ASSESSMENT OF NATIONAL CAPACITY FOR SCIENCE, TECHNOLOGY AND INNOVATION POLICY FORMULATION AND IMPLEMENTATION

Introduction

The African Observatory for Science, Technology and Innovation (AOSTI) is a specialized agency of the African Union (AU) established in 2010 in Malabo, Equatorial Guinea. AOSTI's remit is to support African countries to design, improve and implement modern policies for science, technology and innovation (STI) for development. It is to enable the countries gather statistics and other evidence for STI policy formulation, implementation, monitoring and evaluation. AOSTI is developing its first five year programme of work.

AOSTI has commissioned the Science and Innovation Policy Studies (SIPS) Corporation to conduct a comprehensive assessment of national STI policy capacity needs of African countries. The assessment will provide information on capacity status, needs and priorities. AOSTI will use the information in order to develop a specific programme for building STI policy capacities in Africa.

Definitions

The concept of 'STI policy' is gaining currency in the lexicon of government decision-makers, researchers, donors and development practitioners yet its meaning is rarely explored. It is increasingly used as a title of policy documents and studies but rarely is it defined. It seems to mean different things to different persons. The concept is thus subject to misuse and abuse. It is crucial to establish some measure of conceptual clarity of what constitutes STI policy. Conceptual clarity is crucial for any initiatives that are aimed at building STI policy capacity.

It is important that we first define what STI are because there is a tendency to interchangeably use these words. It is not unusual to come across the term science being used to refer to technology, and vice-versa or innovation used to mean technology. Though interrelated, STI do not mean the same thing. Science is the systematic inquiry into nature and natural things. It is about gaining a deeper understanding or knowledge of the world.

Technology is the application of science to modify natural things. Most people, however, tend to think of technology only in terms of hardware or artefacts such as computers. But technology is more than tangible products (goods and services). The processes used to develop and use technological artefacts also form part of technology. Often technology is confused with innovation. Innovation is the introduction and diffusion of new products processes and ways of doing things into an economy or institution. It is also about the introduction and diffusion of new organizational practices such as improved communications and new marketing techniques.[1] On the whole, there are two forms of innovation: technological and non technological.

STI are coupled and interrelated. Scientific advances are the basis for much of technological developments. For instance the design of computer chips depends to a large measure on scientific understanding of electrical properties of materials such as silicon. But, technology is also the basis for many of the scientific research activities. For example, climatologists and meteorologists use supercomputers to run simulations and study climate change. Most scientists cannot operate without the computer, telephone and the Internet.

[1]Aubert, J., (2004), 'Promoting Innovation in Developing Countries: A Conceptual Framework'. World Bank Institute, Washington, D.C.

Technology and innovation are also synergistic. For example, the development and use of information and communication technologies have fuelled major organizational reforms. The development of gene-sequencing machines has made it possible to decode the human genome.

Then *what is STI policy*? Generally, it is about the governance of STI activities. By this we mean decisions and actions that are taken by governments to *promote, regulate and use* scientific advances, technological development, and innovation. STI policy is actually a regime of many policies. It has two facets:[2] ***policies for science, technology and innovation, and STI for policy.*** These facets are not separable and but constitute a useful typology for studying and understanding STI policy making.

Policies for STI are about actions that governments or decision-makers take in order to promote scientific research, development of technology, and diffusion and adoption of technological innovations. Such measures include choice of R&D projects, choice of technology, allocation of resources for scientific research and technology development, economic and legal incentives for private firms to adopt and use new technologies, regulations on procurement of new technologies, regulations for research and clinical trials, bio safety, and the protection of intellectual property rights.

Some of policies for STI are explicit and others implicit. Explicit policies are those that are deliberately instituted to promote and/or regulate scientific, technological and innovation activities. Implicit STI policies are those measures or decisions that are taken to address other issues, largely non-STI issues, without having STI promotion and/or regulation as deliberate goals but such measures impinge on the conduct and promotion of STI.

STI for policy is when science and technology are used for policy development. Scientific data or information, information on the nature and impacts of a technology and data on innovation are used to inform policy-makers with the aim of influencing and enhancing their abilities to make decisions. This is about the use of science and related technological information to determine or influence decision-making in the wider sphere of governance. It also includes the use of STI to identify and building understanding of problems such as global warming and diseases.

[2] Stine, D. (2009), 'Science and Technology Policymaking: A Primer' Congressional Research Service (CRS) Report for Congress provides a neat useful typology of science and technology policy.

Questions

The following questions are intended to generate some empirical information on STI policy capacity needs. They will be answered through discussions with interviewees or respondents.

Full Names	
Name of Institution	
Name of Country	
Email	
Telephone	
Skype or any other means of communication	

1. Does your country have a department and/or ministry that is dedicated to the formulation of STI policies? Yes/No,

If yes, please name the department/ministry

2. What other institutions are responsible for STI policy formulation in your country?

3. Does your country have a current S&T or STI policy document?

4. When was the S&T or STI policy adopted?

5. Is your country currently involved in the formulation of a new STI policy?

6. Does your country have a programme for STI policy formulation?

7. What is the source of expertise for STI policy formulation?

(a) Universities?
(b) Foreign consultants?
(c) Local consultants?
(d) Staff of the ministry and/or department?
(e) All of above?

8. Does your country have individuals who are trained in STI policy analysis?

9. Are there training courses/workshops on STI policy analysis provided or conducted in your country?

10. Is there a specific budget dedicated to STI policy formulation in your country? If yes, what is the annual budget (US$ equivalent)?

11. What are the specific STI policy capacity building priorities and needs of your country?

12. Are there institutions and/or programmes for STI policy capacity in your country? If yes, please list or name.

13. Does your institution or your country's STI ministry or department have a library or access to documents on STI policy?

14. What are the specific infrastructure needs of your country to effectively engage with STI policy formulation, implementation, monitoring and evaluation?

15. Is your country's presidency involved in promoting STI policy formulation and implementation? If yes, please describe how it is involved?

16. Are parliament and civil society engaged in the formulation of STI policy in your country? If yes, how?

17. What specific aspects of STI policy capacity building should AOSTI focus in its programme of work?