sphere. Another possibility might be special funds to facilitate the application of research results to ODA. The upcoming ERA-NET with Africa and its mechanisms can be used to take stock of existing initiatives and activities. A complementary effort by African national authorities could be the creation of demand in international collaboration through the establishment of NCPs, the organisation of working sessions, and training days on how to prepare applications in conjunction with European colleagues under FP7.

8. For the long-term and the programming of the next European Framework Programme (FP8), new ideas regarding the design of the FP should be directed to the European Commission. The incorporation as an overall objective of FP8 might be 'contributing to the tackling of global challenges' and be reflected in joint European-African applications. Another option would be the re-introduction of the INCO programme (that had been part of the FP6) and which was designed especially to support collaboration with partners from the South. Influence over the programming of FP8 can be exerted through the delegates of the European Member states taking part in the programme committees. An overall achievement would be to make the Framework Programme more user-friendly, as it is not an easy task even for European researchers to deal with the requirements of the FP.

9. An important element in the linkage of S&T and development is the bridge between research and the private sector, especially industry. Exchange programmes between small and medium-sized enterprises (SMEs) and research institutes in Africa or between Africa and Europe would encourage cooperation. It was recommend to form so-called 'confederations of industry' in Africa that could act as interlocutors for European research partners and that would facilitate international cooperation. In the European-African context, a Specific International Cooperation Action (SICA) would not be the

appropriate instrument for strengthening Intellectual Property Right (IPR) capacity. It was recommended, however, to include the issue of IPR into the topping up of the CAAST-Net project (foreseen as from 2010) and consider modalities within the framework of the expanded CAAST-Net project. This activity would have to be linked closely to the proposed Pan-African Intellectual Property Organisation (PAIPO)—Lighthouse Project of the African Union—once it is operational, as well as to the Francophone and Anglophone agencies dealing with IPR.

10. The overall objective of establishing stronger links with African Diaspora scientists is to utilise their expertise, networks and partnerships for development and hence achieve a shift from 'brain drain' to 'brain circulation'. Possible implementation scenarios discussed were the creation of focal points of Diaspora relations, the creation of national coordination agencies (NCA, preferably containing a chief officer plus secretariat) dealing with Diaspora issues be housed at a high-level (for example, in the office of the President). Their role would be to establish links with the Diaspora and set up physical and virtual networks of communication channels.

11. The feasibility of the Diaspora suggestion would depend on political will and a clear demonstration of the national and Diaspora scientists' added value to national development. Also, incentives for Diaspora scientists would have to be created in order to attract their interest in activities in their country of origin.

12. As regards the suggestion's financial aspect, sustenance funding (own resources) could be one option. Furthermore, existing programmes could be instrumentalised to pay for the generated expenses, as well as subventions from national governments or UN agencies. Another option would be the provision of seed funding through the FPs or the EDF.

13. The success of the 'utilisation' of Diaspora scientists could be measured by, for example, counting the number of them participating in joint research projects with researchers from African countries; by measuring the resource inflow; by access to international facilities as a result of their facilitation.

14. To guarantee sustainability of such attempts, Diaspora programmes would need to be implemented on a long-term basis. Additional measures would be the provision of dual citizenship, an increased level of institutional cooperation on bilateral and multilateral level, encouragement of public-private partnerships that are self-sustaining and also to build a link to innovation promotion and patents.

15. Diaspora initiatives need to address various stakeholders in order to be implemented well, such as national ministries of S&T and development, ministries of foreign affairs (including embassies), regional economic communities, the AU, UN agencies, public and private institutions as well as NGOs.

16. The outcome of the discussions is expected to enrich the WP2 deliverables and contribute to the ongoing EU-Africa dialogue on the interface between science, technology cooperation and development.

ACRONYMS AND ABBREVIATIONS

ACP	Africa Caribbean and Pacific Countries
ACST	African Cluster for Science and Technology
AIDCO	Aid Coordination
AMCOST	Africa Ministerial Conference on Science and Technology
ASIF	African Science and Innovation Fund
ASTII	Africa Science and Technology Indicators Initiative
AUC	Africa Union Commission
CAAST-Net	A Network for the Coordination and Advancement of Sub-Saharan-EU Science and Technology Cooperation
COSTECH	Commission for Science and Technology in Tanzania
CPA	Consolidated Plan of Action
DFID	Department for International Development (UK)
DG	Directorate-General
DNA	<u>D</u> eoxy <u>R</u> ibonucleic <u>A</u> cid
DST	Department for Science and Technology
EAC	East African Community
EASTECO	Establishment of East African S&T commission
EDF	European Development Fund
ERA-Net	European Research Area Network
EC	European Commission
EU	European Union
FP	Framework Programmes
GDP	Gross Domestic Product
GTZ	German Technical Assistance Programme
ICT	Information and Communication Technology
INCO	International Cooperation Programme
INCONTACT	Network of National Contact Points (NCP) for International Scientific Cooperation Activities (INCO) funded in the 7th Framework Programme of the EU
IST-Africa	Information Society for Africa Project
MSFPED	Ministry of Finance, Planning and Economic Development
NCA	National Coordination Agency
NCP	National Contact Point
NGO	Non Governmental Organisation
ODA	Overseas Development Assistance
PAIPO	Pan African Intellectual Property Organisation
PRSP	Poverty Reduction Strategy Papers
R&D	Research and Development
RCN	Research Council of Norway
REC	Regional Economic Community
RIP	Regional Indicative Programme
RISP	Regional Indicative Strategy Paper
RSP	Regional Strategy Paper
RTD	Research and Technology Development
S&T	Science and Technology
SADC	Southern Africa Development Community

SICA	Specific International Cooperation Action
STI	Science, Technology and Innovation
UN	United Nations
UNCST	Uganda National Council for Science and Technology
WP	Work Package

INTRODUCTION

The CAAST-Net project is designed to establish a platform for improving cooperation in science and technology (S&T) between Europe and sub-Saharan Africa. Under the umbrella of CAAST-Net, Work Package 2 (WP2) as one of seven constituent work packages is addressing the interface between, on the one hand, S&T under the Framework Programmes, and, on the other, the broader development endeavours towards poverty reduction and food security, especially within the context of the EDF as a main instrument of development cooperation.

Over the years there has not been consistent alignment and indeed very little synergy between the objectives of EDF programmes for Africa, on the one hand, and the opportunities for African participation in successive Framework Programmes, on the other. Consequently, very few national and regional EDF-funded activities have a specific science and technology capacity-building component. Similarly, S&T has also not been optimally integrated within the broader thematic development cooperation activities.

WP2 has analysed the existing landscape as far as S&T is concerned in relation to broader development efforts in Africa and made recommendations on how synergies between the EU's respective instruments for S&T and development cooperation with Africa could be improved. Second, the analyses also determine how different EDF activities focused on various thematic areas (for example, health, the environment or agriculture) could be enhanced through a stronger S&T emphasis. Third, consideration is given to the possible allocation of EDF funding to support African participation in FP7.

1. THE WORKSHOP

With a view to discussing the two substantive outputs from WP2 a workshop was convened in Kampala on 23-24 April 2009. The participants included eminent Africa- and Europe-based scientists, policy makers and development practitioners.

1.1 Purpose and Objectives

In respect of implementing its objectives WP2 produced two substantive reports regarding synergies between S&T and development endeavours:

- i. Deliverable 2.1: Analysis of Synergies between the European Development Fund and Framework Programmes;
- ii. Deliverable 2.2: Towards Better Synergy between S&T and Development: Proposals and Recommendations.

Although packaged separately, the two reports are complementary and provide an analysis of the policy and institutional landscape as far as S&T and development are concerned in the EU and in Africa. They also suggest possible approaches to forging greater synergy between science and technology and development. Hitherto, these pursuits seem to have been running on parallel tracks, apparently rarely meeting. The reports provided the basis for discussions at a two-day workshop at the Imperial Royale Hotel in Kampala, Uganda. The workshop was organised by the Uganda National Council for Science and Technology (UNCST) and the Research Council of Norway (RCN), who are WP2 co-leaders (a full list of participants is included as appendix 3 to this report). The workshop discussed the two reports and deliberated on the recommendations. The outcome of the discussions is expected to contribute to the ongoing EU-Africa dialogue on the interface between science, technology cooperation and development. Below is a summary of the workshop deliberations.

1.2 Welcoming Remarks

The Commissioner for Economic Policy, Research and Development, Mr. Michael Tukei Opolot, represented and officially opened the workshop on behalf of the Minister of State for Finance, Planning and Economic Development (MSFPED). In his opening statement, the minister reiterated the importance the Ugandan government attaches to S&T and pointed out several efforts towards application of S&T in all spheres of the economy, such as the integration of S&T into the national development framework. He noted that the WP2 reports provide useful resources for politicians and bureaucrats in Africa and was optimistic that although Africa faces several challenges ahead, with clear policies and effective strategies and strong international cooperation those can be met.

The Uganda National Council for Science and Technology (UNCST) Executive Secretary, Dr. Peter Ndemere, reiterated the UNCST's support of cooperation efforts between Africa and Europe in the field of S&T through CAAST-Net.

He indicated that Uganda had signed a bi-lateral S&T agreement with South Africa to strengthen South-South cooperation. CAAST-Net Africa Region Coordinator, Dr. Eric Mwangi, indicated that the meeting sought to solicit ideas and contributions from the participants on the WP2 deliverables beyond what had already been discussed within the CAAST-Net consortium.

2. WORK PACKAGE 2 REPORTS

The two deliverable reports were presented by Ismail Barugahara and Arne Tostensen as WP2 co-leaders. Below are the highlights of the reports:

2.1 Analysis of Synergies between the European Development Fund and Framework Programmes

The report notes the following:

- i. Technology is absent in poverty reduction strategies and the Africa Peer Review Mechanism (APRM) reports.
- ii. Knowledge systems in Africa are weak: technological capability levels of domestic enterprises are low; tertiary education enrolment rates in science fields are small; curricula are not oriented towards problem solving; applied research at African universities is limited.
- iii. The traditional view of research for publication and career development at universities still predominates; outreach is neglected; industry itself is not proactive in R&D; catch-up strategies are needed for building domestic knowledge bases.
- iv. The FP7 is Europe-driven but open to third countries. From the project design point of view the key constraints to Africa's participation in FPs are the principles of co-financing and reimbursement.
- v. The EDF is the principal instrument for development cooperation through national and regional indicative programmes. The Intra-ACP programme on S&T is not optimally integrated into the EDF.
- vi. With regard to Africa's S&T landscape to date, there are weak institutional, infrastructural, human, financial, policy and programme capacities across the continent.
- vii. Digital and economic divides between developed and developing economies militate against African-European S&T collaboration and preclude Africa from benefiting from cutting-edge technological advances. Africa is an importer of and a market for technology-intensive products.
- viii. Africa has however made significant development efforts: well articulated planning instruments such as Poverty Reduction Strategy Papers (PRSPs) or home grown poverty reduction strategies; the Consolidated Plan of Action (CPA), CPA policies, institutions, and programmes across Africa under the ASTII; African framework for cooperation in S&T; centres of excellence in biosciences, technology parks and many others.
- ix. Africa's participation in FPs is very limited, the main reasons being the nature of FP instruments and procedures, fragmented economic structures and disjointed S&T and development environment, gaps between technology policy and practice, and Africa's limited participation in global policy decision-making fora.

- x. Measures have been taken to bridge the S&T and development gap: Cape Town Consensus 2002; Joint EU-Africa Strategy 2007; Lighthouse Projects of AUC (Book of Projects).
- xi. Country case study of Tanzania: comparatively successful in tapping into FPs; applications mostly European driven, Tanzanians came in at a later stage.
- xii. Regional case of the EAC: the overall goals of Regional Strategy Paper (RSP) and Regional Indicative Programme (RIP) for 2008-2013 under EDF 10 are poverty reduction and the MDGs as focal areas; higher education and S&T feature under the non-focal programmes; the Inter-University Council for East Africa is already in place; an East African Commission for S&T is being established.

2.1.1 Discussion of Report

The report was discussed by Dr. Botlhale Tema, a member of the Advisory Panel of the CAAST-Net Project and a private consultant affiliated to the Department for Science and Technology in South Africa. She made the following observations:

- i. Most reports on Africa give a static snapshot look of Africa, but when you compare African countries today with yesteryear there is movement and growth to be seen. Africa is not homogeneous, the complexity and diversity is immense, which might be one reason for lagging behind. There is not enough recognition of individual effort and progress made or about to happen. Taking the case of Mozambique, one is able to notice significant progress in science and technology against the background of recent socio-economic instability. The point is not the lack of progress, but what is being done to remedy it.
- ii. The report does not distinguish between bi- and multilateral cooperation activities. Bilaterally, some countries have individually responded to FP calls with varying levels of success. Multilaterally the EU is deeply involved with the AUC in providing direct funding for different programmes and sometimes utilising the EDF.
- iii. The report catalogues but does not explain. How do we find solutions if there is no interpretation and explanation? The catalogue or overview is ahistorical: already in 1999 a world conference on science declared that S&T should be for the well-being of people, and became a guideline for doing science. Africa is lacking in many respects, but is catching up. Though WP2 did analyse, it was too soon to jump into the instruments; the problem is still not well understood.
- iv. The report on WP1 workshop outcomes (INCONTACT/CAAST-Net NCP workshop, 1.-3.12.2008, Pretoria, South Africa) recommends that African inputs must be clearly presented as regards cooperation with the EU. There is a danger of focusing efforts on accessing the funding instruments rather than on what can be done with the funds.
- v. The FP is like partaking in a dinner you have been invited to; you cannot change the menu, but you can influence the conversation. In other words, indirect influence is possible.
- vi. Nevertheless, participation in the FP helps to benchmark performance of African scientists; it provides a challenge and there is pride in collaborating with the best in

- the world; it provides an opportunity to learn and bring back new skills; the financial investment in beneficial.
- vii. In Africa politicians and economists are not (yet) convinced about the returns on investment in S&T. Scientists only speak among themselves, do not speak the language of politicians; there is a lack of understanding that both 'worlds' share common concerns; there are no demonstrable economic breakthroughs related to R&D in Africa yet as proof of the benefits of S&T (similar to NOKIA).

The conclusion is that:

- i. The historical background must be taken into account, not only the current state of affairs;
- ii. National priorities and motivation will determine participation in FPs;
- iii. The creation of an enabling environment is of utmost importance;
- iv. EU scientists should be able to engage in S&T that is related to Africa's development priorities;
- v. Development agencies should be more convinced about the importance of S&T;
- vi. Policy dialogue at the highest levels between the EU and the AU should focus on investment in science.

Reflection on the following issues is required:

- i. What kind of help do countries like Mozambique need to build a strong and vibrant STI system?
- ii. How can CAAST-Net facilitate greater participation in FP—a brokerage role?
- iii. How can we access EDF specifically for S&T infrastructure and also make European IT capacities such as GEANT (a high speed European communication network dedicated to research and education) available for African researchers?
- iv. How can we use the implementation of the CPA to build the numbers of African scientists with a good S&T track record?
- v. How can we strengthen the AU scholarship programme funded through the EDF and develop an Erasmus programme for African scientists.

2.1.2. Plenary discussion

The participants made the following observations:

- i. The role of S&T in development should be acknowledged, but the development side has tended to question this. Maybe S&T is not the right short-term development instrument because the impacts are only long-term. Politicians still need to be persuaded to make long-term investments in S&T. CAAST-Net can play a facilitating role.
- ii. It is misleading to say, however, that Africa does not try to link S&T to development. Tanzania is a case in point; in 1974 the geological department of the University of Dar es Salaam began to endorse PhDs to build human capital. Gradually, the politicians

- saw the wisdom of this move and supported it. 'Innovation' is the key issue in this perspective (STI) as it is part of the development context.
- iii. There is certainly a need to show the dividend of science. It is the task of scientists who have to show that countries benefit from S&T (for example, China and India), even in a long time horizon of 20-50 years (the discovery of the 'DNA' is a prime example). It is understandable that there is competition between sectors for budget allocations but 30–60 per cent must come from the private sector as is the case in nations that have successfully harnessed S&T for development.
 - iv. In agreement with Dr. Tema's comments, there is much more S&T effort in Africa currently; continued strengthening of bilateral relations in S&T with African countries is important. This is so because only one science agenda is not enough for Africa, a regional approach might be more suitable.
 - v. In CAAST-Net African ownership must be strengthened, including the role of the regional coordinator. The top-up proposal in 2010 will focus on that and discussions with RECs have already been started. CAAST-Net's contributions to enhancing EU-Africa cooperation are evident in WP4 (identification of subjects) in bringing scientists together and developing agreements for the EC; the information days organised by WP5 are important tools for raising awareness and participation by African scientists.
 - vi. Framework Programmes are currently Europe-driven but this might be modified somewhat. If Africa has a strong and (united) voice, the European side will have to respond, for example through joint/new instruments, akin to the INCO in FP6. Dialogue can be used to take into account the interests of the African side. For the programming of FP8 changes might be achieved.
 - vii. Lighthouse projects include six (6) early deliverables in three thematic areas. The role of CAAST-Net should be to discuss how to implement them. Political endorsement is already secured and the practicalities of implementation remain. Once implemented the early deliverables will provide good examples of successful investment in S&T and form the basis of further cooperation. However, the Lighthouse projects are at a risk of becoming a frustration. The EC has accepted the African proposals, but does not seem to have the right financing instruments. Policy dialogue is also required to better understand the African side.
 - viii. Brain drain/circulation needs to be discussed in order to be able to appreciate the benefits for both sides. Europe has the problem of an aging population. Scientists and knowledge move easily nowadays, but to be productive and innovative scientists need to work in good scientific environments. The host country could benefit from brain circulation/mobility. To that end programmes and instruments need to be created that allow for flexibility (for example, short-term professorships, fixed-term secondment). But more emphasis should be put on the building of capacity and infrastructure.

Questions:

- i. What is the state of affairs with regard to the CPA? Is it under revision?
- ii. What is the role of the RECs regional strategic papers?

- iii. What development instruments exist other than those of the EC (for example, AIDCO) and what do they offer for the time being and what can be done to influence their programming?

Clarification:

- i. The reports tried to be provocative and presentation was stylised; nuances might have been glossed over.
- ii. This particular workshop was WP2-related; not all CAAST-Net concerns could be addressed here but will be kept in mind for future discussions at appropriate occasions.

2.2 Country and Regional Case Studies

The case studies were presented by representatives of the two key S&T institutions in the East African region: the Commission for Science and Technology in Tanzania (COSTECH) at the country level and the East African Community (EAC) at the regional level. The country case study examined the underlying factors of Tanzania's relative success and experience in accessing FP grants, while the regional case study examined the process, level of influence of RECs—the EAC in particular—in influencing national and regional STI agendas, as well as the alignment of regional S&T programmes within the RIP which is a regional funding instrument for the EDF.

2.2.1 Tanzania Case Study

The country case study of Tanzania was presented by Mr. Hamisi Nguli from COSTECH. Below are the highlights. COSTECH as a partner in the IST-Africa project undertakes the following activities:

- i. Awareness raising on ICT;
- ii. Identification and promotion of cooperation opportunities at the regional, bi-regional and international levels;
- iii. Support to policy dialogue;
- iv. Promotion of research cooperation.

Lessons learnt:

- i. COSTECH is the coordinating body for S&T in Tanzania and draws on affiliated R&D institutions;
- ii. Coordination has attracted researchers from affiliated institutions engaged in S&T;
- iii. Mechanisms for cooperation between EU researchers and African counterparts are rather complex;
- iv. There is a need for concerted efforts.

Conclusions:

- i. Through the identification of collaborative research opportunities in Tanzania and the EU some success has been achieved.

2.2.2 Plenary discussion

- i. Proposal submitted on the ICT theme was jointly submitted to the EU (Tanzania, Botswana, Kenya, Uganda) but Kenya was not mentioned in the presentation;
- ii. Challenges were not mentioned as regards FP participation. For instance in Kenya it is some times not possible or very difficult for partner forms to be signed by high level politicians.
- iii. Seed funding and co-investment is available in South Africa. Request came from Lesotho to help to set up a similar model; also collaboration with Uganda is under discussion: South Africa (DST) offers to share its experiences with other African countries. South Africa's success in FP participation is due to the NCP system.
- iv. Coordination and transparency is a crucial point: ACST (including the RECs) body where programmes can be presented to harmonise them is a good opportunity.
- v. A desk officer dealing with issues of EU cooperation is necessary and useful; each research council should have one. African embassies in Europe do not have enough capacity to handle S&T issues; South Africa's S&T delegate to the EU in Brussels good model to be emulated.
- vi. Networking should be emphasised during the third phase of the project (IST Africa). The project should focus more on tangible aspects such as access to literature. Adequate soft- and hardware is necessary as the situation is still very bad on account of the persistent digital divide.
- vii. A distinction should be made between designation and establishment of separate units, taking into account the human resource, financial and infrastructure capacity constraints facing the continent. Consideration should also be made as to how the proposed units are to be supported by African states and donors as well as how units should work with ministries of foreign affairs and agencies of aid/development.
- viii. COSTECH's role is to coordinate S&T in the country, but that is not possible for all thematic fields e.g. because of research activities of different ministries and lack of coordination (for example, e-health effort). COSTECH needs to boost its coordination activities.

Questions:

- i. Have the terms of participation on reimbursement basis been an impediment to Tanzanian participation?
- ii. Is there a mechanism to provide seed money to cover the high transaction cost of preparing grant applications? If so, how does it work?
- iii. Can the AU put in money to supplement projects (e.g. or funding under FPs) if in line with AU priorities?

Answers:

- i. Terms of participation have been causing problems, but COSTECH was able to handle the challenge because it is managing a national S&T fund which enables it to meet some of the project costs;
- ii. Transaction costs: extra money of R&D investment by the government might help with this and COSTECH can advise government to invest in facilitating preparation of grant applicants;
- iii. Focus on tangible things in the third phase of IST-Africa is a useful suggestion that will be taken on board for further discussion, for example, library digitalisation. Also the idea for creation of focal points will be considered.

2.2.3 East African Community (EAC) Case Study

The REC case study was presented by Mr. Aloysius Chebet from the East African Community Secretariat in Arusha, Tanzania. Below are the highlights:

- i. The EAC is run by the ministerial council, the assembly, the court and a secretariat. The secretariat coordinates and implements decisions of the other EAC organs;
- ii. Decision-making in the EAC is based on consensus, not majority. A key decision is the establishment of a viable East African S&T Commission. Now in search of a home for this commission all East African governments have put S&T as a top priority on their agenda (established either ministries or other entities)

Strategic interventions in S&T include:

- i. Efforts to harmonise the educational system of all partner states;
- ii. Proposal was submitted in 2008 under EDF by the EAC on Centres of Excellence for S&T (one in each partner state);
- iii. Development of legal instruments of an EAC S&T Commission (EASTEKO) is in progress (bill under revision). The bill is expected to be endorsed before the end of 2009 and form the regional S&T framework, including functions and challenges: developmental problems, workforce problem, institutional problems;
- iv. Efforts are in train for the establishment of an East African Science and Technology Institute.

2.2.4 Plenary Discussion

- i. A distinction must be made between grants, aid and collaboration. Own payment is very important as the saying goes: If you do not pay, you do not own;
- ii. The structure of EASTEKO is such that the Inter-University Council of East Africa has been incorporated into the EAC (was an independent entity before).

- iii. This means that there will be two entities dealing with S&T within the EAC, with a risk of duplication of effort. Funding will certainly be a problem if there is duplication of functions by two entities;
- iv. Harmonisation of the educational system is of paramount importance if synchronisation of educational activities within the EAC is to be achieved.

Questions:

- i. What funding model will be adopted for EASTECO? What own resources will it command?
- ii. More information is needed on the five proposed centres of excellence.
- iii. Why has the Bill to establish EASTECO not been passed yet?
- iv. What will be the relationship between EASTECO and relevant national institutions?

Answers:

- i. Two models are envisaged: a) institutions are created by partner states which are assessed with a view to funding activities; b) core contributions by member states, supplementary contributions by development partners.
- ii. Relationship with Inter-University Council: EASTECO will be the EAC summit body dealing with S&T only; the mandate of the Inter-University Council is broader and includes different functions; the two entities will be complementary.
- iii. Harmonisation: at present the respective educational systems differ in structure and degree system, which is a problem in student exchanges. The Inter-University Council is currently undertaking a harmonisation study as a basis for knowledge-based changes.
- iv. EASTECO bill: there is a small technical problem (the specified functions of governing body were missing), but is expected to be overcome shortly and approved by the Ministerial Council so that the bill can be passed by the Legislative Assembly of East Africa before becoming law.
- v. EASTECO function and institutions: the governing board will address this issue.

2.3 Towards Better Synergy Between S&T and Development: Proposals and Recommendations

The report notes the following:

- i. With regard to bridging S&T and development, the report notes the complex relationship between S&T, innovation, outreach and implementation for development; the problem of compartmentalisation of discrete communities; the mismatch of time perspectives by scientists and politicians; the 'contamination' of the research application process by intervening variables such as distortions of political nature; the challenge of striking a balance between technocratic assessments and political preferences.

- ii. In respect of Africa-Europe S&T cooperation within the framework of FP7 and EDF10, the report notes that this is largely EU-driven. However, consensus on priorities is emerging from the Cape Town consensus and the CPA. Nonetheless, African involvement in FPs remains minimal as most of Africa is largely oblivious of opportunities.
- iii. This poses a challenge of how to leverage EDF and FP synergistically.

The report presents the following synergy options for consideration:

- i. **Synergy option 1:** in view of the fundamental differences between FPs and the EDF in terms of policy, complementary fora are needed for technocrats and S&T subject-matter specialists to reorder the priority accorded research and development. More coherence of financing modalities is also needed.
- ii. **Synergy option 2:** seed money should be made available for potential applicants, i.e. pre-proposal support for initial applicants in doing preliminary research for fully-fledged proposals jointly with European homologues. The S&T component of EDF10 should be operationalised to support institutional STI capacities.
- iii. **Synergy option 3:** programme modification and redesign of both the EDF and future FPs is needed. The EDF should reorient its priority to a new STI sector. For its part the FP should be redesigned to cater for entire project cycle in a multi-phased manner, covering also policy research, application of findings in pilot activities, performance review and feedback.
- iv. **Synergy option 4:** programme consolidation is needed of disparate portfolios for projects at many levels. Harmonisation, re-conceptualisation and the possible merger of initiatives are needed.
- v. **Synergy option 5:** with regard to STI financing available resources under the EDF and other arrangements need to be consolidated, augmented and complemented by new and significant long-term funding. An African Science and Innovation Fund (ASIF) should be established and countries need to evolve home grown solutions.

The report recommends the following:

- i. **Recommendation 1:** greater emphasis should be put on the application aspects of FP projects to enhance take-up of research results in development programmes.
- ii. **Recommendation 2:** With a view to bridging the existing gap between the S&T and development communities dialogue fora should be established for bringing the dialogue down to scientists and practitioners who are closest to the problems at hand.
- iii. **Recommendation 3:** operational models of bridging existing gap should be built. The ensuing heightened awareness should be translated into cooperation between scientists and practitioners. Malawi has shown the way in agriculture and food security but no generic model exist; customising is necessary.
- iv. **Recommendation 4:** in order to tap into the African Diaspora and turn the brain drain into brain circulation and brain gain short- or medium-term placements of highly

qualified Diaspora personnel could prove beneficial. The virtual return of Diaspora Africans by means of ICT should be attempted.

- v. **Recommendation 5:** Establish a SICA on African intellectual property legislation and link it to the PAIPO Lighthouse project.

Funding sources are needed to buttress all recommendations. While the bulk of funding would probably come from EDF10, an endowment fund is worth considering as an instrument. The advantage of an endowment fund—pooling money donated to and administered by an institution—would be handsome yields and predictable sum to sustain core functions towards facilitating S&T and development synergies, and the insulation of synergy-promoting activities from the unpredictability of government and donors.

2.3.1 Plenary Discussion

- i. The rest of Africa should emulate the example of the South African Research chairs initiative—a 10-year innovation plan sponsored by DST—which to counter the brain drain gives incentives to researchers not to leave the country. Africa should also create an intellectual environment for young and experienced researchers, including a publication outlet such as the recently launched *African Journal of Science, Technology, Innovation and Development*.
- ii. Create a climate for better cooperation (mutual respect for different cultures with the same objective) in order to bridge the divide between practitioners and researchers.
- iii. The recommendations are very good from the development perspective but most are about African participation in Research/Framework Programmes. In order to fully appreciate the challenge, it would also be necessary to look at the issue from the perspective of European participation in the African agenda!
- iv. Recommendations should be strategic and also address the EAC, SADC, AMCOST, and the AUC, representatives of which all were present at the workshop. The most important issue is funding. Since the EDF and FP7 have low priority, African governments should reach 1 per cent of their GDP for S&T. It should also be realised that S&T cuts across so many sectors and ministries that reaching the goals is complex and difficult.
- v. The proposal for the establishment of an endowment fund is a brilliant idea but the problem is that African governments are already overstretched in paying subscriptions. In order to be pragmatic, each country should give a small amount from time to time in order to gather a lump of money. There is also need to find a way to help the African governments to induce the private sector to contribute to S&T.
- vi. On the linkages between S&T and development, remember the '360 degree circle' of education/ technical, vocational education and training as well as science and technology transfer and product innovations.
- vii. African Diaspora: how best to explore the African Diaspora is a tough question, involving psychology and attitudes (arrogance).

- viii. The structure of African universities is rigid; the in-and-out proposal of African Diaspora scientists would not be easy to implement.
- ix. It is important to indicate to whom the recommendations are addressed and the way forward. CAAST-Net is compelled to disseminate recommendations widely, which will formally be reported to the EC.
- x. There is a SICA on ethical questions in emerging countries. This is a WP4 issue which has not been taken up yet but would need to be addressed. However, a SICA may not be an appropriate instrument to deal with IPR issues. This issue could rather be included in the CAAST-Net topping up proposal.

2.3.2 SADC presentation

The presentation on SADC's S&T activities of potential interest to CAAST-Net was made by Mr. Funda Mpanza, the S&T desk officer at the SADC Secretariat in Gaborone, Botswana. Below are the highlights:

- i. In 2008 SADC established a science and technology desk with the objective of facilitating and fostering cooperation in science and technology within the region.
- ii. The guiding document for the region or 'protocol' is a blueprint for collaboration.
- iii. SADC is in the process of preparing a regional indicative strategic plan (RISP). Six (6) Member States volunteered to be part of working group on this strategic plan which will define modalities for engaging with other RECs, and international collaboration, including collaboration with the private sector. The priorities in the region will be based on the protocol, the CPA and the RISP.

2.3.3 Group Reports

Group discussions were held on the recommendations of WP2. The five recommendations from the report were clustered and subjected to in-depth discussion by three (3) working groups: (a) EU-Africa Dialogue forum; (b) Framework for linking STI and development on project level; and (c) the African scientific Diaspora—networking with expatriates. The groups were tasked to address the following issues: (i) objectives and success indicators; (ii) implementation scenario/feasibility; (iii) financing (if possible); and (iv) sustainability. The guiding principles for the working groups were that their proposals and recommendations should be concrete, operational, relevant, realistic, and have a clear addressee.

Working Group 1

A dialogue on the bridge between S&T and development should be carried out at different levels—national, regional and continental—and incorporate the topics such as 'the link between S&T, quality education and development'; 'the link between S&T, development and thematic areas, especially those already defined within the EU-Africa Strategy (e.g. agriculture, health, energy, environment, etc.)'; 'S&T and the rural community including exploitation of indigenous knowledge'.

Participating stakeholders on the national level would preferably be national ministries for S&T; economy, trade, development and planning as well as implementing agencies (for example, GTZ, DFID, Sida) in the respective countries. The underlying rationale is budget allocation: only if ministries of finance and planning are convinced that investing in S&T is of benefit to their country and serves the overall goal of poverty reduction, will funds be allocated for S&T at national level, and also be put on the agenda of negotiations with the international donor community as a high priority.

Regular fora on S&T and development should be sought in African as well as in European countries. On the African side, the fora should feed their results into the RECs. On the pan-African level, stakeholders of an S&T and development forum would be AMCOST as well as ministers responsible for planning in the African countries.

One of the objectives of a high-level forum would be increased African investment in S&T as a proportion of their GDP to 1 per cent as already pledged but in most countries not acted upon. Correspondingly, the donors should deliver on their commitment of 0.7 per cent of GDP for ODA. Concrete recommendations from the group included ensuring a continuous information flow from the national (via the regional) to the continental fora. A first dialogue could be organised as early as the next AMCOST meeting alongside the meeting of the African Cluster for Science and Technology (ACST). The forum should ensure/demand inclusion of S&T as a component in national poverty reduction strategies in order to ensure its role in socio-economic development, and lead to budget allocations accordingly.

The dialogue activities would need to be embedded in the overall structure of the Joint EU-Africa-Strategy in order to guarantee effectiveness and transparency.

Working Group 2

A framework for linking S&T and development at the project level and in the European context—this is addressed to the European Commission, especially DG RTD—should aim at making the existing programmes (FP7) more applicable to Africa by influencing the direction through calls. This might be achieved by making the calls more targeted and include elements that would give a bonus to proposals that include suggestions on how to apply the results of the research projects for development purposes. This would act as an incentive for researchers to synergise with the ‘development’ sphere. Another possibility might be special funds that promote results applicable to ODA. The upcoming ERA-Net with Africa and its mechanisms can be used to take stock of existing initiatives and activities.

An effort by African national authorities that would complement this aspect is the creation of demand in international collaboration through e.g. the establishment of NCPs, the organisation of working sessions and training days on how to prepare applications in conjunction with European colleagues under FP7. For the long term and the programming of the next European framework programme (FP8), new ideas regarding the design of the FP should be addressed to the European Commission.

As an overall objective the inclusion of 'contributing to the tackling of global challenges' could be added to the FP mandate and introduce European researchers to African problems and put partners from Africa on an equal footing.

Another option would be the re-introduction of the INCO programme (previously part of FP6) especially designed to support collaboration with partners from the South. Influence on the programming of the FP8 can be exerted through the delegates of the European Member states that are taking part in the programme committees. An overall achievement would be to make the Framework programme more user-friendly, as it is not an easy task even for European researchers to deal with the requirements of the FPs.

An important linkage of S&T and development is the bridge between research and the private sector, especially industry. Exchange programmes between small and medium-sized enterprises (SMEs) and research institutes in Africa or between Africa and Europe would facilitate cooperation. It was recommended to form so-called 'confederations of industry' in Africa that could act as interlocutors for European research partners with a view to facilitating international cooperation.

For the challenge of Intellectual Property Rights in the European-African context, a SICA, as proposed in the report, would not be the appropriate instrument. It is recommended, however, to include IPR into the top-up up of the CAAST-Net project (as from 2010). This activity would have to be linked closely to the Pan-African Intellectual Property Organisation (PAIPO)—a Lighthouse Project of the African Union—as well as to the Francophone and Anglophone agencies dealing with IPR.

Working Group 3

The overall objective of establishing stronger links with the African Diaspora scientists is to utilise their expertise, networks and partnerships for development and hence achieve a shift from 'brain drain' to 'brain circulation'. Possible implementation scenarios discussed were the creation of focal points for Diaspora relations, the creation of national coordination agencies (NCA, preferably including a chief officer plus secretariat) dealing with Diaspora issues to be housed at a high level (for example, in the office of the President). The role of such entities would be to establish links with the Diaspora and set up physical and virtual networks of communication channels.

The feasibility of this suggestion would depend on political will and a clear demonstration of the national and Diaspora scientists' added value to national development. Also, incentives for Diaspora scientists would have to be created in order to attract their interest in activities in their country of origin.

As regards the financial aspect, own funding could be one option. Furthermore, existing programmes and projects could be instrumentalised to pay for the generated expenses, as well as subventions by national governments or UN agencies. Another option would be the provision of seed funding from the FPs or the EDF.

The success of the 'utilisation' of Diaspora scientists could be measured by counting the number of

them participating in joint research projects with researchers based in African countries; by measuring the resource inflow; and by access to international facilities as a result of their facilitation. In order to guarantee the sustainability of such attempts, the programmes that are making use of Diaspora scientists need to be implemented on a long-term basis.

Additional measures could be dual citizenship, an increased level of institutional cooperation on bilateral and multilateral levels, encouragement of public-private partnerships that are self-sustaining and also to build a link to innovation promotion and patents.

Such an initiative needs to address various stakeholders in order to be implemented well, such as national ministries of S&T and development, ministries of foreign affairs, including embassies, RECs, the AU, UN Agencies, public and private institutions as well as NGOs.

2.3.4 Plenary Discussion

Working Group 1: With regard to education, it is hard for countries to increase enrolment. Instead, efforts should be put on improving the quality of education. In terms of sectors, energy is missing, as well as climate change. Indigenous knowledge system also needs to be addressed (and exploited for the sake of development). The themes are already defined in the Joint EU-Africa Strategy.

Working Group 2: Where is the problem with respect to private sector involvement? No technology transfer programme? Neglected sector? The competitiveness of FPs should stay, and global challenges should additionally become an added objective. In terms of innovation, there is much room for improvement. That is the reason why the link between S&T and development should be with the private sector to ensure development of human potential. The SICAs have to build on the mechanisms of the FP. With regard to influence on FP8 from the outside, an attempt has to be made: this issue can be put on the table in larger CAAST-Nets stakeholder conferences addressing S&T and development issues and possibly yield a good result. Regarding basic and applied research the demarcation is thin. Africa wants strong basic sciences but both basic and applied sciences must work together. In European funds most training sessions are commercial; this issue has to be addressed. Curricula should be amended and training reorientated to stimulate innovation. At bachelor level basic skills should be communication, innovation comes in at higher level. A regionally developed IPR regiment is preferable; but it needs principles on IPR international collaboration issues.

Working Group 3: The most successful Diasporas are Chinese and Indian; there is some spiritual connection that makes them work and connect well. It is different in Africa whose scientific Diaspora is very fragmented. A new initiative was created in 2001: NESG (website: nesg-global.org) whose function is to work effectively in knowledge communication. There are also skills networks (34 Diaspora linkages). The message is that we should not wait for the government to act and attract Diaspora, initiative at the personal level is important. 'Africanism' should be examined in terms of what African skills exist that can be used. Look at them not as a link to a specific country, but to the continent, link to big projects, where Africa is missing. The African Science and Innovation Fund

(ASIF) was raised during the last AU Summit (January 2009 Ethiopia): a decision was made regarding the need for a funding mechanism for Education and S&T. The AfDB should host such a fund.

3. WAY FORWARD

Arne Tostensen indicated that the workshop report would to be prepared and finalised for dissemination. The ideas and comments that were generated during the workshop would be incorporated in the revision of the substantive reports. The outcome of the WP2 would also feed into WP3 dialogue platforms. He regretted that that there was no workshop participation from the EC or from the ACP secretariat, but nevertheless expressed gratitude for the written comments on the reports from the EC Desk Officer for the CAAST-Net project.

APPENDICES

Appendix 1: Opening Statement*

* Delivered at the CAAST-Net Work Package 2 Workshop on 23 April 2009 at the Imperial Royale Hotel, Kampala, Uganda, by Honourable Professor Ephraim Kamuntu, Minister of State for Finance, Planning and Economic Development (Planning) of the Republic of Uganda.

Eminent Scientists,
Distinguished Participants,
Ladies and Gentlemen,

Let me begin by welcoming all of you that have travelled from various parts of Europe and Africa to come and attend this meeting in Kampala.

This meeting is important for Uganda in that it will deliberate on issues that are pivotal to the strengthening of mutual cooperation in science and technology between Africa –Uganda inclusive – and Europe within the framework of the Seventh Framework Programme of the European Union.

Uganda has historically had strong cultural, socio-economic and is now galvanising science and technology ties with the European Union. As a result, Uganda enjoys cordial relations with the EU and has significantly benefited from multilateral development assistance under the European Development Fund (EDF) and the EU Framework Programmes (FPs) as well as bilateral assistance from member states.

We are, therefore, greatly honoured to host such high level meeting that brings together distinguished scientists, researchers, policy makers and development practitioners across Africa and Europe to further discuss the strengthening of our cordial relations.

Let me also reiterate the importance that Government of Uganda attaches to science and technology as a tool for societal transformation, modernization and development. Government has made several efforts aimed at nurturing the development and application of science and technology in all spheres of the economy. Notable among these include:

Establishment of the Uganda National Council for Science and Technology (UNCST) as lead agency in the promotion of advancement of science and technology in the Country;

Integration of science and technology within the national development framework previously termed as the Poverty Eradication Action Plan (PEAP) and currently the National Development Plan (NDP) as well as the continent-wide flagship programmes of the New Partnership for Africa's Development (NEPAD) and the African Union under the Consolidated Plan of Action (CPA).

Adoption and implementation of several policies on science and technology such as the Information

and Communication Technology (ICT) Policy, the Biotechnology and Biosafety (BAB) Policy and currently deliberating on the adoption of a comprehensive Science, Technology and Innovation (STI) policy.

These, among several other efforts, have resulted into a stable macro-economic policy environment and outstanding performance of the economy averaging at 6.5 percent over the last 2 decades which is above the 6.2 projected average growth rate for the African region. The science and technology system has also evolved over the years and now boasts of world class research results in HIV/AIDS vaccine development, development of clonal coffee and total eradication of cassava mosaic, among other, achievements. In the long term, these efforts are expected to contribute towards attainment of Uganda's vision of eradication of extreme poverty, societal transformation and modernization as well as enhance its competitiveness and global inclusion in technology, trade and development.

Therefore, the Network for the Coordination and Advancement of Sub-Saharan Africa-EU Science and Technology Cooperation (CAAST-Net) Project under the Seventh Framework Programme (FP7) of the European Union in, which Uganda is represented by the UNCST, is consistent with and complements Uganda's other efforts, such as the Millennium Science Initiative, towards enhancing research and technological capacities that are required to accelerate innovation, productivity, competitiveness and overall national development.

Having studied the objectives of CAAST-Net Project and the resultant companion Work Package 2 (WP2) reports on (i) *Analysis of Synergies between the European Development Fund and Framework Programmes*; and (ii) *Towards Better Synergy between S&T and Development: Proposals and Recommendations*, which form the basis for this meeting, there is no doubt that CAAST-Net Project is tackling issues that are critical to, not only strengthening of Africa-EU S&T cooperation, but also the uplifting of African countries that are yet to harness their S&T development potential largely due the legion factors that are well articulated in the WP2 reports. Notable among these are (i) the low funding of less than 1 percent of funding for research and development that was recommended by the African Union, (ii) absence of coherent science and technology policies, as well as (iii) the apparent disjoint between science, technology and development.

The reports provide useful resources and reference materials especially for policy makers and bureaucrats from African countries that represent the continent in formulating mutually beneficial EU-Africa policies, strategies and programmes in science, technology and development. They consolidate previous efforts and reinforce current and future initiatives towards achieving greater EU-Africa cooperation broadly envisioned within the EU-Africa Strategy.

The inevitable conclusion from the reports is that Africa needs to more than double development efforts and harness the latent natural resource, human and technological endowments in order to effectively participate and benefit from EU and other global S&T initiatives. Though the fundamentals and imperatives for development vary between Africa and Europe, there is enormous potential for mutual sharing of experiences, synergistic design and implementation of development

initiatives as well as assessment of their development impact which are crucial underpinnings of the much cherished EU-Africa cooperation.

Equally important for, especially Africa, is the need to identify our development priorities and actualise our S&T policies, strategies and plans drawing on national as well as partner resources that are accessible under the EDF, FPs and other instruments of bilateral and multilateral cooperation. Only through this way, can there be locally initiated science-led growth that has global acclaim and relevance.

I am aware of the daunting challenges ahead but trust and strongly believe that with clear policies, effective strategies, articulate plans, modest resources and strong international cooperation, they are not insurmountable.

With those few remarks I declare the workshop open and wish you fruitful deliberations.

Appendix 2: Workshop Programme*

* CAAST-Net Work Package 2 Workshop Programme for 23-24 April 2009, Imperial Royale Hotel, Kampala, Uganda.

Thursday 23 April 2009

08:30 - 09:00	Registration
	Chair: Dr. Eric Mwangi, CAAST-Net Africa Region Coordinator (MoHEST)
09:00-9:45	Welcoming remarks
	Dr. Peter Ndemere, Executive Secretary, Uganda National Council for Science and Technology (UNCST)
	Prof. Ephraim Kamuntu, Minister of State for Finance, Planning and Economic Development (MFPED) in charge of planning
09:45-10:00	Participant introductions
10:00-10:30	Refreshment break
10:30-11:30	Presentation of Deliverable Report 2.1: <i>Analysis of Synergies between the European Development Fund and Framework Programmes</i> by Arne Tostensen (Research Council of Norway - RCN) & Ismail Barugahara (Uganda National Council of Science and Technology - UNCST)
11:30-11:45	Remarks by discussant: Dr. Botlhale Tema, CAAST-Net Project Advisory Panel Expert
11:45-13:00	Plenary discussion
13:00-14:00	Lunch break
	Chair: Jan Haakonsen, CAAST-Net Project Partner (RCN)
14:00-15:00	Plenary discussion continued
15:00-15:30	Refreshment Break
15:30-15:50	Presentation on Tanzanian case study by Hamis Nguli, Tanzania Commission for Science and Technology (COSTECH)

15:50-16:15	Plenary discussion
16:15-16:35	Presentation on the East African Community (EAC) case study by Aloysius Chebet, EAC secretariat
16:35-17:00	Plenary discussion
17:30- 19:00	Cocktail

Friday 24 April 2009

Chair: Joern Sonnenburg, CAAST-Net WP3 Co-leader (PT-DLR)

09:00-09:45	Presentation of Deliverable Report 2.2: <i>Towards Better Synergy between S&T and Development: Proposals and Recommendations</i> by Arne Tostensen (RCN) & Ismail Barugahara (UNCST)
09:45-10:00	Questions of clarification
10:00-10:30	Refreshment break
10:30-13:00	Group discussions
13:00-14:00	Lunch break
	Chair: Thabisa Mbungwana, CAAST-Net Project Partner (DST)
14:00-14:30	Presentations of group deliberations
14:30-15:30	Plenary discussion
15:30-16:00	Refreshment break
16:00-16:30	Closing

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