KSI

Knowledge Systems Innovation

WORKSHOP

REPORT

Workshop Report

Investing in Research and Innovation in
Africa for Sustainable Development:
emerging evidence and policy opportunities

11thNovember 2019, Dar-es-Salaam, Tanzania

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KSI
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Acronyms and Abbreviation

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AAS	African Academy of Sciences
ACTS	African Centre for Technology Studies
AU	African Union
DFID	Department for International Development (UK Government)
DRA	Doing Research Assessment
DSPR	Direction des Stratégies et de la Planification de la Recherche
EARH	East Africa Research Hub
GERD	Gross Expenditure on Research and Development
GDN	Global Development Network
HSR	Health Sciences Research
KSI	Knowledge Systems Innovation
LMIC	Low Middle Income Countries
LSTM	London School of Tropical Medicine
SDGs	Sustainable Development Goals
SGCI	Science Granting Councils Initiative
SPRU	Science Policy Research Unit of the University of Sussex
SSA	Sub-Sahara Africa
SSR	Social Science Research
ST&I	Science, Technology and Innovation

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Executive Summary

This report collates the results and discussions of the Knowledge Systems Innovation (KSI) session organised on the 11th of November 2019 in Dar-es-salaam Tanzania on the topic Investing in Research and Innovation in Africa for Sustainable Development: emerging evidence and policy opportunities. Investments in research and innovation are already supporting the achievement of the 2030 development agenda and more broadly the achievement of the Africa Agenda 2063 and the African Union (AU) Strategy of Africa 2024 (STISA-2024). The workshop was organized alongside the 2019 Science Granting Councils Annual Forum in collaboration with the African Centre for Technology Studies(ACTS) and the Department forInternational Development (DFID) through its East African Research Hub (EARH). This meeting aimed to deliberate on practical approaches and the various policy opportunities for increasing investments in research and innovation in Africa.

The conference attracted over 200 participants across 27 different countries with most of the African stakeholders represented through the Science Granting Councils, African think tanks and academia, national innovation agencies, international funders and key renowned experts in Science Technology and Innovation (ST&I). The agenda adopted for the conference is provided in Annex 1.

The conference was organised in panel sessions on policy opportunities for increasing investments in research and innovation and was aimed at addressing the following objectives:

(i) identifying key gaps, opportunities and challenges in current
    ST&I investment approaches;
(ii) discussion on how to better link investments in research
     and innovation with priority development outcomes;
(iii) debate recommended practical interventions for different
      contexts and finally;
(iv) discussion on how evidence on ST&I investment can
     be incorporated in decision-making.

It was the intention of the conference to identify pathways in progressing investments in ST&I towards achievement of the Sustainable Development Goals (SDGs) through four conversations (see boxes below). Thereafter group discussions collated experiences on practical approaches and examples of what works and what does not work (see notes in Annex 2).

Session 1: Evidence on the impact of investing in ST&I.
Discussions focused on the evidence on studies conducted in research and knowledge systems in Africa. The session revealed a number of opportunities for consideration to drive more investments in Africa.

Session 2: Recommended approaches for strengthening research institutions.
The session delved into the practical approaches looking at how to scale investments in research, institutional support and funding arrangements that position African led institutions better etc. The presenters proposed different approaches such as formation of multi-stakeholder mode funding to increase efficiency and coordination and impact on research and innovation.

Session 3: Policy opportunities for increasing investments in research and development.
Various experts offered their responses to inclusiveness in investments. Funding coordination alignment, involving the informal sector with key emphasis involving the private sector and investments that yield to socio-economic outcomes.

Session 4: Practical examples of interventions and what works/doesn't work.
Participants discussed examples of practical interventions that have previously worked in different contexts. Some of the characteristic they possess are; inclusivity, diverse in incorporating the informal sector and mostly through partnership and co-creation. The group discussions offered responses to what did not work and include supporting interventions that are not context specific and lack of evidence on the impact of the investments.

1.0 Introduction

African driven investments in Science, Technology and Innovation(ST&I) can yield significant benefits to the economy and to society, contributing to sustainable socio-economic growth and poverty reduction. Yet, most investments in ST&I are informed by knowledge and experiences from outside Africa, and there are weak links between research, innovation and sustainable development programs. Based on commitments made through the African Union (AU) Strategy of Africa 2024 (STISA-2024) and the AU Agenda 2063, many African governments have developed new ST&I policies with the aim of increasing their gross domestic expenditures on research and development from 0.6% to about 1% or 2% and with a focus on socio-economic challenges. In this context, there is a growing need for alignment between international funders and African Science Granting Councils on how to collectively maximize the effectiveness of investments in scientific research and innovation.

It is against this backdrop that a workshop was organized by African Centre for Technology Studies (ACTS), Knowledge Systems Innovation (KSI) project and United Kingdom's Department for International Development (DFID) East Africa Research Hub (EARH) as a side event at the Science Granting Councils Initiative in Sub-Saharan Africa Annual Forum in Dar - es -Salaam, Tanzania from 11th – 15th November 2019. This particular session aimed to review emerging contextual evidence and policy opportunities and discuss practical implications for investing in research and innovation in Africa. Participants included heads of African science granting councils, policymakers, international funders, researchers and key stakeholders at national and regional levels. The event was expected to generate practical recommendations on how to steer and foster effective investments in research and innovation for sustainable development.

1.1 Objectives of the workshop

The presentations and discussions sought to address the following questions:

1. What are the key gaps, opportunities and challenges in current ST&I investment approaches, and how can they be addressed?

2. How can we create better linkages between investments in research and innovation with priority development outcomes?

3. What are some of the recommended practical interventions for different contexts?

4. How can we better incorporate evidence on ST&I investment in decision-making?

2.0 Evidence on the impact of investing in ST&I

This session focused on the policy opportunities for investing in research and innovation. The presentations were on evidence of the impact of investing in ST&I and recommended approaches for strengthening research institutions.
Presentations on this subtopic were made by Pamela Juma of Wellcome Trust, Francesco Obino of Global Development Network and Nora Ndege of African Centre for Technology Studies.

2.1 Pamela Juma. Building a case for investment in health science research and research capacity in Africa.

This study focused on building a case for investment in health science research and research capacity in Africa. Practical lessons on how strengthening of regulation and prioritization in health research contributed to research systems strengthening are enumerated as follows;

Crises. Considering the case of Liberia, break out of Ebola provided an opportunity for capacity building for research. Ebola research in Liberia was driven by the idea that; there was no research without contributing to human/institutional capacity for Liberia, research questions had to be aligned with Liberian needs, and Liberian researchers were to share ownership of design, process, resources and results. Outcomes of investment in Liberia included; training Liberians MSc and PhD students, building the pool of skilled researchers in the country, grant writing skills building, seed money for developing research ideas, lab techniques and lab capacity transfer (diagnostic testing and assays now being done in Liberia), improved disease surveillance system, creation of the National Public Health Institute, development of ethical guidelines for clinical research in the country and establishment of the National Ethical Review Board and learning reported from partners about critical contextual issues for clinical research in Liberia.

Value of research culture. Research culture is not homogenous across the continent as varied culture of scientific writing and publication exists. The implication is that outputs miss crucial local research evidence. National conferences and/or research meetings present a valuable mechanism to develop culture and capacity and thus need to put more investment in national workshops/conferences which require minimal investments in terms of cost but with high impact.

These meetings:
• raise awareness about health research,
• focus on research for national priorities/problems,
• develop research skills (abstract writing, scientific presentations, peer review),
• promote dissemination of research
• provide a networking platform for researchers

Advocacy. Effective advocacy that generates political will and priority is key to adapt, renew, and sustain change in health invetsments. Sustained efforts over time are needed, while being able to seize opportunities (such as crises). Key national scientists/researchers with access to decision-makers, and to funds are needed for sustained advocacy efforts.Champions should take forward a strategic vision (individuals or institutions)supported by local knowledge/evidence. They should also work with partners (not in silos) to understand a common vision and speak with united voice for advocacy in a particular area of research.The availability of data is critical for researchers and decision-makers who want to advocate for investment in health science research. Lastly, advocacy is vital, and scientists need to learn these skills.

Regulation for improved research. Regulation is important. Strong demand for laws in particular about regulation of Intellectual Property, data sharing and protection, ethics and clinical trials, biobanks and human samples, embryotic research, genetic research etc. are crucial. Regulation should be prioritized as this improves system wide coordination.

2.2 Francesco Obino. Doing Research Assessments: understanding research systems in developing countries.

Doing Research Assessment (DRA)is an objective assessment of research system for social sciences in developing countries to promote evidence-informed research policies, strategic government and donor support, capacity and trust-building among local researchers and other stakeholders. The DRA framework entails assessment of the context, mapping national research actors and these are then used as inputs the doing research rssessment framework, using a combination of secondary data, surveys and interviews.

The interconnected strands for this framework are as follows; Research on research applies to; a) Researchers - doing research data as first step to build research agendas on social science research systems; b) National policy actors - DRA findings as first step in national debate about research policy, science advice, investments in social science research; c) International agencies - substantive 'evidence to support funding and programming strategies and baseline for evaluation of international support.

Despite this, a number of structural barriers still exist for social science research a key impedemnet to achieving development outcomes. These include limited domestic funding, poor system coordination;poor coordination for quality Social Science Research (SSR), poor infrastructure and publish or perish syndrome.Therefore actions for SSR improvement include creating demand for high quality research, supporting gathering, curating and disseminating secondary data, connecting research agenda to local development challenges and priorities, increased local funding and need for strong and coordinated regulatory frameworks.

2.3 Nora Ndege. Knowledge Systems Innovation

Most African countries have historically lagged behind in ST&I investment. For the last decade, Africa has contributed only 0.6% share of world gross expenditure on research and development (GERD), as compared to that in Asia and Europe at 30.5% and 27.2% respectively. So, this new focus on & emerging policy support for ST&I marks a major milestone.

Yet even with such vibrant policy ambitions, innovation experts and policy makers still struggle with the question of what an effective ST&I system looks like in practice and what can really work for SSA. There is growing awareness of the need to better understand the barriers and enablers for harnessing knowledge to meet social, economic and sustainable development ambitions in SSA contexts. Similarly, there are concerns about the mismatch of ST&I theories and policy and investment framings that have been developed elsewhere to address economic performance. These are poorly suited to support innovation towards the balanced growth ambitions of SSA where inclusive and sustainable development targets are also critical.

Knowledge Systems Innovation was presented as an emerging concept for framing investments that reach beyond science excellence and the commercialization of technology to encompass a more inclusive and diverse set of knowledge production and use process that better serve societal goals.

The approach argues that this is needed to ensure that both the pace and direction of innovation are given attention and that this is particular critical if the broader development agenda of the SDGs are to be addressed. In taking this perspective a knowledge system approach highlights the need to strengthen inclusion, transparency and ownership of both ST&I policy and practice.

By applying a KSI approach, the analysis is broadened out. This iteration is characterized by the development and use of quantitative methods to assess the economic returns to interventions and investment and by qualitative approaches to understanding the performance and dynamics of knowledge systems in different country settings. By looking at how knowledge is produced, shared and used through the lens of different conceptual perspectives and methodologies it is hoped a multidimensional picture in each context will be built up.

3.0 Recommended approaches for strengthening research institutions

3.1 Mattia Fosci. Research Capacity Strengthening in Low Middle Income Countries: A Rapid Evidence Assessment

This study presents evidence on approaches for strengthening research systems inLow Middle Income Countries(LMICs). The study is a review of evidence on strategies & interventions to strengthen research systems and research organisations in LMICs with the aim of documenting lessons learned from past interventions; identifying evidence of good practice and filling gaps on system-level Research Capacity Strengthening (RCS) interventions.

Evidence available from the study is much inclined on problems and challenges with limited evidence on the effectiveness of the interventions. Commonly identified challenges for research organizations include; Insufficient training on qualitative and quantitative research; ICT infrastructure fast developing but not sufficient for data-intense research; Lack of scholarly communication infrastructure hampers secure storage and diffusion of research findings and data (also important to validate research).

However, this presents an opportunity for development partners to raise awareness of the importance of research by fostering the following; South-South collaborations to better build management capacity, buy-in and retain knowledge; Safeguards such as supporting researchers to continue their research locally; Good practice: from university to university, from funder to funder and; Scholarly Communication in Africa Programme (SCAP)

Other emerging lessons
• Long-term presence: work with local partners over the long term, plan for sustainability and national buy-in
• Flexibility: keep plans flexible and allow room for trial and error, failure, learning and innovation
• Instrumentalism: focus on research & innovation or science, technology & innovation - not on research alone.
• Tailor interventions: do not apply approaches to interventions across countries without proper needs assessment
• Foster South-South collaborations: encourage network building among LMICs

3.2 Alex Ezeh.Transforming the institutional landscape in sub-Saharan Africa: considerations for leveraging Africa's research capacity to achieve socioeconomic development.

Three levels of capacity are needed to drive positive development outcomes i.e. individual, organizational, and institutional. Capacity building has been central to all development programming in SSA and yet, capacity gaps remain the primary reason for limited investment in African institutions. Much of research funding in SSA come from outside and come in support of predefined priorities or solutions for Africa; and are largely implemented through intermediaries who lead the design and implementation of funded projects.

Yet, the ideas that will transform Africa sit with African researchers in Africa and often these ideas never make it to global research funding mechanism. Changing these realities will require conscious and deliberate decisions and actions that are both audacious and ambitious.

A research that involved interviewing 46 CEOs, board members & finance directors at 21 African research organizations & think tanks; Interviewing of 14 program directors and CEOs at 12 bilateral funding agencies and foundations; and hosting a fonsultative feeting with CEOs of African organizations, funders and others revealed that the current funding model (small, short-term, externally led) is a key obstacle to developing strong and robust institutional capacity in SSA. This was according to the African institutional leaders interviewed. Development partners acknowledged the limitations of current funding models and how they may undermine institutional capacity in SSA; identified key strengths associated with working directly with SSA institutions, which motivated an overwhelming commitment to changing the current funding model.

It is recommended that a Multi-Stakeholder Funding Platform be established; an integrator-type organization be created and metrics for Institutional Capacity Development be established. Elements of these should be integrated into a single program.

4.0 Panel Discussions

The panel comprised of Alphonsus Neba from African Academy of Sciences, Alexandra Spittle from UK Research and Innovation,Tade Aina from Partnership for African Social Governance Research, Mamadou SY-Direction des Stratégies et de la Planification de la Recherche (DSPR) of Senegal and Kampeta Sayinzoga from the National Industrial Research Development Authority.The panel discussion was moderated by Ernest Aryeetey from African Researchers Universities Association.

The following were the deliberations from the panel discussions.

There is an opportunity in the renewed focus and momentum in investing in research and innovation in the continent. However, there are some challenges. Investments in research and innovation are fragmented and maximum synergies and impact with regards to socio-economic development are not being achieved. To this extent, there is need to conceptualize and reframe the ideas and vision of success.

Context is key and is not debatable at all. There is need to think about politics in context. This requires identifying critical entry points to engage with stakeholders in context. Some of the entry points include national or human security and climate change. They can help move beyond specific disciplines or sectors to something that resonates with the population

There is an understanding that path from research and innovation to development is not linear. Identifying and focusing on missing middle, the private sector, is imperative. Africa has a huge informal sector and engagement with this sector need be strengthened and not be a copy-paste from the Northern context.

The current funding model is a key obstacle to impact as is short term, mostly externally led with intermediaries involved. This has hampered its sustainability. There is, therefore, the need to understand that there is no single funder who can address these issues, new ways of working e.g. multi funder – multi stakeholder integrator model should be thought out to enhance efficiency and bring about impact. There is also need to learn from the past and carry on the lessons learnt.

There is need to move beyond the goal of academic excellence and economic development and head towards things that have an impact on the population like socio-economic development while balancing between equity and excellence.
All the levels of investment are important in terms of targeting individual and institutional capacity strengthening and the ecosystem.

5.0 Conclusion

There is a consensus that few gains have been made in research and innovation landscape in Africa due to the low GERD currently estimated at less than 1% of the world share. With the emerging prominence of the sustainable development agenda, there is need to address how the pace and the direction of innovation process is happening. As outlined by the various studies presented, there is need for investments in different aspects of the knowledge systems and capacity building that supports balanced growth ambitions. This includes funding across disciplines especially along gaps and areas that could have wider impact and bring about tremendous change- by funding research within the wider framework of the SDGs and bring in other disciplines that support funding such as health. This also includes focusing on the knowledge absorptive capacity of key players as the private sector, informal economy and more generally building capabilities that underpin more inclusive and integrated approach to ST&I investments for sustainable development.

Annex 1: Workshop Agenda

Time	Agenda	Facilitator
Session 1: Official opening		
8.00-8.30	Registration of participants	ACTS
8.30-8.45	Welcome remarks • Tom M. Ogada-Executive Director, ACTS • Amos Nungu-Director General, COSTECH • Fran Davies-Deputy Head, DFID Evidence Department	Chair: Joanes Atela
Session 2: Short presentations addressing key questions		
8:45-10:10	Chair's opening remarks (5 minutes). This session will use the emerging evidence base to address the four questions outlined in the concept note. **Evidence on the impact of investing in ST&I (30 minutes)** 1. Wellcome Trust study on economic impact of health science research in Africa, **Pamela Juma** (LSTM). 2. Assessment of the social science research system in Nigeria, **Francesco Obino** (GDN). 3. The Knowledge Systems Innovation (KSI) study team (NRI, UCL, CSIRO, SPRU and ACTS) to present findings from the EARH-funded study on Understanding Knowledge Systems in Kenya, Tanzania and Rwanda, **Nora Ndege** (ACTS). **20 minutes of questions (and recap of top questions on Slido)** Recommended approaches for strengthening research institutions**(15 minutes)** 1. DFID Rapid Evidence Assessment on Research Capacity Strengthening in LMIC, **Mattia Fosci** (Research Consulting). 2. CGD paper Transforming the Institutional Landscape in Sub-Saharan Africa: Considerations for Leveraging Africa's Research Capacity to Achieve Socioeconomic Development, **Alex Ezeh**(Drexel University). **15 minutes of questions (and recap of top questions on Slido)**	Chair: Eunice Muthengi
10:10-10:45	Panel session on policy opportunities for increasing investments in research and development. 1. Alphonsus Neba-African Academy of Sciences 2. Tade Aina-Partnership for African Social and Governance Research 3. Sarah Plowman -UK Researchand Innovation 4. Mamadou SY-Direction des Stratégies et de la Planification de la Recherche (DSPR) of Senegal 5. KampetaSayinzoga-National Industrial Research Development Authority, Rwanda	Facilitator: Ernest Aryeetey
10:45-11:00	**TEA BREAK**	
Session 3: Groups discussions and plenary		
11:00-11:40	Break-out group discussions. 1. Science Granting Council members/National Innovation Agencies 2. Internationalfunders/Development agencies 3. Academia/Think Tanks	
11:40-12:20	Reporting by representatives of each group	Facilitator: Joanna Chataway
12:20-12:30	Concluding remarks. Leah Mwai-DFID, EARH	

Annex 2 :Group Work Notes

Participants were divided into 3 categories i.e. a) National Innovation Agencies and Science Granting Councils b) International funders/development Agencies c) Academia and think tanks. The groups were asked to discuss the question "What are some of the practical examples of interventions/ investments that are inclusive and leverages informal sector/ works across actors, aligned to the regional and national priorities?" and give examples of what works/doesn't work.

Group 1 : National Innovation Agencies and Science Granting Councils
Addressing what works with practical examples:

Seed industry value chain in Zambia, Malawi, Tanzania and Uganda

Seed sector value chain – involves multiple actors in the informal and the formal sector. They include investments from the private sector, the government, R&D sector and the local population. The priority working areas are in sustainable food security, value addition of agricultural production and industrialization.

Government support/ funding for R&D and innovation in Namibia, Malawi, Tanzania and Nigeria through organizing technology and innovation exhibitions to link the public and private sector to enhance uptake of products for commercialization.

Funding aligned to national priorities.

Partnership between the private sector, the academia and the public through creation of a platform through which identified researchable challenges are supported through funding to develop practical solutions.

Co-creation programs between academia and the industry through attachment of students to industry to co-develop solutions with industry in Namibia.

Addressing what doesn't work:
Link between private sector, the academia and the public sector has always been attempted but has not been successful in most countries (cases in Tanzania, Uganda and Zambia) and institutions.

Reason:
• Lack of working frameworks
• Incentives are lacking
• Varied interests and motivation of the players

What existing evidence is available to make the case for these types of investments? What additional evidence would be needed that is not available?

1. Technology and innovation support centres that target expired patents in developed countries and those which are outside the region, which researchers tap into for adaptation through value addition and/or adoption;
2. Evidence is needed on how to have strong innovation ecosystems in Africa

Group 2 : International funders/development Agencies

Practical examples of interventions/ investments that are inclusive, leverages informal sector/works across actors, aligned to the regional and national priorities.

The question around inclusiveness was interpreted (broadly) in terms of local ownership and alignment of donor investments with domestic priorities. The discussion developed at 3 levels around how funding examples are organized, thematically, institutionally and systemically.

Thematic: Newton Fund and UK-Kenya Oversight Board in Research, Science and Technology are examples of mechanisms that allow UK research funding to be aligned with national priorities, through consultations and negotiation of thematic focus before a research funding window is opened.

Institutional: SIDA's institutional support approach is an example of how a donor funds 'demand-driven' work, asking grantees to develop concept notes on the desirable development of their institutions over the long term, which delivers a vision of the main issues and challenges that are locally relevant; and AAS's DELTAS work on leadership which, by focusing on 'leadership' and research support services as opposed to research funding along, allows to integrate local priorities with donor investment.

Systemic: the expectation of systemic impacts implies difficult questions for donors and what they can do/fund, and everyone agreed that there is no baseline or landscape evidence on how innovation systems are structured and operate (or not). A number of 'bridge' initiatives were mentioned as positive interventions: the SGCI supports institutions based on their strategic position in the national research system; funding for pan-African networks and organizations is also supporting integration of research and system strengthening, by offering spaces where capacity and knowledge can be accessed; finally, IDRC's work on the governance of research in the university system and GDN's Doing Research program were mentioned as catalytic evidence generation efforts that can advance local attempts to strengthen the system, by providing evidence on what works and what doesn't, possibly in a comparative perspective.

Other specific type practical examples discussed include:

• Belmont Forum: a partnership of funding organizations, international science councils, and regional consortia committed to the advancement of interdisciplinary and transdisciplinary science. This international transdisciplinary research provides knowledge for understanding, mitigating and adapting to global environmental change. Proposals must be transnational and transdisciplinary in nature including natural and social scientists as well as stakeholders (decision and policy makers, communities, NGOs etc.).

• African Union and Dubai 2020: bringing the role of STI in economic sustainability as well as private sector engagement to this international event.

• Northern Kenya's biogas companies are working with local small farmers and international organizations to design research that addresses three SDGs.

• South Africa Innovation Research Program as well as Ministry of Foreign Affairs of Finland is working with private sector, academia and governmental agencies in Namibia, Botswana, Mozambique and Tanzania to build the innovation ecosystem with South Africa utilized as a knowledge partner.

• African Academy of Sciences (AAS) had several examples –

  o DELTAS Africa – 11 subprograms spread across the continent with mostly health challenges; malaria, genomics, TB, HIV, one health, biostats, mental health, infection and immunology and training ~1500 scientists.
  o Grand Challenges Africa – innovation program where private sector supports to translate research outcomes.
  o Post-doctoral training
  o Good Financial Grant Governance – includes research institutions and NGOs

• International Foundation for Science is currently supporting and training early careers to build their capacity in learning and developing their skillset on how to work across disciplines and across regions. Thus far they have trained ~150 ECRs on the methodology of how to of collaborate.

Addressing what works:
• AAS employs the Hub and Spoke approach where strong institutions are in partnership with weaker institutions. The weaker institutions can then benefit from expertise of the strong institutions.
• Principal investigators were Africans and non-Africans were based on the continent; away from the norm.

Challenges:
• Creating career pathways form early career researchers
• Balancing excellence with equity where we find there is always a few countries & institutions that win large grants
• Balancing usefulness of the research product instead of the publications or impact factor – how has your research addressed a policy concern?

Addressing what doesn't work:

It was also noted that funding to research councils too soon did not work. The type of intervention needs to be context dependent, and timelines across countries might vary.

Summary shared:

Three practical examples were used in the summary of the table discussion. Belmont Forum encourages and partners on the funding of international transdisciplinary research which provides knowledge for understanding, mitigating and adapting to global environmental change. The strength of this organization is that proposals must be transnational and transdisciplinary in nature including natural and social scientists as well as stakeholders (decision and policy makers, communities, NGOs etc.). However, a challenge is that only South Africa and Cote D'Ivoire are the only African countries that are members of the Forum and unless another member country steps forward to fund LMIC scientists then many miss out on the leveraging from this dynamic approach to research.

The DELTAS program which was introduced in an earlier session has strengths in their Hub and Spoke approach where strong institutions partner with weaker institutions. The weaker institutions can then benefit from expertise of the strong institutions. The program also attempts to shift the center of gravity of African science back to the African continent where principal investigators are Africans and non-Africans are based on the continent; away from the norm. However, they struggle with creating career pathways form early career researchers, balancing excellence with equity and balancing usefulness of the research product with publications or impact factor.

The overall sentiment is that there needs to be a shift towards context specific and the involvement of relevant stakeholders on ground. In this vein, the International Foundation for Science is already working towards these concepts by training early careers to build their capacity in learning and developing their skillset on how to work across disciplines and across regions.

Group 3 : Academia and Think Tanks

Practical examples of interventions/ investments that are inclusive, leverages informal sector/works across actors, aligned to the regional and national priorities.

World Bank Centers of Excellence, is an intervention of investing in STI for institutional capacity development (priority programs, training at PhD level)

• Europeans and American universities have incubators (public and private funding by entrepreneurial state): similar support structures are being done in Africa
• Institutionalization of Community Engagement: Village knowledge Centers in Tanzania: multi-actor approach of knowledge-transfer from university to the community. Funded by Government.
• University-Industry clusters in Tanzania: more than 60, some work others do not due lack of clear guidelines/targets and measures.
• Indigenous knowledge production: Traditional healers (around 1000 practitioners) are organized and treating diseases. The University of Rwanda in collaboration with Kwa Zulu Natal University is working with traditional healers to develop/safeguard their knowledge.

What existing evidence is available to make the case for these types of investments? What additional evidence would be needed that is not available?

• In Kenya Innovation Agency, a separate institution from the national granting council is regulating the research and this will be an opportunity for universities to take up these innovations for further research.
• Government of Rwanda has put in place traditional Healers, currently drafting the law.

Additional evidence:

• Demonstration to governments and other funding agencies on R&D return on investment.
• Demonstrating financial contribution to national budget by university-industry work (R&D).
• Combination of metrics and case-studies to make evidence-based policy making.

Project partners:

Funded by: