Science, Technology and Innovation (STI) Policy Training Workshop

SGCI Theme 3[1]

Workshop Report

Venue:

Kenya School of Monitory Studies, Nairobi

4-6 March 2019

Workshop participants

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1.0 Introduction

This training workshop was designed to be the first delivery of training modules in science, technology and innovation (STI) policies for Africa's science granting councils (SGCs) and their partners; the major objective being to enable the Councils to have a clear understanding of the theoretical and conceptual issues surrounding the design of necessary policies and instruments for linking scientific research to the activities of the private sector in the environment of poor countries, such as those in Africa. Such a need is based on the premise that theories are essential tools for policy making: many scholars of public policy convincingly argue that most policy debates ultimately rest on competing theoretical visions.

1.1 Rationale

The module was proposed as a result of the experience of theme 3 consortium (ACTS consortium) in interacting with policy makers in a number of African countries, including participating in the design and reviews of STI policies. It became clear that, to a large extent, understanding of some of the terminologies, concepts and theories used in the general concept of STI are a major stumbling block in the design, implementations and monitoring of STI policies. Innovation is context specific in the sense that what works in one context does not necessarily work in the others, and so is innovation theory; and therefore, relying on theories that are not tested in particular contexts for policy analysis, can lead to major STI policy disasters. The module has therefore been designed to address these critical conceptual issues, especially those around connecting knowledge (scientific research) to use by the private sector in an environment of poor countries such as those in Africa. For effectiveness, theoretical and conceptual issues were discussed in the light of the current practice and experience of the science granting councils.

Given limited time and other resources, the training module was restricted to only very basic conceptual issues surrounding the concept of innovations – especially the role of demand, and the interactive learning among important system actors, especially those responsible in connecting research and productive activities; within this, in-depth explanation on the triplet of STI and the interrelationships between individual components were the major focus. Such explanations clearly brings to the fore the relationship between research and innovation in different social and economic settings. The relationship between theory, practice and policy were also briefly taken up because in most cases this relationship is not clearly understood, neither valued, not only by the policy makers, but also by researchers themselves. We have often heard of the statement: "do not bring in theories here, we want practical things"; not realizing that those practical things, always – whether consciously or unconsciously - have some mental maps (some conceptual thinking) behind them. The intention of the module is to have – as much as it is possible – a conceptual thinking that is as close to the reality of the underlying problems/issues a certain STI policy objective is trying to address.

In addition to these topics, the policy process itself and the role of evidence in this process, were also adequately treated during course.

1.2 Objectives of the training

i. The Councils to appreciate the role of theory and conceptual understanding of the STI in the policy process or action they intend to take in an effort to close the gap between scientific research and the productive activities.

ii. The Councils to understand the interrelationships between individual aspects in the concept of STI; and how these interrelationships depend on a given social and economic context, and what this means for research policy.

iii. The Councils to understand forces behind innovative activities and the role of knowledge (scientific research) in the process.

iv. The councils to understand the linkage between scientific research and productive activities in different socio- economic settings.

v. The Councils to revisit the current policy making processes in their own countries so as to reconcile theory and practice, and propose appropriate policy instruments.

1.3 Topics that were covered

i. Conceptualizing science, technology and innovation: History and interrelationships between the three components of STI in different social and economic settings.

ii. Historical account of innovation models and associated innovation policy shifts – from linear model of push and pull types, to systems of innovation and the relevance to African context

iii. The overall policy process: agenda setting, policy formulation and adoption, policy implementation, and monitoring and evaluation and learning.

iv. The role of research and evidence in the policy making process: science of science policy.

1.4 Materials used for the workshop

i. Course concept note was developed, and together with appropriate reading materials, sent to the participants in advance of the training via email. Handouts were provided in hard copies at the training venue.

ii. Group exercises and discussions were integral part of the workshop program: Questions and exercises were prepared beforehand, and discussions - both during group work and plenary - facilitated. Questions focused on experience sharing – trying to bring together policy, theory and practice.

iii. Extra reading list was prepared – for participants to read on their own even after the training.

2.0 Training daily proceedings

2.1 Unit One:

Understanding Innovation and the Interrelationships between science, technology and innovation

This unit was delivered on day 1 of the workshop. After a general welcome and remarks about the workshop and its objectives (by Rebecca Hanlin), Bitrina Diyamett introduced preliminary discussion on the economic and social relevance of STI and the role of policy:

- Why is innovation important?
- Why is policy important?
- Importance of reconciling theory, policies and practice; and why focusing on SGCs

The unit covered the following topics: understanding the concept of innovation, types and degrees of novelty of innovation, interrelationships between science, technology and innovation – historical perspective, the concepts of modes of innovation: DUI (doing, using and interacting) and STI (Science, technology and innovation).

After Dr. Diyamett's presentation, a Q&A session took place, after which there was a break. Returning from the break, group work for Unit One started. Attendants were divided into groups and each group engaged in discussion to answer a list of questions/issues for discussion provided. After group discussion and answers, each group presented their response to the questions.

Discussion and comments:

Many issues were raised and discussed to the satisfaction of participants. However, one thing especially drew the attention of many participants: a discussion about the decision of African governments to allocate the 1% of their GDP to R&D activities. While some participants found the 1% figure to be on the higher side since it has not been achieved by the majority countries, there were others who argued that the continent needs more investment in research beyond its current threshold - emphasis being to improve internal sources of R&D financing both public and private. Others argued that whether it is or beyond the 1%, what is important is linkage between research and social and economic activities – current and potential. But also the importance of detaching from donor dependency and gain more control over the countries' research agenda was emphasized. It was also emphasized that SGCs pay more attention to the quality of the research they fund in terms of stimulating new innovations and serving societies through public R&D investments. Collaborations among regional SGCs and their affiliated research and academic institutions was also recommended - given a wide set of shared research challenges.

Another issue that also drew the interest of many participants is policy choices between Doing Using and Interacting (DUI) and the Science Technology and Innovation (STI) approaches. Many participants had the view that complementarities between the two modes should be the way to go, especially because the DUI model fits better with the informal sector which is dominant in Africa.

In the process of discussion, Participants shared their experiences on the place of their SGCs within their governments' structure, and how this made it easier/difficult to influence policies. The coordination role was reported to be easier for Council like the Rwandan one, which is positioned under the president's office. Nevertheless, some SGCs did not find it very challenging to coordinate research under their different bureaucratic positions.

2.2 Unit Two

Historical account of innovation models and implications for policymaking

Hezron Makundi delivered this unit, on days 1 and 2. The presentation was given on day 1, followed by a Q&A session. Group work continued on day 2, in similar fashion of the group work as in Unit One. The main topic of group work was 'measuring research and innovation in Africa.'

The main objective of this unit was to equip the participants with a general understanding of the main concepts related to the historical evolution of conceptualizing innovation as a systemic process, and its implications to policy making. Dr. Makundi covered topics in this unit including: a historical account of the innovation models, the linkages between innovation theory, policy and practice, the basic models of innovation – from linear model of push and pull types, to systems of innovation, and the relevance of innovation models to the African context.

Discussion and comments:

Participants emphasized on the need to contextualize the concepts in use, including NSI which are not originally from Africa in order for them to fit with the African situation. This goes along with the recommendation that developers of the training module draw more examples from the African innovation systems.

The discussion on STI Indicator was enriched by experiences shared among participants from the SGC, including their various levels of experience in indicator-generation exercises. As they shared such experiences, participants agreed to take the discussion further to the objective 2 of the SGCI. Participants emphasized on the need to maintain and make use of databases on STI indicators and related statistics including those on trading, education and industrial development for complementarities and accuracy.

Participants commended the ASTII initiative by NEPAD for coordinating the African regional efforts to standardize the measurement of innovation inputs and outputs. They also recommended the re-designing and deployment of an African-focused set of additional indicators beyond those identified by the Oslo and Frascati Manuals. Among the benefit of such additional indicators include the ability

to capture the large part of innovation related issues in Africa, for example those residing in the informal sector, traditional medicine practices and indigenous knowledge, etc.

Engagement of stakeholders to determine the country needs, designing of the indicators, data collection and storage was also reported as a crucial part of the STI-Indicator exercise among the SGCs. The use of internet and online data collection tools was recommended, but it was considered useful only to the SGCs from a limited number of African countries with higher internet penetration.

2.3 Unit Three

The innovation policy process

Dr. Diyamett delivered unit three on day 2, after group work on unit 2 were done with. The objective of this unit was to inculcate better understanding of the STI policy making process among the SGCs. It covered the following topics: what a public policy is, and specifically what is the STI policy, the science policy, the technology policy, the four stages of the policy process: agenda setting, policy formulation and adoption, policy implementation, and policy monitoring and evaluation, the concepts of policy instruments, policy mixes.

Before the presentation, Dr. Diyamett asked participants to briefly discuss the STI policy priorities in their countries and the role of respective SGCs. Particularly, discussion was steered towards highlighting which aspects of the innovation policy process seem to be more critical or challenging to the SGCs. After brief session, the presentation was delivered with such priorities and challenges in mind.

The group work for this unit was so that each group should pick any STI policy of their choice in a given country, then discuss it in the light of what was just learnt. The discussion was structured by giving a list of questions to respond to regarding the policy chosen.

Discussion and comments:

The discussion for this unit was largely based on experiences sharing about the making of STI policies among the SGC representatives. Each group selected one country policy and presented the various policy processes different experiences and challenges encountered; the outcome of this exercise depicted a diverse mix of approaches and experiences. For instance while some countries initiated the policy formulation based on recommendations of the Regional body (ECOWAS), for some countries the policy process originated from a National strategy document, others a President's vision and in some cases it was an outcome of a study commissioned by the responsible Ministry. The experience of Rwanda with a guided format for all policy documents in the country was found to be interesting to other participants.

The need to engaging all key stakeholders in the policy process was emphasized on several occasions during the discussion. An example was given where a sensitive environmental policy document was stuck and returned back to an earlier stage because some key stakeholders were ignored.

The policy documents in the presentations demonstrated a lot of commonality and some divergences. In some cases the process involved a completed policy cycle as explained during Dr. Diyamett's presentation, while some policies had only exploited some part of the cycle. The most prominent gap was experienced on the Policy M&E phase, this phase was emphasized during the discussion given its importance in policy formulation. The main concern on M&E was costs, but the facilitator emphasized that without the proper MEL and implementation mechanism – emphasizing the role of learning in the course of implementation – the policy document loses its meaning.

A challenge of costing the policy objectives was tabled by a participant- one suggestion was to make estimates while planning, and recast at the course of policy implementation. Another suggestion was to undertake an ex-ante evaluation in order to understand the gaps and cost implications.

Emphasizing the role of implementation in the policy process, Dr. Diyamett, explained the fact that, the true meaning of a policy is what the government is doing, and not what it intends to do – something that seems to be agreeable by most of the participants

2.4 Unit Four

The role of research in the policy process

Gussai Sheikheldin delivered this unit on day 3 of the workshop. This unit was designed to show how in order for STI policies to be evidence-informed, they need to integrate STI research and the findings of relevant research. Through this unit, the participants were encouraged to consolidate their understanding of the role of knowledge (scientific research) in the process of STI policy, as well as the linkage between scientific research and productive activities in different socio- economic settings. Key to the whole process is the role played by knowledge translation and knowledge brokering. Concepts and keywords introduced by the unit also included: knowledge translation, knowledge brokering, and systems thinking.

The topic covered in this unit included: Research for policy and research about policy (policy research); Policy of research (research policy);Research that influences policy and policy that influences research; The nature of evidence for policy; Knowledge translation and brokering— building a two-way road between STI and policy; and the relevance of STI policies for Africa.

Dr. Sheikheldin presented the unit using multiple examples and stories, along with highlighting main categories and distinctions of policy-research interactions. For the group work of the unit, 4 case studies from different parts of the world, with different highlights and outcomes, were provided to the 4 groups of participants. Each group studied their case, then answered common questions about it, along with their own conclusions and summary from discussing the case.

Discussion and comments:

Participants presented the outcomes of their discussions based on the four case study examples provided. They commended the use of diverse case studies in the group exercise. The feedback was also positive regarding the geographical, economic and policy relevance of the issues discussed in

the examples. For example, similar approaches were recommended to trace the effect of some products claimed to have environmental or social hazards as it was done for the example case study of DDT.

Among the key lessons from unit 4 include an emphasis on how to repackage and present the research evidence for the public consumption and policy making process. The skills on results packaging were recommended for researchers and where possible dissemination strategies need to be included in research proposals.

Reflections and wrap up – with some take home points

After the conclusion of Unit Four, a final session on wrap-up and feedback, coordinated by Dr. Hanlin, followed. All participants gave feedback about what they took or benefited from the workshop material and discussions.

Some of the main points, lessons and suggestions from this session include:
- The cross-fertilization of knowledge and experiences between and among SGCIs and CTAs was highly acknowledged. This include the fact that the examples provided by participants to go into the final version of the training manual that is being prepared by the theme three CTAs.
- Some participants proposed that knowledge of the STI policy process is very important for the development of countries, and therefore proposed that such training be integrated into university curricular.
- Interactive nature of the delivery of the training was appreciated by many participants: Presenters and participants shared information and interacted proactively.
- The fact that the topics were delivered with a coherent flow and did not feel like fragmented lectures was very much appreciated.
- It was proposed that future workshop could spend more time dissecting one or more policy documents.
- A proposition was made to share participants' respective policies (SGCs) in one google drive, so that countries learn from each other.
- Some participants requested resources for further reading to be provided (in addition to the three reading documents that were provided to the participants a week before the event.
- Following were proposed for improvement of similar trainings in future: French translation of materials before the event. Also, although the French-English interpreters hired for the event were very competent, the variety of concepts and ideas that are specific to the issues meant that the flow of interpretation was challenging.
- Consideration of putting some of the material in a video/audio form was proposed.
- The organized content and case studies were found to be very helpful. In future events, perhaps more case studies for group work could be provided.

Workshop participants from the SGCs expressed their interest to share the workshop training module with their colleagues and stakeholders in their countries; and a workshop handbook/manual under preparation by STIPRO was found to be very relevant in this regard.

APPENDICES:

PROGRAM AND PARTICIPANTS' LIST

Program

Monday 4th March 2019		
Time	Activity	Responsible
9.00 – 9.15	Introduction to the course and welcomes	Dr. Rebecca, Hanlin – Coordinator, ACTS Consortium
9.15-9.45	Presentation: Unit one on: **Understanding Innovation and the Interrelationships between science, technology and innovation**	Dr. Bitrina Diyamett, STIPRO
9.45-10.00	Quick Q&A session	All
10.00-10.30	*Tea break*	*All*
10.30-12.00	Group work for unit one.	Groups
12.00-1.00	Group feedback	Groups
1.00-2.00	*Lunch break*	*All*
2.00-3.00	Group feedback (continued)	Groups
3.00-3.40	Presentation on unit two on: **Historical account of innovation models and implications for policy making**	Dr. Hezron Makundi, STIPRO
3.40-4.00	Quick Q&A session	All
4.00-4.30	*Tea break*	*All*
4.30-6.00	Unit two group work	Groups

Tuesday 5th March 2019		
Time	Activity	Responsible
9.00-11.00	Unit two group feed back	Groups
11.00-11.30	*Tea break*	*All*
11.30-12.00	Presentation on unit three on: **the STI policy**	Dr. Bitrina Diyamett,

	process	STIPRO
12.00-12.15	Quick Q&A session	All
12.15-1.00	Group work on unit three	Groups
1.00-2.00	*Lunch break*	*All*
2.00-3.00	Group work on unit three (continued)	Groups
3.00-5.30	Group feedback work unit three *(including tea break)*	Groups
Wednesday 6th March 2019		
9.00-9.30	Presentation on unit four on: **The role of research in the policy process.**	Dr. Gussai Sheikheldin, STIPRO
9.30-9.45	Quick Q&A session	All
9.45-10.15	*Tea break*	*All*
10.15-12.00	Group work on unit four	Groups
12.00-1.00	Group feedback on unit four	Groups
1.00.2.00	*Lunch break*	*All*
2.00-3.00	Group feedback on unit four (continued)	Group
3.00-4.00	Reflections and wrap up – take home points and evaluation of the materials	Dr. Rebecca Hanlin, ACTS Consortium
4.00-4.30	Closing	Dr. Rebecca Hanlin, ACTS Consortium

List of Part of Participants

STI Policy Workshop
4ᵗʰ-6ᵗʰ March 2019
Kenya School of Monetary Studies (KSMS) Nairobi

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