Smart specialisation in Sub-Saharan Africa: opportunities and challenges[1]

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Initially focused on the role of Science and Technology (S&T) in the socio-economic transformation of African countries, national and regional bodies are now enlarging their vision to emphasize the role of Innovation in achieving the Sustainable Development Goals (SDGs). The design of more effective evidence-based strategies is now seen as a *sine qua non* condition for the transition of African countries towards a knowledge-based and innovation-led development. This recent shift in the policy thinking has been marked by the early Africa's Science and Technology's Consolidated Plan of Action[2] (CPA) adopted by the African Ministerial Council on Science and Technology (AMCOST) and the recent adoption of the Science, Technology and Innovation Strategy for Africa - 2024[3] (STISA-2024) by the Heads of States and governments of the African Union (AU) member countries.

In Europe, the ten-year jobs and growth strategy – Europe 2020 – underlines the key role of knowledge and innovation for a smart, sustainable and inclusive growth. Under the Europe 2020 and the EU Cohesion policy, EU regions have massively committed themselves into the design and, more recently, implementation of their smart specialisation strategies. National and regional research and innovation strategies for smart specialisation (RIS3) are economic transformation agendas based on a more effective use of resources towards a limited set of priorities. Relying on decades of evidence collections and experience in innovation policy making, the concept offers much more than a set of innovation policy instruments. It provides policymakers and local actors with principles to think, design and practice place-based development strategies with an eye on the outside-world.

Acknowledging the common agendas and related challenges in the area of innovation policy (IP) making, this short note provides grounds for an initial reflection on the conceptualisation of smart specialisation strategies (S3) in the Sub-Saharan African context. It focuses on the relevance of the S3 approach in informing and challenging IP making in Sub-Saharan Africa countries.

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[1] The author would like to thank Dr Almamy Konte and Dr Bi Irie Vroh for their comments on the document. Dr Konte and Dr Vroh are respectively Senior Experts in Innovation policy and in Science and Technology policy at the African Observatory for Science, Technology and Innovation (AOSTI) of the African Union.

[2] The CPA are to enable Africa to harness and apply science, technology and related innovations to eradicate poverty and achieve sustainable development, and to ensure a contribution of Africa to the global pool of scientific knowledge and technological innovations. The CPA relies on five flagship research and development programmes to be implemented between 2006 and 2010: biodiversity, biotechnology and indigenous knowledge; energy, water and desertification; material sciences, manufacturing, laser and post-harvest technologies; mathematical sciences; and information, communication and space science technologies.
Earlier plans include the 1980 Lagos Plan of Action (1982), which states the need for Africa to invest at least 1% of its GDP in R&D and the Abuja Declaration (1987) underlining the need to institutionalize and exploit African research and for a more effective exploitation of local scientific and technical competences.

[3] The STISA is part of the 50-years AU's plan – AU Agenda 2063- which supports the vision for the development of the continent and for the African integration and unity. STISA-2024 designed as a first 10-years plan, STISA's priority areas are: Eradication of Hunger and Achieving Food Security; Prevention and Control of Diseases; Communication (Physical and Intellectual Mobility); Protection of our Space; Live Together- Build the Society; and Wealth Creation.

Building capabilities in innovation policy (IP) making

As acknowledged by the African Union Commission and recent individual States' initiatives, a first challenge for the African governments resides in the need to build up or reinforce the public sector capability to monitor, promote and support innovation and innovators. As for now, the innovation systems in most Sub-Saharan Africa countries are often dominated by isolated individuals-led initiatives and scattered uncoordinated measures and actions (weak institutional links). From this perspective and relying on the design and on-going implementation experiences, smart specialisation offers a **flexible (experimental), step-based and gradual approach** to innovation policy making. In its essence, S3 enable experimentation and learning processes to take place across and within the public and the private spheres. Such an approach is indeed relevant from the perspective of Sub-Saharan Africa governments willing to set up STI governance structures, which enable a flexible and dynamic decision-making and further, an effective implementation and monitoring.

An inclusive approach to knowledge and innovation-based development

« *We must mobilise and widen the involvement of relevant segments of our population, private sector, civil society, parliamentarians and the Diaspora to participate in Africa's science and technology programme.* » Dr. Martial De-Paul Ikounga, Commissioner for Human Resources, Science & Technology Africa Union Commission

S3 takes the form of a collective and inclusive experimentation, where relevant stakeholders from each branch of the quadruple helix, i.e. the industry, the government, the higher education institutions and the innovation users or society representatives should be involved. Owing to the non-neutral nature of the policy, this inclusive strategy intends to facilitate the realization of synergies and to limit the negative externalities resulting from purely policy-oriented interests and lobbying-like actions. Also in the frame of the design and implementation of IP in Sub-Saharan Africa, **inclusiveness** is seen as a fundamental principle for the achievements of development goals. Yet, very few functional examples exist in the Sub-Saharan regional context.

Place-based strategies for place-oriented priorities

Common to the African and European agendas, are the identification of priorities guided by the challenges faced by their local population and societies. A smart specialisation perspective on the identification of priority areas advocates a **placed-based approach**. In other words, the focus is put on the assets and resources available to regions and Member States and on their specific socio-economic challenges in order to identify unique opportunities for development and growth.

The commitment of local entrepreneurs for local development

In the S3 framework, the entrepreneurial discovery processes are seen as the privileged source to communicate about what could be best produced and to reveal the most promising future areas of specialisation in terms of R&D and innovation. The S3 approach adopts a broad perspective on entrepreneurial agents, which encompasses individual entrepreneurs, firms as well as higher education institutions. Their particular knowledge is their key asset.

Although the innovative entrepreneurial activity is recording peaks in many Sub-Saharan Africa countries, entrepreneurs often lack the policy attention, or worse mistrust governmental authorities. This added to the lack of proper and stable funding and entrepreneurial training structures render difficult the sustained **commitment of local small business and entrepreneurs** in the search for the much-needed solutions to address challenges specific to their local contexts. The early and fundamental involvement of entrepreneurs in the S3 processes gives from this point of view a relevant framework to rethink the role of the entrepreneurs in the territorial development strategies.

This succinct reflection on the S3 in Sub-Saharan Africa attempted to put forward few of the many challenges that IP making in Africa and Europe share. In this context, a collaboration between the JRC, host of the S3 platform, and the STI policymaking in Sub-Saharan Africa yields many opportunities for a mutual learning and capability building in the area of IP making across highly heterogeneous territories.

Indicative early roadmap steps

➢ Prepare a conceptual document "Smart specialisation in Sub-Saharan Africa: opportunities and challenges" preferably involving in the early phases experienced African colleagues (e.g. from AOSTI[4] but also from UNU-MERIT, which has been involved in the early STISA phases). This document should include, among other:
  • Principles and rationales of smart specialisation concept and policy approach
  • A smart matching grid of the institutional and innovation policy needs and priorities in Sub-Saharan Africa countries and the opportunities for a more coordinated, monitored and place-based approach to innovation development and promotion in Smart specialisation framework - contextuality matters! there are more than 40 different countries[5] and even more degrees of socio-economic, institutional and cultural diversity.
  • State of the art of innovation monitoring indicators in Sub-Sahara Africa (e.g. the African Science, Technology and Innovation Indicators (ASTII) Initiative[6] and national programs)
  • State of the art of S&T or/and innovation policies or strategies in Sub-Sahara Africa countries. Prior reviews have been done, among other, in the STISA context, but they need to be broadened to the larger set of countries).
  • Implementation examples of smart specialisation in heterogeneous socio-economic and institutional context (e.g. Europe, Latin America, South Africa)

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[4] AOSTI is a specialized technical office of the African Union which intends to be the continental repository of STI statistics and a source of policy analysis in support of evidence based policy making in Africa
[5] The list of Sub-Saharan Africa countries is provided at the bottom of the document (UNDP's list)
[6]. ASTII initiative which started in 2007 increased its coverage from 19 in the first phase 2007-2010 to 28 for the second phase 2010-2013 in the African Innovation Outlook.

➢ Establish contact with, for instance, national governments, ministries with R&D and innovation or STI, as well as entrepreneurship, business (e.g. SMEs) and trade, mandates, regional institutions - African Union and ECOWAS, AOSTI, World Bank, UN -, relevant regional development communities and local federations. We should avoid duplication and take advantage of the great work these organisations have been doing since decades, through development-oriented innovation programs or STI measurements related activities.

Countries in Sub-Saharan Africa

Angola	Kenya	Togo
Gabon	Sierra Leone	Republic of Congo
Nigeria	Cape Verde	Mauritania
Benin	Lesotho	Uganda
Gambia	South Africa	Cote d'Ivoire
Rwanda	Central African Republic	Mauritius
Botswana	Liberia	Zambia
Ghana	South Sudan	Equatorial Guinea
Sao Tome and Principe	Chad	Mozambique
Burkina Faso	Madagascar	Zimbabwe
Guinea	Swaziland	Eritrea
Senegal	Comoros	Namibia
Burundi	Malawi	Ethiopia
Guinea-Bissau	Tanzania	Niger
Seychelles	DRC	
Cameroon	Mali	