**Nanotechnology and the Achievement of the Sustainable Development Goals in Africa**

1. **Introduction**

Over the years, the science and applications of nanotechnology have developed at a faster pace across various disciplines and sectors. The technology is increasingly found in many commercial products from mobile phones and cosmetics to pharmaceutical and robotics. The technology holds great promise for the development of new treatments for a wide range of diseases. It is increasingly recognized as a platform technology that could play an important role in the efforts of African countries to achieve the targets of the Sustainable Development Goals (SDGs) and realize the Aspirations of the African Union’s Agenda 2063.

The African Union recognizes nanotechnology as a compelling imperative and identifies nanotechnology as one of six priority areas in its Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024). Recognizing the promise of nanotechnology for their development, many countries have set up nanotechnology centres to undertake research in various areas of possible application. However, despite its potential, very few African countries have articulated a national nanotechnology policy. This lack of policy urgency has considerably slowed the development and application of nanotechnology on the continent.

For instance, the launch of the United States National Nanotechnology Initiative (NNI)[[1]](#footnote-1) in 2000, is credited with coordinating research and development (R&D) funding, providing national direction and advancing nanotechnology development[[2]](#footnote-2). The NNI was informed by the Interagency Working Group on Nanotechnology which set out the 10-year vision[[3]](#footnote-3). Most developed countries and a number of developing countries have since developed their own national strategies. For example, China launched its national strategy in nanotechnology in 2001 while the European Union adopted its strategy on nanotechnology in 2004 following similar assessments and ambitions.

With the preceding in view, the United Nations Economic Commission for Africa (ECA) is organizing a three-day experts group meeting (EGM) on “**Nanotechnology and the Achievement of the Sustainable Development Goals in Africa**” from 13 and 14 November 2018. This is part of ECA’s ongoing efforts to support African countries to harness science, technology and innovation to achieve inclusive development. The EGM will address the role of nanotechnology towards meeting the African Union Agenda 2063 and the United Nations’ 2030 Agenda for Sustainable Development. Both Agendas recognize technology as one of the means of implementation alongside finance, capacity building and partnership. For African countries, successful deployment of nanotechnology to meet industrial, economic and social development may also involve capacity building, international partnerships at the regional and global level, financial support and transfer of technology.

The EGM is one of several efforts that have focussed on emerging platform technologies that promise to impact various facets of society in the near future. In this regard, this work will build on the work undertaken in fields such as information and communication technologies (ICT) and biotechnology as well as ‘blockchain technologies’ and ‘artificial intelligence’. Others include ECA’s multi-year initiatives termed ‘Biomedical Engineering for Improved Healthcare Outcomes’.

The EGM will address the economic, social and regulatory issues arising from nanotechnology as distinct from scientific issues, while recognizing the important role of the science in developing (regulatory) policies, informing the economic and social arguments. It is hoped that this EGM will help inform the efforts of member States to develop national policies and strategies to harness nanotechnology. This EGM is designed to stimulate discussion and generate new ideas at how best African countries can deploy, manage and harness nanotechnology to meet their development aspiration.

1. **Objectives of the Expert Group Meeting**

The overall objective of the Expert Group Meeting is to identify the current trends and the opportunities that nanotechnology realistically offers African countries and to explore the scope for regional and national collaboration and cooperation to bridge the nanotechnology skills, research and infrastructure gaps to meet the Sustainable Development Goals. Specifically, the Expert Group Meeting will:

1. Assess the current state of nanotechnology in Africa as well as provide an overview of nanotechnology development globally;
2. Explore opportunities to enable innovation using nanaotechnology to develop safe, effective products that could make significant impacts in achieving the 2030 Agenda and national aspirations;
3. Explore strategies and other arrangements that African countries can use to harness global and regional knowledge in nanotechnology to drive innovation in Africa;
4. Identify the possibilities of regional blocks in building research infrastructures and industrial capacities in nanotechnology in African countries;
5. Discuss the effectiveness of regulatory approaches, if any, to nanotechnology in African countries to meet the challenges that could arise from the use of products containing nanomaterials;
6. Assess the potential social and regulatory challenges that nanotechnology development present to African countries; and
7. Provide policy recommendations for the leveraging of international cooperation and collaboration to develop Africa’s scientific, technological and industrial performance in nanotechnology to achieve the 2030 Agenda.
8. **Expected outcomes**

The expected results include the following:

* Research and analytical report on nanotechnology in Africa and the role of collaboration to meet the Sustainable Development Goals;
* Policy briefs and working papers;
* Input into the reports of the African Union on Emerging Technologies, Specialized Technical Committee on Education, Science and Technology as well as ECA Senior Expert Dialogues and the UN Technology Facilitation Mechanism.

1. **Expected impact**

The expected impacts are: an enhanced understanding on how Africa can harness collaborative arrangements to build nanotechnology capacity for research, industry and regulation; and improved national policies and strategies for nanotechnology development.

1. **Partnerships**

The Expert Group Meeting will be organized in collaboration with the African Union Commission (in particular, its Department of Human Resources, Science and Technology).

1. **Participation**

It is expected that about approximately 50 experts from Governments, the private sector, financial institutions, non-governmental organizations (NGOs) and research institutions from within and outside Africa will attend the EGM. Participation is by invitation only. Invitations will be extended to African Ministries responsible for Science, Technology and Innovation (Scientific Research) and Ministries responsible for Higher Education to nominate senior policy experts to attend and participate. Invitations will also be extended to heads of major African research centres, STI institutions, African Union departments, NEPAD, regional economic communities, selected academic institutions, agencies within the United Nations system that have a pertinent mandate, multilateral and bilateral development agencies; and non-governmental organizations and civil society organizations, and a selected number of experts. ECA will provide full sponsorship to about 25 experts nominated by African governments. Participants will be expected to engage in a robust, wide-ranging discussion of the theme and issues identified.

1. **Documentation and language**

Documents, materials and publications relevant to the theme will be made available on the website created for the me. Expert papers will be made available in the language in which they are written. The working language of the meeting is English.

1. **Date and venue**

The Expert Group Meeting will be held on **November 2018** at the United Nations Conference Centre, Addis Ababa.

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1. <https://www.nano.gov> [↑](#footnote-ref-1)
2. # [A Matter of Size: Triennial Review of the National Nanotechnology Initiative](https://www.nap.edu/catalog/11752/a-matter-of-size-triennial-review-of-the-national-nanotechnology) (2006), see Chapter 1 <https://www.nap.edu/read/11752/chapter/>

   [↑](#footnote-ref-2)
3. # **Williams**, R.S., and **Alivisatos**, P. (Eds.) 2000 Nanotechnology Research Directions: IWGN Workshop Report; Vision for Nanotechnology in the Next Decade, Springer Netherlands

   [↑](#footnote-ref-3)