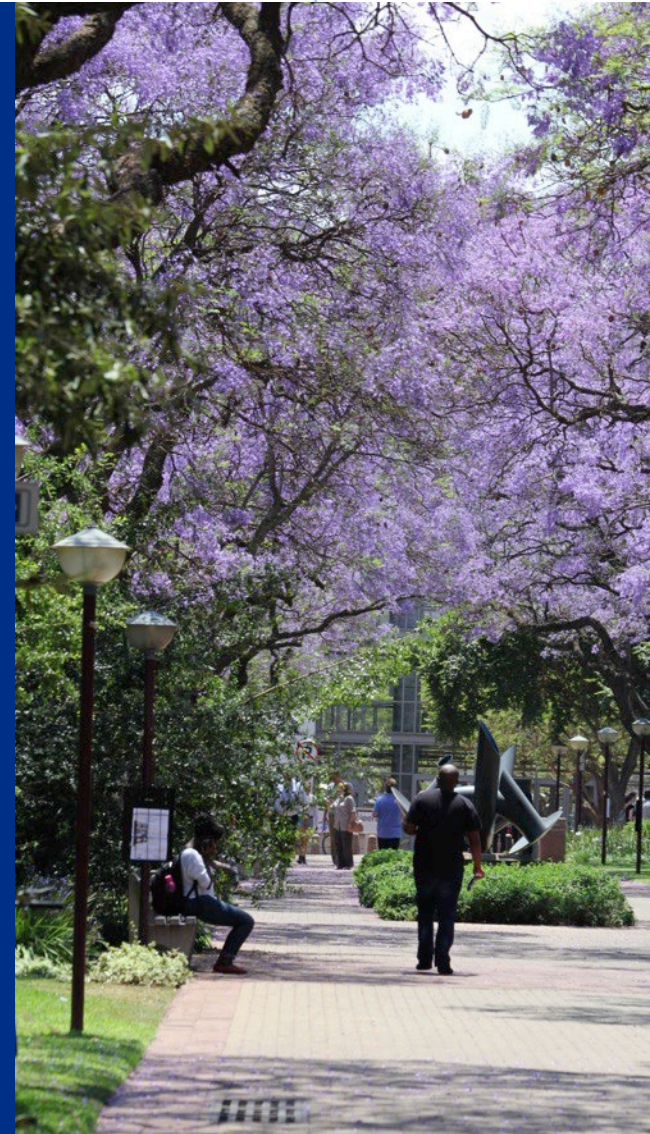




UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Technology Assessment and Foresight for Public Policy in Africa

Prof. John Ouma Mugabe
Presentation at CSTD@UNCTAD,
Geneva 08.04.2025



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Graduate School of Technology Management

Outline

1. Utility of technology assessment (TA) and technology foresight (TF)
2. Why surge of interest in TA and TF in Africa
3. Illustrative cases of TA and TF exercises in Africa
4. Challenges of institutionalizing TA and TF in Africa
5. Opportunities of institutionalizing TA and TF in Africa
6. TA and TF capacity-building



Utility of TA and TF

1. Both TA and TF are critical STI policy tools, useful for gathering evidence (data) and perspectives to inform research and innovation priority setting and choice of specific technologies.
2. TA and TF enable anticipatory governance of new and emerging technologies, and inform decisions to maximize benefits and minimize any risks of technology.
3. To be effective as STI policy tools, TA and TF should be conducted through or as participatory processes. This requires political cultures that encourage openness, transparency and inclusiveness in public policy processes.
4. In most cases (countries), TA and TF are conducted as separate exercises for different purposes. However, both can be integrated into different stages of a STI policy process in complementary ways.



Why surge of interest in TA and TF in Africa?

- Increasing recognition of the role of STI policy in Africa. Between 2010 and 2025 at least 20 African countries have reviewed old S&T policies and formulated new STI policy frameworks. Several countries (e.g. Namibia and Seychelles) have used TA and TF like tools (e.g. horizon scanning, SWOT analysis and Delph) in STI policy review and design processes.
- Growing attention to long-term development planning AU Agenda 2063 and national visions e.g. Vision 2030 (Kenya and South Africa). Increasing efforts to align research and innovation policy and plans to long-term development strategies.... Examples are STISA-2034, South Africa's Decadal Plan for 2019 White Paper on STI, Namibia NSTIP 2020 and 10- Year STI Action Plan.



Why surge of interest in TA and TF in Africa? 2

- Governing rapid scientific and technological advances requires anticipatory systemic policy measures informed by evidence gathered through TA and TF. STISA 2034 explicitly recognizes that governance of technology matters.
- ‘Mature’ TA and TF tools are increasingly becoming accessible and their use spreading through peer policy learning (Seychelles-South Africa-Zambia on TA, and South Africa-Russia on TF, and South Africa-Finland on TF, Kenya(KeNIA)-UK (FCDO)).
- Demand for accountability for STI policy actions.



Illustrative cases of TA and TF exercises in Africa

- Continental TA on biotechnology an attempt by African Union (AU) and NEPAD 2005-2007, produced 'Freedom To Innovation'. High-Level Panel on Modern Biotechnology.
- Recent UNCTAD supported TAs in Seychelles, South Africa and Zambia. No African country has institutionalized TA yet.
- Only three countries (Botswana, Kenya and South Africa) have had organized TF exercises. Botswana supported by UNCTAD 2022-2023, Kenya supported by UK FDCO in 2023/2024 and South Africa has conducted three between 1999 and 2020. Botswana's STI foresight combined with STI Policy Review.



Illustrative cases of TA and TF exercises in Africa (2)

- Kenya's KeNIA (Kenya National Innovation Agency) conducted the TF to inform the formulation of a Ten-year National Innovation Strategy and KeNIA's own strategic plan.
- South Africa's three TF exercises informed Decadal STI plans. Two TF exercises were coordinated by the National Advisory Council on Innovation (NACI) with technical support from Russian experts. One TF exercise was conducted with technical support from Finland (Bilateral STI cooperation).



Challenges of using and institutionalizing TA and TF in Africa

- Relatively *low TA and TF literacy*. Though there is academic research on and for TA and TF in some African universities, it is not explicitly linked to STI policy and public policy processes in general.
- Many countries have foresight expertise and accumulated experiences locked in national development planning commissions or ministries. However, *the expertise is not harnessed and used by departments/ministries responsible for STI policy and planning, because of institutional silos and weak articulation*.
- There is relatively *weak legislative and political authorization of TA and TF as well as STI policy in general*.



Challenges of institutionalizing TA and TF in Africa (2)

- No dedicated budgets for STI policy formulation and implementation. STI policy organized around short-term projects and/or events, lacking long-term horizons.
- STI policy research and analysis still in infancy. Analysis of and for STI policy relatively weak with very few institutions and individuals engaged.



Opportunities of institutionalizing TA and TF in Africa

- STISA-2034 offers an opportunity of building *a continental platform for peer or mutual learning and capacity building* for both TA and TF.
- Potential international support as partners e.g. UNCTAD, IDRC, FCDO...starting to show interest in TA and TF.
- Emerging TA and TF networking e.g. the Global Technology Assessment Network and the proposed African Network for TA and TF.
- Improvements in digital infrastructures and access to related technologies make it relatively easy to mobilize for combined participatory TA and TF.



Opportunities of institutionalizing TA and TF in Africa

- Growing number of countries with agencies dedicated to STI policy and planning. Demand for new policy tools also growing as some countries review and/or evaluate previous STI policies.
- Countries such as Namibia and South Africa planning to institutionalize STI foresight, with likely effect of peer influence in SADC and on the continent.



TA and TF capacity-building

- Socialize TA and TF using media.
- Develop a body of guidelines on and best practices of TA and TF design and execution for STI policy.
- Develop and deliver executive workshops/training on TA and TF for officials in governments and members of legislatures.
- Operationalize the African Network for TA and TF to mobilize existing scattered expertise and knowledge resources.
- Encourage and support African countries and institutions to participate in global TA and TF forums or platforms (e.g. CSTD and the Global TA Network).

