

Science, Technology and Innovation Policy for Transformative Change - AFRICA



This briefing summarises the key points and ideas emerging from discussions held during SPRU-Africa Engagement Week, held in Pretoria and Johannesburg, South Africa, 23-27 May 2016. It provides insight into possible ways that SPRU can work with partners in Africa to develop STI policies for transformative change. The week brought together a wide range of stakeholders and included different sectors, including government agencies, universities and research centres, firms involved in innovation, and non-governmental organisations, to discuss issues related to Science, Technology and Innovation

(STI) policy. The aim was to build on SPRU's long history of engagement in Africa and explore ways to address pressing innovation challenges, and to foster innovation that is sustainable, inclusive, has a low impact on the environment and does not exacerbate inequality.

The week culminated in a conference on Science, Technology and Innovation Policies for Transformative Change, held in partnership with the South African Department for Science and Technology, with delegates from countries across Africa.

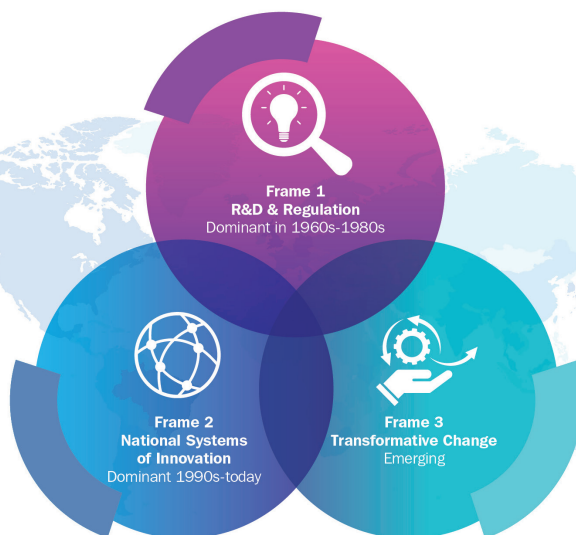
The Transforming Innovation Agenda and STI Policy for transformative change

A consensus appears to be emerging among STI and policy stakeholders in Africa on the need to transform innovation policy and thereby innovation itself. Traditional innovation policies have failed to deliver the expected levels of socio-economic and development gains across the continent. The conference provided a platform to discuss three key concepts of innovation policy, as illustrated in Figure 1. While Research and Development (R&D), and National Systems of Innovation (NSI) are well established and have proven value, it is timely to ask whether they should be complemented with the concept of Transformative Change. Evidence also indicates that present-day S&T and R&D-led innovation has contributed to exacerbating poverty, inequality and social exclusion and thus may be reinforcing these societal challenges rather than addressing them. There is a need to explore new avenues for innovation policy.

STI policy is a major area of concern and interest in Africa. There are significant gaps in the implementation of public policies that are in place. Some of these gaps have been traced to weaknesses in the policy formulation. It is therefore imperative that careful attention is paid to weaknesses in the policy formulation phase. It is also important that the challenges of policymaking are addressed from an interdisciplinary perspective. SPRU is able to work with actors in various African countries in designing research and experiments on transforming local, regional and global innovation agendas to improve the development of innovation (including science and technology) policies and policymaking.

Figure 1 – Three Frames of Innovation Policy

(based on: Professor Johan Schot [Director, SPRU] and Professor Ed Steinmueller [SPRU], Framing Innovation Policy for Transformative Change – Innovation Policy 3.0. SPRU Working Paper series, forthcoming).



Opportunities for collaboration between African partners and SPRU

Joint Research Chairs and Research Partnerships

It emerged that there is appetite, particularly from South Africa, Nigeria, and Kenya, in setting up a Joint Research Chair (JRC) in each of these countries. The JRC, to focus on Innovation Policy for Transformative Change, will facilitate research partnerships and projects, collaboratively designed from the ground up. There will be space for flexibility in how the JRC programme is implemented, ensuring that it is context-based and country-specific.

Capacity Building, Training and Mentoring for Innovation and Transformative Change

Capacity-building will be at the individual and organisational level. A diverse range of stakeholder groups was identified. This includes members of the informal sector as they have specific knowledge to contribute. Knowledge sharing amongst these different groups was deemed to be critical.

Recommendations for possible areas of research and collaboration include mapping the current capabilities and initiatives in Africa, supporting capacity-building initiatives driven by Africans, and assisting in the development of monitoring and evaluation tools. SPRU is also considering establishing PhD scholarships, which would focus on certain topics related to Innovation Policy for Transformative Change that are of strategic importance to particular African countries. Dedicated and sustainable funding is required for training. This needs to be further explored in collaboration with industry, academia, government and international development partners. There is also a need for targeted training in various aspects of STI policymaking, such as formulation, implementation, reviews, and measurement and evaluation of policy outcomes. Some of the key issues include challenges in identifying people to be trained, and designing and implementing training programmes to ensure efficiency and sustainability. SPRU could collaborate with African universities to design training programmes, and

with national government agencies to conduct needs assessments.

Developing STI Indicators and measuring innovation

In order to sufficiently capture innovation activities in Africa, there is a need for new and/or alternative indicators (NAIs). Such NAIs would be expected to be more wide-ranging, to capture innovation activities from the informal sector, and to measure innovation activities that are of interest and relevance to individual localities, nations or regions. They would be able to capture 'high-tech' as well as 'low-tech' STI, formal and informal (indigenous) knowledge sources, and be open to continuous improvement, within an agreed framework. Effective measurement of innovation activities [that, for example, goes beyond simple ex-post indicators and monitoring to ex-ante and real-time approaches; and that shifts from input and output indicators to more focus on outcome indicators] is essential to policy-relevant research, good governance of STI, and evidence-based policymaking. SPRU has an active research programme focusing on indicators and measurements of STI, and welcomes opportunities to work with colleagues in Africa in this regard.

Energy Security, Low Carbon Development and Transformative Change

The Energy Trilemma, with its three dimensions of energy security, energy equity and environmental sustainability, is relevant here. However, the SPRU-Africa engagement findings revealed that at the local level the poor do not necessarily respond to the trilemma issues - often they are more concerned with access and affordability. There remain considerable disparities regarding grid connection across countries in Africa. It was agreed that solutions for those who are off-grid should also take into consideration aspirations for grid access. For solutions to be effective and sustainable it is imperative that off-grid technologies are reliable, of good quality and affordable.

Policy interventions should consider a range of issues including the role of entrepreneurs, the substantial capital investments required for different infrastructures, geo-political issues and strategic trade partnerships. Energy Policy is one of SPRU's core areas of expertise. SPRU is home to a research Centre on Innovation and Energy Demand (CIED) and has a dedicated MSc course in Energy Policy.

Inclusive Innovation for Development

Innovation for, by, and with, marginalised groups should be promoted. Policy processes can support both innovation as a mechanism for inclusion, as well as the role of the informal economy in achieving transformative change. The informal economy in Africa is large and durable. This needs to be recognised by NSI actors. Policymakers must seek ways of leveraging frugal, social and green innovation already occurring in the informal sector. Innovators and users in this sector are more familiar with their contexts than policy actors, and have some capabilities for developing solutions to their own problems. Policy support is required to scale up these solutions, where appropriate. Building capacity at the grassroots level could enable more successful development of inventions and their commercialisation. There is a need for more empirical case studies that provide insights into the often opaque innovation processes in the informal sector, as well as more investment in identifying and developing the type of infrastructural support required to support these.

Next steps in the SPRU-Africa Engagement Programme

It is clear that the current R&D and STI models are failing to adequately decrease inequality levels, environmental degradation and poverty in Africa (and elsewhere). The approach offered to confront these challenges is captured in the concept of 'Transformative Change'. To achieve this in Africa a range of relevant issues must be tackled, including those outlined above. The SPRU-Africa Engagement helped to determine the key thematic areas of focus and possible next steps in terms of research, policy interventions, capacity-building and forging effective partnerships to move forward.

Further Engagement with SPRU

The ideas shared in this briefing form part of a much wider body of work in progress within SPRU. We hope this paper has provided a useful point of entry from which we would value continued engagement and discussion.

For further information on the SPRU research strategy 'Transforming Innovation' visit: www.sussex.ac.uk/spru/research/strategy.


More information on SPRU's work in Africa is available at: <http://www.sussex.ac.uk/spru/about/50years/africa>.

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