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**REPORT OF THE ATPS-UNESCO CAPACITY BUILDING WORKSHOP IN SCIENCE, TECHNOLOGY
AND INNOVATION POLICY FORMULATION AND IMPLEMENTATION FOR SUSTAINABLE
DEVELOPMENT IN EAST AFRICA**

Held from 31st October - 1st November, 2011, at the Hilton Hotel, Nairobi, Kenya

PREPARED BY THE AFRICAN TECHNOLOGY POLICY STUDIES NETWORK (ATPS)

Acknowledgement

I wish to thank UNESCO for offering the African Technology Policy Studies Network (ATPS) through its Executive Director Prof. Kevin Urama the opportunity to train the scientists and policymakers from East Africa in science, technology and innovation policy formulation and implementation for sustainable development. Most especially, I am grateful to the team at the ATPS including Dr. Nicholas Ozor, Dr. Maurice Bolo, Dr. Michele Mboo, and Mr. Ernest Acheampong for facilitating and conducting the training.

I thank all the participants from Kenya, Uganda and Rwanda for their audience and numerous contributions to the training process. I urge them to apply all that they have learnt from the training in their respective countries to be able to sustain development in STI policy formulation and implementation.

Prof. Kevin Urama

Executive Director, ATPS

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Acronyms

ATPS	African Technology Policy Studies Network
ECA	Economic Commission for Africa
GPRS	Growth and Poverty Reduction Strategies
IA	Institutional Arrangements
IMP	Issue Management Plan
IPRs	Intellectual Property Rights
MDGs	Millennium Development Goals
NGO	Non-governmental Organisation
NSI	National System of Innovation
PM&E	Participatory Monitoring and Evaluation
R&D	Research and Development
ST&I	Science Technology and Innovations
UNESCO	United Nations Educational, Scientific and Cultural Organization

UNESCO CAPACITY BUILDING WORKSHOP IN SCIENCE, TECHNOLOGY AND INNOVATION POLICY FORMULATION AND IMPLEMENTATION FOR SUSTAINABLE DEVELOPMENT IN EAST AFRICA

1.0 BACKGROUND

Decades ago, African countries realised that science and technology was crucial to economic development, so many institutions were put together to make recommendations as to how best to advance this course. In spite of this political will, progress in this area has not been appreciable as compared to those of Malaysia, India, Korea, China etc. One of the key issues identified was the slow pace at which appropriate technological innovations are used for social, economic and industrial development as well as how these are working for the poor. Several policy papers including Consolidated Plan of Action, national Vision documents and Growth and Poverty Reduction Strategies (GPRS) treated science and technology as a cross cutting issue, and were not explicit on the use of science, technology and innovation for modernising production of goods and services and wealth creation.

The important linkage between Science, Technology and Innovation (STI) and development is amply illustrated in the socio-economic advancement in the industrialised and newly industrialising countries. Their strong scientific and technological bases have supported productive activities, which have given them competitive advantage on the global markets and facilitated development in the respective countries.

The Millennium Development Goals (MDGs) have become the ultimate global development agenda covering almost all aspects of human life. These MDGs cannot be achieved without a framework of action that places science, technology, and innovation at the center of the development process. UNESCO's Biennium Sectoral Priority 1 for 2010-2011 is to step up its STI policy advice, capacity building and monitoring. The Science with Africa Conference II hosted by Economic Commission for Africa (ECA) in Addis Ababa in June 2010 reiterated the need for member states to harness science, technology and innovation for sustainable development of the region and put a monitoring and evaluation system in place to access its impact on improving Africa's competitiveness.

These strategies call for the development of astute and dynamic scientific, technological and innovative capacity which must be deliberately planned and built within a policy framework. The goals and objectives of the capacity building were designed to clearly articulate and link to the respective national development objectives. This training was aimed at building the requisite STI policy review, implementation, monitoring and evaluation capacity in Uganda, Rwanda, Tanzania and Kenya.

Each of these countries reflects the diverse developmental characteristics of East African countries with challenges in effective STI policy implementation for accelerated socio-economic development. It is against this background that UNESCO engaged the African Technology Policy Studies Network (ATPS) led by its Executive Director Professor Kevin Urama as a consultant to map the policy environments of the countries and use this data as a reference for the training of policy makers, academics, private sector and/or parliamentarians in STI Policy formulation, implementation and monitoring. This led to the training of about 15 stakeholders selected from the stakeholder categories mentioned above. The training was meant to enhance the capacity of the stakeholders in their application and development of STI for sustainable development in their respective countries. More specifically, the training was aimed at:

1. assessing the policy environment for application and development of the STI in the selected countries;
2. providing training for trainers of STI policy formulation/review, implementation, monitoring and evaluation; and
3. developing in-country action plans/road maps for national STI policy implementation.

1.1 Workshop methodology

The training workshop adopted multiple approaches to stakeholder participation so as to ensure active participation of each stakeholder in the dialogue, identification of gaps and prioritization of strategies for improvement. Firstly, there were opening remarks and keynote presentations, followed by facilitated brainstorming sessions. The aim was to achieve common understanding and a systems perspective for assessing the policy environment for application and development of STI in the selected countries and identify strategies for STI policy formulation/review, implementation, monitoring and evaluation; and in-country action plans/road maps for national STI policy implementation.

1.2 Expected Outputs

1. An inception report indicating the work plan, training methodology/tools and a draft training manual;
2. Actual training of trainers workshop organized for fifteen participants comprising academics, policymakers and the private sector; and
3. A report on the training workshop both in soft and hard copies.

2.0 Workshop Opening Remarks

2.1 *Statement by Dr. Peggy Oti-Boateng*

In her opening remarks, the Senior Programme Specialist, Science and Technology, UNESCO, Nairobi, Kenya, and Coordinator of the UNESCO capacity building in STI initiative in Africa, Dr. Peggy Oti-Boateng welcomed the participants to the workshop. She reminded the participants of the objectives of the workshop which is to enhance the capacity of the stakeholders in their application and development of STI for sustainable development in their respective countries. She stated that a similar training was already concluded for West African stakeholders in the STI policy formulation and implementation for sustainable development. She recalled that capacity among key actors is what is required to fully harness the potentials of STI for sustainable African development. Acquiring this capacity, she noted, requires regular experiential learning through systematic training programmes for key actors in the sector. She thanked the consultant, Professor Kevin Urama and his team from the African Technology Policy Studies Network for accepting to train the stakeholders. He remarked that the ATPS is a leading international centre of excellence and reference in STI systems research; training and capacity building; communication and sensitization; knowledge brokerage; policy advocacy and outreach in Africa. This long standing experience necessitated the choice of the ATPS and its Executive Director to offer the training. In conclusion, she urged the participant to participate actively in the workshop and ensure that the goals of the workshop are realized at the end. At this stage, Dr. Oti-Boateng invited the representative of the Kenyan participants from the National Council for Science and Technology (NCST) to give his welcoming remarks on behalf of the Kenyan government.

2.2 *Welcoming remarks by Dr. David Njubi, National Council for Science and Technology, Kenya*

In his welcoming address, Dr. David Njubi from the National Council for Science and Technology, Kenya thanked UNESCO for organising the workshop which was a commendable initiative that would certainly encourage participants to share more ideas and move the process of communicating ST&I to African people more effectively. He reiterated the pivotal role of ST&I as strategic tool to build up competences and competitiveness for achieving sustainable economic development. He observed that African countries are increasingly acknowledging the need for ST&I to stimulate technological and industrial transformation of Africa. He therefore pleaded that African governments should focus on formulating and implementing policies and strategies that promote the integration of ST&I in all sectors of national economies. He concluded by welcoming everyone and wishing the participants fruitful deliberations and exchanges.

2.3 Opening Remarks by Dr. Abou Amani, Senior Programme Specialist, Hydrology, UNESCO, Nairobi, representing the Director UNESCO-ROSTA

Dr. Abou Amani welcomed and thanked all the participants for their participation in the important workshop on capacity building in Science, Technology and Innovation policy formulation and implementation for sustainable development in East Africa. He pointed out the overall role of UNESCO in mobilizing science knowledge and policy for sustainable development. He commended the tremendous efforts made by UNESCO in advocating for the crucial place of Science, Technology and Innovation for sustainable development among its member States. Thereafter, he mentioned some of UNESCO achievements such as the Science Agenda adopted by the World Conference on Science and the International Council for Science and the UNESCO Science Report published every five years. He concluded by noting that UNESCO will always provide its assistance to African countries and other partners to create an environment conducive to Science, Technology and Innovation.

3.0 SETTING THE STAGE

3.1 Overview of the Workshop by Dr. Peggy Oti-Boateng

Dr. Oti-Boateng provided an *Overview of the STI Capacity-Building Workshop*. In her presentation, she highlighted the crucial need to harness Africa's potential in order to drive its competitiveness and achieve its development goals. She noted that Africa is well endowed with valuable energy and natural resources, human resources and diversity of cultures. However, to effectively take advantage of the wealth, African countries should think of strong scientific and technological bases as well as monitoring and evaluation systems that will help overcome the vicious circle of poverty, macroeconomic shocks related, for instance, to energy prices and dominance of primary goods for export. After providing the general overview of the situation in the continent, Dr. Oti-Boateng presented the main objective of the workshop which was to create a critical mass of experts in STI policy in Eastern Africa to enhance the application and development of STI for sustainable development. She also detailed the specific objectives as well as the strategies and activities to be undertaken during the two-day workshop. These strategies included among others, the assessment of policy environment for the application and development of STI; a methodological framework for STI policy training and monitoring; and training for STI policy formulation, monitoring and evaluation. She further mentioned the expected outputs and outcomes from the workshop including; capacity-building of the participants; capacity in data collection and analysis; capacity in development of road maps for national STI policy implementation; review of national STI policies for East African countries; development of STI indicators; and development of national STI policies framework.

3.2 Introductory Concepts of Science, Technology and Innovation by Prof. Kevin Urama, Executive Director, ATPS

Prof. Urama's presentation covered three main areas namely; the definition of science, technology and innovation; an analysis of how those concepts can interact in a policy making process; and a discussion on the implications for STI Policy formulation and Policy Implementation. He provided a comprehensive definition of each concept. According to him, science is defined as an objective explanation of phenomena which requires observation, identification, description and experimental investigation. Technology is referred to as applied sciences and technical methods; while Innovation is defined as any new knowledge introduced into and utilized in an economic or social activity. He also noted that though those concepts are distinct from one another, they are closely intertwined for the formulation of science and technology policies. In this context, he stressed the need to consider National Innovation Systems (NIS) which enables interactions between actors from private and public sectors for the production, diffusion and use of new, and economically useful, knowledge and technologies. He noted that innovation systems are different from

one country to another and therefore, a frame of innovation systems should be set up according to national circumstances. The framework conditions detailed by Prof. Urama included basic educational systems, communication infrastructure, financial institutions, legislative and macro-economic settings, market accessibility and a competitive environment.

3.3 The State of STI Environment in Africa: Imperatives for Successful Policy Development by Prof. Kevin Urama, ATPS

This presentation by Prof. Urama focused essentially on the mapping of Africa's STI environment, the role of STI in sustainable development and poverty alleviation and how to envisage policy development in such a context. Prof. Urama described the state of STI environment in Africa using statistical data and variables which show that STI capabilities in Africa are still very weak especially regarding the level of investment in research and development, the number of scientists and patents, the educational levels and the scientific productivity as well. He noted that there is need to recognize the role of STI for the development of African countries. He highlighted this role; for example in ICT capacity building, emphasizing that ICTs can be used in all sectors of the economy to realize development objectives. He further noted that STI may have significant influence on employment creation if African governments adopt appropriate STI and industrial policies that balance process innovation inputs (which tend to be labour-saving) with produce innovation inputs (which tend to be labour creating); STI may also have positive effects on people's access to services.

He further indicated that a number of barriers may hinder effective policy making in East Africa. These include for instance, public perception of STI in Africa, technology transfer vs. technology sharing, the lack of funding and priority setting, the lack of accurate data and methods of collection, the lack of coordination of national systems of innovation and a poor collaboration amongst stakeholders. He also discussed potential policy implications for policy makers which include creating enabling policy environment capacity building in STI, enhancing collaboration through a National System of Innovation (NSI), making knowledge systems reforms, supporting national awareness programs.

He concluded with the recommendations that African countries should take urgent action to improve their STI capacity assessment/capacity development, engage all key actors in policy and investment priority setting, improve their STI infrastructure, strengthen their STI policy research and training institutions and provide more funding for STI policy formulation and implementation.

3.4 The UNESCO Mapping Tool presented by Dr. Peggy Oti-Boateng

In her brief presentation on the UNESCO mapping tool for STI policy formulation and implementation, Dr. Peggy enumerated six areas used for developing the STI policy framework. These include:

- Macro-Economic Information
- STI and Research and Development
- STI and Education
- STI Regulation
- STI Organisation and Administration
- Cooperation and Partnership for R&D and Technology Transfer

She observed that the variables should be used by the respective countries in framing their STI policy making process. She further explained how it works and the multitude of information required from each data category.

Recap of the Previous Day's Activities

The second day's activities started with a summary of the main topics presented during the first day of the workshop. Participants provided their general understanding on the previous day's presentations and discussions. Their views were summarized as follows:

- There is a difference between the concepts of Science; Technology and Innovation. Whilst Science is about the knowledge and the theoretical ways of understanding it, Technology refers to the practical tools; techniques or methods needed for any scientific purpose. The concept of Innovation broadly includes ideas that are successfully applied or commercialized.
- There is a substantial need for more linkages between policy makers and scientists in order to fill the gaps that limit knowledge dissemination and outreach.
- The concept of "*Quadruple Helix*" is new to some of the delegates but it is really interesting and innovative in terms of enhancing the collaboration between stakeholders. It may help facilitate policy development.
- It was recognized that there is need to market research results and this is crucial in developing effective mapping tools. This however, should be based on individual country needs and priorities.

- There is a definite need for appropriate data management for the purposes of informing policy and practice.
- There is absolute need to regularly improve the capacity of scientists and policymakers in STI policy formulation and implementation in order to realize sustainable development.

3.5 Overview of necessary tools & key steps to ensure a successful STI Policy formulation by Prof. Kevin Urama and Dr. Michele Mboo, ATPS

Prof. Urama started by providing some baseline information about policy making. He noted that the framework of action for successful policy formulation entail three key steps. *The first step* is about the knowledge each scientist should have about specific elements. This mainly involve the country's political context (e.g. who are the policy makers and their area of influence); the available evidence needed to come up with balanced narratives; the identification of key actors and their networks and the need to consider external influences (e.g. international actors; their policies and aid priorities) in policy development. *The second step* is concerned with clear actions to be taken and options that can work for policy making. *The last step* involves the effective ways to implement the actions and practical solutions. Prof Urama also presented selected tools (research tools, policy mapping and context assessment tools, communication tools, knowledge management tools, policy influence mapping tools, etc.) and discussed some key approaches for policy formulation. These were essentially:

- Merilee Grindle's approach;
- Stakeholder Analysis with its strategies, scenario and participatory components;
- RAPID approach
- SWOT analysis;
- Force Field Analysis

He also mentioned some other approaches such as Outcome Mapping (e.g. identification of performance targets, key policy indicators) and Social Network Analysis that can serve the same purposes. He concluded with a case study example on how to become policy entrepreneurs and write policy papers. Prof. Urama stressed the need to manage and communicate the knowledge gathered throughout the policy making process.

Participatory questions, answers and comments session

- One participant raised the issue of effective communication. He argued that not everyone can communicate and even those who can (the journalists for instance); do not necessarily have the scientific background. He further inquired on how best

journalists can report scientific information? A practical challenge ensued when Dr. Peggy Oti-Boateng asked a journalist present in the workshop her understanding on the presentations made by Prof. Urama and how best she could communicate the same to the public. The result showed that the journalist had little understanding of what was presented and could only grab but a few things. This means that for science to be communicated effectively, it must take into consideration the target audience and present the same message in the manner and form the particular audience will understand and apply or use the message effectively.

- Another delegate highlighted the need to consider local languages as a way of disseminating scientific evidence. He sought for considerations in preparing scientific documents such as policy briefs in local dialects (an example from Uganda was given).

Based on the presentations already made, the participants recommended as follows:

- There is an urgent need to bring together scientists and journalists who understand science basics;
- Scientists should commit themselves and be more involved in writing more press releases and policy briefs for public audience;
- Scientists should also continue to engage journalists in knowledge dissemination on STI related issues;
- There is a need to find out how best the knowledge acquired during workshops can be packaged and disseminated for public understanding;
- Social media can be increasingly used as a tool in marketing scientific knowledge.

3.6 Institutional Arrangements necessary for Successful STI Policymaking: Key Issues to Consider by Dr. Nicholas Ozor, ATPS

Dr. Nicholas Ozor at the beginning of his presentation asked the participants what they understood by the term 'institution'. Delegates gave various definitions and explanations which he summed up to mean 'a collection of rules, regulations and policies which enable an organisation to function effectively'. Dr. Ozor emphasized the need for a strong institutional arrangement in Africa pointing out that what Africa needs is strong institutions and not strong men (Obama, 2009).

Dr Ozor further noted that for a policy to thrive there has to be structures, mechanisms of social order and rules that govern the general behaviour of people in an organisation. He identified the different forms of Institutional Arrangements (IA) used in organisations to include; bilateral or multilateral agreements; the use of instruments such as line

management structures, organisational frameworks (organograms); and policy documents. These can be used to realize different objectives in an organisation.

According to Dr. Ozor, IAs are required for effective formulation and implementation of STI programs and policies; in communicating STI issues; and in managing human resources in an organization. He further noted that institutional structures are strong instruments used to tackle STI issues proactively especially with regards to human and material resources in STI sectors including; industry, R&D, private sector, infrastructure, education, NGOs, etc. The role of each stakeholder in the policymaking process is important and should be recognized at each level of policymaking. Dr. Ozor also stressed on the relevance of National Systems of Innovation (NSI) in driving successful policymaking in African countries. He argued that NSI as an institutional driver can be efficient in reducing the complexity of policymaking. As the stakeholders get involved and interact among themselves, it will be easier to avoid duplication of information in NSI. Finally, he indicated that IAs are key elements through which organisations can power their policymaking and therefore strongly encourage African countries to have NIS platforms to coordinate their activities.

Participatory questions, answers and comments session

- A delegate from Uganda asked for clarification on the role of donors as stakeholders in the policymaking process. He also wanted to know if there is any need for specific institutions to be charged with policy implementation. Responding to the above questions, Dr. Ozor clarified that donors (especially external donors) have a good role to play in policy formulation and implementation process through their facilitative roles but warned that they (external donors) should not drive the process. He also agreed that specific institutions should champion the policymaking process. Agencies and key ministries should take the lead in the implementation of government decisions. However, they have to work hand in hand with other ministries to implement STI programs and policies.
- Another participant raised the issue of Intellectual Property Rights (IPRs). Participants agreed that there is need for increasing people's awareness on IPR especially on the protection of innovative and promising ideas. Countries should provide platforms to protect knowledge, marketable ideas or products.

3.7 Public Engagement in STI Policy Formulation & Policy Implementation by Dr. Maurice Bolo, ATPS

Dr. Maurice Bolo's presentation started with a discussion on preliminary issues regarding:

- What is a policy (regulation, guiding principles, statements by government or institutions, etc.)?
- What makes a policy public (regulation of the society, purposes to meet public needs and interests)?
- Who is the public (citizen in a given society, homogeneous or heterogeneous groups of peoples)?
- What does Public Engagement mean?
- Why is Public participation so important?

Dr. Bolo explained that policymaking was a purposive cause of action from a legitimate authority and stressed that Public participation does not necessarily involve a homogeneous group of individuals. Dr. Bolo then highlighted the following issues that are necessary for public engagement in STI Policy formulation and policy implementation:

- Technology is the driver of societal change. However, because these changes are so rapid, technology assessments are essential to identify the direct effects of new STI and shape the technological development of the societies;
- Engaging the society in STI development brings in a challenge as most people are ignorant of STI and sometimes do not trust regulatory authorities;
- The public should not be ignored in STI policy formulation and implementation because they are custodians of the traditional knowledge and values;
- Public Engagement requires participatory tools and processes that consider stakeholder involvement at each step of policy formulation and implementation.

Dr. Bolo further described various steps for engaging the public in STI policy formulation and policy implementation. These include:

- The context and rationale for public participation;
- The specification of key steps in the policymaking process and the schedule to be prepared for this purpose;
- The identification of institutional constraints and special circumstances;
- The nature and level of each stakeholder involvement in the process. At this point, Dr. Bolo addressed the issue of anticipating controversies and the need for developing Issue Management Plan (IMP) ;
- The selection of public participation techniques to be used. Such techniques may include Information-providing techniques (e.g. technical reports, news releases), Information-gathering techniques (e.g. focus groups, surveys) and Interaction techniques (e.g. workshops, television debates)

Participatory questions, answers and comments session

- A delegate from Kenya commented on the clarity and the usefulness of the IMP in policy formulation and implementation;
- Regarding the role of communities as key stakeholders in the policymaking process, Dr. Peggy Oti-Boateng noted that if the civil society is to include the communities, then institutions such as chieftaincy and council of elders should be equally critical to the formulation and implementation of policies. She also raised the issue that rules are important and that an effective policy implementation calls for a Participatory Monitoring Evaluation (PME) in addition to the IMP. This would help in documenting unexpected outcomes.

Brainstorming session on Good Practices for Public Engagement in STI Policymaking and Implementation

Case study: Country X recently announced plans to harness nuclear power for its energy and developmental needs. This announcement has raised a mixed reaction amongst the citizens. The Ministry of Science and Technology has been mandated to develop a public engagement program to seek public input into this debate. Participants were required to:

- Identify key issues and stakeholders
- Assess the level of controversy
- Develop an issue management plan/strategy

Table 1 presents the summary of the brainstorming session on the case study, referred to above, by the participants. It includes their views on key issues and who the stakeholders are, the different sources of controversy and how to deal with them.

Table 1: Participants' opinions on the case study X

Requirements	Participants' views	
1. Identifying key issues and stakeholders	Issues	Stakeholders
	Environmental safety	Government, regional neighbourhood, environmental institutions, etc.
	Project benefits	Public sector (ministry of energy, regulatory authorities), universities and other research institutions
	Sustainability	Government; civil society
	Available capacity	Researchers, R&D, regulators
	Sources of financing	Donors, development banks and other financial sources
	Alternative sources of energy	Private sector, environmentalists
2. Identifying sources of controversy	- Environmental safety and security	
	- Project sustainability	
	- The role and influence of donors	
3. Developing an issue management	Issues	Management plan/strategies
	Safety and security	<ul style="list-style-type: none"> - accelerated training to cover the lack of capacity - budget or any allocation or resources needed for training capacity
	Sustainability	<ul style="list-style-type: none"> - sustainable resources are needed - where to get raw materials to implement the projects
Financing	<ul style="list-style-type: none"> - identify the level of influence of the donors - necessary political will to be achieved 	

Key challenges and opportunities for effective STI policymaking and implementation in Africa

Delegates further deliberated on the key challenges and opportunities for effective STI policymaking and implementation in their respective countries. This was achieved through country case studies using the UNESCO STI mapping questionnaire already developed. Delegates provided data on their respective country's macroeconomic situation, STI and R&D, STI and Education, STI policy and regulation, STI organisation and administration as well as cooperation and partnership for R&D.

While delegates from Uganda had almost completed the questionnaire, delegates from Kenya were urged to improve the quality of their data. Delegates from Rwanda pointed out the difficulty of having access to most of the data. They asked for more time so that they can provide accurate information.

3.8 Participatory Monitoring and Evaluation – The Key to Effective Policy Implementation by Dr. Nicholas Ozor and Mr. Ernest Acheampong, ATPS

Dr. Ozor presented an overview of the concept of Participatory Monitoring and Evaluation (PM&E) and how it can be applied to achieve successful policy formulation and policymaking for sustainable African development. After discussing the concepts of *monitoring* (tracking process) and *evaluation* (assessing the performance) with the participants, Dr. Ozor presented the historical process behind PM&E development. He noted that some of the top-down approaches have hardly contributed to policymaking because of the non-involvement of all stakeholders. He therefore described various approaches from which PM&E can be drawn. These included the Participatory Action Research; Rapid Rural Appraisal or the Participatory Rural Appraisal. The purpose of PM&E was clearly defined to include elements of project accountability, public accountability of local and national government programmes, and negotiations between stakeholders or local people empowerment. Principles guiding PM&E as well as the different stages of it were also presented by Dr. Ozor. He noted that PM&E should be outcome-based and should focus on how the local communities, partners and other stakeholders achieve or do not achieve the outcomes. He also stressed on the importance of using the most relevant indicators (key performance indicators for STI policymaking) defined at local/national levels but which can be useful for different audiences.

Participatory questions, answers and comments session

- One participant raised the issue of the optimal size of participation that is necessary
- Another participant asked how best countries can improve their monitoring and performance management framework

Addressing these questions, Dr. Ozor noted that there is no one-size-fits-all solution to the style and practice but remarked that on an ideal scale, all the relevant stakeholders from both the demand and supply sides need to participate in monitoring and evaluation programmes and policies in order to achieve effective formulation and implementation. Participatory process, he further noted, enables all stakeholders to claim ownership of the programmes and policies and enhance its implementation. He pointed out that the National Systems of Innovation approach is cost effective and urged countries to adopt it as it is on its own participation.

General Discussion/Feedback from Participants

The general remark (feedback from participants) was that the workshop was very educative, informative, and fruitful. However, participants noted that future workshops should last for at least 3-5 days to enable effective delivery of information (avoiding information overload) within the period. This will also enable delegates to effectively share their respective country's experiences on STI policy formulation and implementation for sustainable African development.

Closing Remarks

In conclusion, the representative of UNESCO and Programme Coordinator STI, Dr. Peggy Oti-Boateng thanked delegates for participating in the workshop and urged them to apply what they had learnt during the workshop in order to strengthen the STI policy formulation and implementation in their respective countries. She specifically requested them to ensure that they update the UNESCO STI Mapping Questionnaire with the information required for further analysis and comparison. She then thanked ATPS for facilitating the training programme and for the in-depth and constructive information provided to participants.

At the end, Prof. Kevin Urama issued out certificates to all the delegates for their participation under the watchful eyes of Dr. Peggy Oti-Boateng. Dr. Peggy then formally closed the workshop.

ANNEX I: WORKSHOP PROGRAMME

Day 1 – 31 October 2011

Morning – Opening Ceremony

8.30 – 9.00am Registration

9.00 - 9.10am Chairman's Opening Remarks

9.10 - 9.20am Welcome by Bjorn Meru, National Council for Science and Technology, Kenya

9.20 – 9.40am Statement by UNESCO – Director, UNESCO-ROSTA, Represented by Dr Abou Amani, Senior Programme Specialist, Hydrology, UNESCO, Nairobi

9.40 – 9.45am Overview of the Workshop - Dr Peggy Oti-Boateng, Senior Programme Specialist, Science and Technology, UNESCO, Nairobi, Kenya

9.45 – 9.50am Chairman's Closing Remarks

9.50 - 10.00am Group Photograph, Tea, Coffee Break

Technical Session 1 (Morning/Afternoon)

10.00 – 10.30am Introductory Concepts of Science, Technology and Innovation – Prof. Kevin Urama, Executive Director, ATPS

10.30 – 11.00am The State of STI Environment in Africa: Imperatives for Successful Policy Development - Prof. Kevin Chika Urama, Executive Director, ATPS

11.00 – 11.30am Mapping as Capacity Assessment Tool - Charlotte Wonani, Department of Policy Development, University of Zambia

11.30 - 12.30pm General Discussion

12.30 – 1.30pm Lunch

Technical Session 2 (Afternoon)

1.30 – 2.00pm The UNESCO Mapping Tool (Questionnaire) - Dr Peggy Oti-Boateng, Senior Programme Specialist, Science and Technology, UNESCO, Nairobi, Kenya

2.30 - 4.00 pm Review of the STI Policy Survey Instrument – Country Experiences: - Rwanda, Uganda, Kenya, Zambia

4.00 - 5.00 pm General Discussion

Day 2 - 01 November 2011

9.00 – 9.45am Overview of necessary tools & key steps to ensure a successful STI Policy formulation – Prof. Kevin Urama, Executive Director, ATPS and Dr. Michelle Mboo, Post-Doctoral Researcher, ATPS

10.30 – 10:35am Institutional Arrangements for Successful STI Policymaking: Key Issues to Consider – Dr. Nicholas Ozor, Senior Research Officer, ATPS

10.30 – 11.00am General Discussion

11.00 – 11.30am Tea and Coffee Break

Technical Session 4 (Morning/Afternoon)

11.30 – 12.15pm Public Engagement in STI Policy Formulation & Policy Implementation – Dr. Maurice Bolo, Research Officer, ATPS

12.15 – 1.00pm A Brain Storming Sessions on Good Practices for Public Engagement in STI Policymaking & Policy implementation: – Facilitator – Dr. Maurice Bolo, Post-Doctoral Researcher, ATPS

1.00 – 1.30pm General Discussion

1.30 – 2.30pm Lunch

Technical Working Session 5 (Afternoon): Delegates to Break into 3 Groups for Practical Participatory Exercises

2.30 – 3.30pm What are the key challenges and opportunities for effective STI policymaking and implementation in Africa?

3.30 – 4.00pm Tea/Coffee break

4.00 - 4.30pm Participatory Monitoring and Evaluation – The Key to Effective Policy Implementation - Dr. Nicholas Ozor, Senior Research Officer, ATPS and Mr. Ernest Acheampong, Research Officer, ATPS

4.30 – 5.00pm General Discussion

Closing Ceremony (Morning/ Afternoon)

5.00 – 5.30pm Feedback from Participants

5.30 – 6.00pm Closing Remarks from Resource Persons / Dr Peggy Oti-Boateng, Senior Programme Specialist, Science and Technology, UNESCO, Nairobi, Kenya

ANNEX II: PARTICIPANT'S LIST

UNESCO STI TRAINING 1/11/11 OF TRAINERS WORKSHOP				
Attendance LIST EAST AFRICA.				
S/N	Name	Institution	Email	Sign
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