

## **Synopsis for Panel Discussion 3 – Policy Recommendations from the African Development Perspectives Yearbook and Policy Reforms in Africa**

Any Science, Technology and Innovation (STI) policy is aimed at promoting strong national institutional capabilities which will permit to absorb, adapt, develop and utilize knowledge and technology for developing the knowledge-based economy in any given State, with a focus on a pre-defined set of national priorities. Such policy shall also ensure a high level of diversification in the knowledge production and technology utilization processes. The production of modern manufactured goods and related services is the essence of the Knowledge-driven or the Innovation Economy, and evidence-based research indicates that the backbone of developed knowledge-based economies is the existing diversified manufacturing capabilities. Any STI policy should hence comprise of all the necessary identified measures for creating, funding and mobilizing private or public scientific and technological resources aiming at fostering and orienting knowledge producing activities towards strengthening technological innovation through the build-up of robust National Innovation Systems (NIS). STI policies could be sub-divided into:

- Policy for science, which is necessary to promote “progress of science” and associated scientific activities as such, and hence strengthen the infrastructure of science and technology;
- Science in policy that includes measures for harnessing the results of science for development and utilizing scientific and technological knowledge towards technological innovation;
- Innovation policy that includes those measures aimed at promoting technological innovation and produces economic activities that usually lead to opening new markets with new and innovative products.

Science, Technology and Innovation (STI) policies are hence closely linked to the political and socio-economic evolution of any state, and which enables the state to forge a set of institutions and processes to cultivate scientific and technological endeavor that will contribute to its national development. Today, STI policies and initiatives are even integrated in the activities framework of economic international organizations, as knowledge and research are becoming more pivotal to developing successful diversified economic activities.

Since its creation in 1945 UNESCO was mandated with the development of scientific knowledge and its utilization to spur economic transformation in developing countries.

Through the application of scientific knowledge and technology transfer from the developed to the developing countries, Member States began the development of their science and technology potential and devising strong policy as the important priority for building their welfare. There are many lessons learned from this long term engagement, but the following three are the main recommendations to ensure that STI policies will foster the necessary framework for STI to live to their full scale and to be truly transformational in developing countries:

- a. STI activities need to be connected to society as a whole, and to translate innovative and creative problem solving approaches from global to national and local levels. To successfully achieve the above, these countries need to embrace best proven practices associated with establishing networks of national and regional champions of STI, regional champions from business and from academia, from Government and the political arena and from society at large. This is necessary to bring about the aspired positive change towards achieving sustainable development;
- b. The people's knowledge, talent and skills need to be developed and strengthened with a particular focus on their mastering of science, technology, engineering and mathematics (STEM). It is hence critical to ensure adequate investments in STEM education at all levels.
- c. The development gap will need to be closed by closing the existing STI investment gap. Ambitious national minimum target investments for STI will have to be setup using innovative out-of-the-box financial models mostly dependent on national resources;

In a globalized knowledge-based economy, innovation is among the most critical drivers of advancement in all spheres including social, economic, and environmental. Harnessing adequate technologies to produce quality modern goods and services of higher added value is the essence of an "innovation and knowledge based economy". Developing countries should hence be committed to creating the required critical mass of experts and knowledge workers capable of developing and implementing nationwide new and innovative technological programs that are aligned with national developmental priorities. With the education system in all its forms being central in forming the required "critical mass", galvanizing all these different education sectors, namely education, higher education, vocational training and education, technology development, science and innovation, for fostering an innovation and techno-preneurship culture in these countries, becomes a must. An integrated approach clustering all the different education sectors into what could be called as the "Knowledge-Technology-Innovation" Nexus would clearly articulate the practical benefits that an interdependent approach to these different education sectors can offer, such as facilitating integrated planning and decision-making, informing the efficient allocation of resources between competing needs, and highlighting cross-sectional interactions that produce more synergy levels between these different actors.

Such approach shall in turn mandate the creation of a national higher council for Sustainable Development, to be led by the Head of State or Prime Minister, to ensure that policies related to all these circles would interact more favorably and achieve the innovation economy sought.

Within the African Development Perspectives Yearbook, Volume 20, a chronicle review of UNESCO engagement with its African Member States in the STI sphere will be presented in terms of the achievements made within the main milestones and the impact of these achievements in re-shaping the STI road map in Africa. A number of country case studies from North Africa namely: Algeria, Egypt, Mauritania and Sudan, will also be presented and analyzed to demonstrate examples of those achievements as well as lessons learned in developing STI agendas that are effective.

Volume 20 of the Yearbook will most importantly include the role of STI for inclusive growth in developing countries and the importance of including the basic six components as part of any a national socio-economic transformation programme namely: STI for Policy, Policy for STI; STI and the Private Sector; International Collaboration and STI; and STI and Governance. The subject of “STI Policies for Inclusive Growth in Africa” will be dealt with through answering two important questions: firstly, of what are the reasons STI policies are generally ineffective in developing countries? And what is fundamentally important in the formulation of STI Agendas for successful structural transformation in Africa? The volume will also bring forward a number of innovative recommendations for policy reforms in African countries.