

STIAS RoundTable on Innovation: Policy brief

May 2016



DST-NRF Centre of Excellence in
Scientometrics and Science,
Technology and Innovation Policy



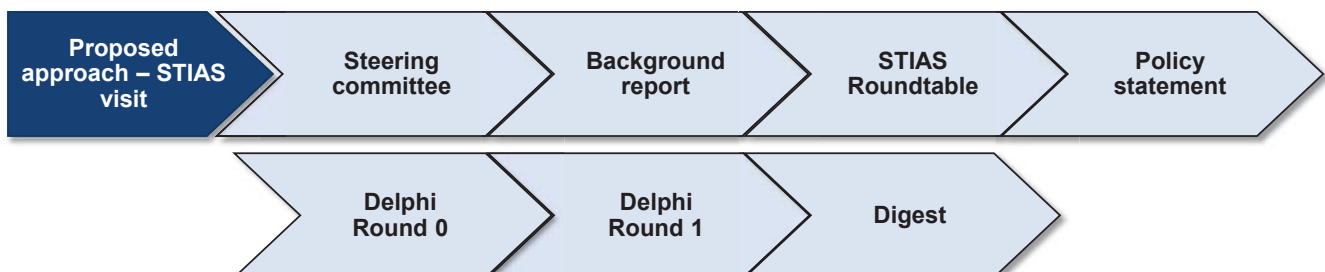
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The approach of pathways and framing the debates



Process to arrive at pathways and policy statement:

Feedback from Steering Committee and independent experts, Delphi Survey (experts and students)



Five pathways

- Global and regional economic integration
- The promise of innovation for inclusive development
- Diversification and developing knowledge and innovation driven economies
- Transforming higher education
- The role of Government

Before we even start: Health warning

1

“Africa is a big country” – a very diverse continent – i.e. Views on what governments can and should do differ widely

2

Many issues are not new: We have raised old and existing debates – but the intention is to try and rethink the approaches we are taking – **TO QUESTION** conventional wisdom

3

Science, technology and innovation policies **cannot compensate for poor governance and framework conditions, particularly corruption**, which continues to be a significant problem.

Before we even start: What we want to achieve

4

The key output from the report was to provide a **starting point** from where to identify the main barriers to innovation-led growth.

5

“Are we asking the right questions? What is missing in our **framework?** Hope to work towards suggestions for **rethinking approaches** and “turning it on its head”

6

How to work with “what we have” to create a prosperous continent

No matter what we asked– themes emerged

None of these issues are new – but we need to rethink fundamentally how we are approaching development in Africa and the role of innovation in driving inclusive development

1

AFRICA-centric approach required = CANNOT COPY AND PASTE
Difference in countries and the nature of their economic development, unevenness of economic development

2

Government to create a supporting environment, ensure good framework conditions, acceptance of market processes and rule of contract, combat corruption (**you cannot leapfrog education and healthcare!**)

3

Widen participation and raise productivity, manufacturing industries, don't forget about agriculture, create access to services, healthcare, education

4

Role of capacity development and education; universities in touch with their surrounding societies

Path 1: Regional economic integration

To create innovative industries – We need demand for goods - We need to develop domestic markets to develop export markets

1

Longstanding debate on regional integration in Africa

2

Highly fragmented markets

3

Many barriers to trade exist in Africa such as poor infrastructure, supply-side constraints, high transport costs, and lack of skills and capital

4

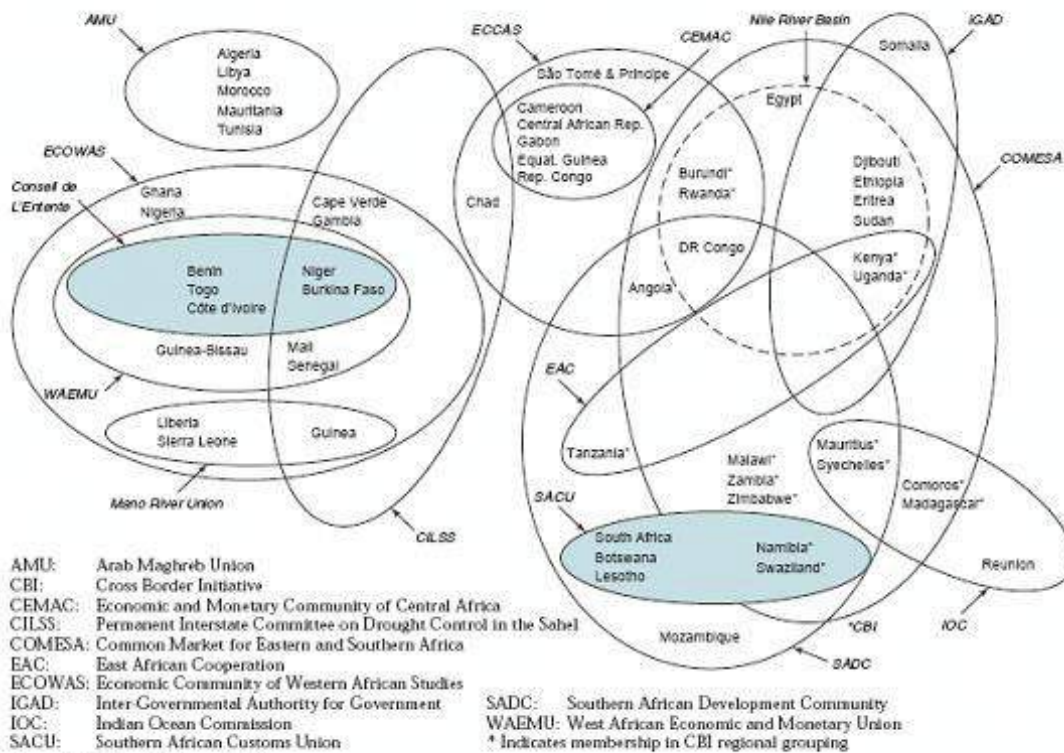
Poorly implemented agreements, overlapping memberships

5

Regional super-powers – reinforce inequalities – especially where there are strong extra-regional interests

Path 1: Overlapping Regional Trade Agreements

a. African agreements are overlapping



Path 1: Some comments from our experts

“Africa cannot and should not rely on blindly following other regions’ and countries’ models or paths for economic development” Delphi expert

“The countries of southern Africa should strive to simplify the current complex plethora of overlapping regional integration agreements ...

“Parallel measures should also be undertaken including investing in infrastructure, initiating cluster and sector development of all member states, and improving connectivity to the global economy

?

What is the fate of **less-developed countries in regions with super powers**? Is there a role for **regional super powers** to support development in their poorer neighbours?

?

Do we have to **fundamentally rethink our approach to regional integration** and, if so, in what way?

?

Are there **other ways to develop competitive industries and productive capacities** other than creating local markets through regional integration?

Path 2: The promise of innovation for inclusive development

1

“Grand Societal Experiment” was proposed (Rip). Here in particular a country like South Africa is in an interesting position as

- it has inter alia a relatively **sophisticated economy**,
- **financial sector**, good **universities** and
- a large number of **local and multinational corporations** that co-exists in a setting along with a
- **majority that is largely excluded from economic activity**, living in poverty and desperation.

2

innovation for inclusive development refers to the **improvement of living conditions** and **creation of employment opportunities for the poor** through the development of **new products, services, processes and business models** aimed at resource poor communities.

3

Conceptualisations of inclusion in the innovation process may include **the problem statement; process of innovation, adoption or absorption of innovation, economic inclusion:**

9

Path 2: The promise of innovation for inclusive development

Jaipur foot



Unjani clinics - containers



Path 2: Some comments from our experts

“Recognizing the power of **user- and community-based or "collective" innovative experimentation and of public-private partnerships, particularly at local and community level**” *Delphi expert*

“**Agriculture and health, but also cities** as innovation hubs, are important domains and sites to work on innovation for inclusive development in Sub-Saharan African countries....

“**Local initiatives** usually have a **deeper understanding of the challenges**, therefore if they are encouraged and supported they can go a long way ... **Linking grass root challenges to universities**, could be another way boost pro-poor innovation systems, with the participation of both students and faculty to provide feedback or get involved in the innovations.” *Delphi expert*

?

How can we embark on a Grand Societal Experiment (Rip) - How can we better leverage **formal / traditional / globalised industries and global players**

?

New institutions – e.g. IP?

What role does that create for **regional super powers?**

?

A new generation of extension workers

New roles for traditional role players in innovation systems

Path 3: Diversification and developing knowledge and innovation driven economies

“*To grow fast, African countries need to shift workers into more productive industries. Their governments need to provide the infrastructure and the incentives for manufacturing firms to set up. Without determined action, they risk another lost decade as the commodity bust deepens.*” *The Economist, November 2015*

1

Lack of structural change in economies and, in general, **agriculture has not been modernising**

2

Along with **manufacturing that has stalled** and, in some cases, is **in decline** expressed in percentage of GDP, this has as a consequence that industrial performance is lagging.

3

If we consider **export-related indicators**, most African countries show a **relatively small number of unsophisticated commodities**.

4

“**Working with what we have**”: **Commodity-based industrialisation** could serve as a base from where diversification and competitiveness can be developed in commodity and non-commodity sectors.

Path 3: Diversification and developing knowledge and innovation driven economies

“Ideologically driven by oversimplification to call African economies resource driven and serves the interests of an interventionist industrial policy to diversify the economy in some intentional manner”

“Some are resource driven – others have spawned significant spill-over needs such as energy supply, water management, the steel industry and associated heavy metal industries – resource industries became catalysts for development with global demand driving continued development”

- **Productivity, modernisation and upgrading of technology** – e.g. agriculture
- **Manufacturing sector** needs to be prioritised need to reverse deindustrialisation
- Education system: Appropriate capacity, education, **Stronger link between knowledge workers and needs of industry** – draws on academic research
- **Sustainable energy systems** in Africa – powering growth
- Collaboration and co-creation opportunities; collective experimentation
- **Entrepreneurship** – education, skills, mentorship, coaching
- **Market based approaches** – possibly will happen after some “nursing of markets”

Path 3: Asking the right questions?

?

Is African de-industrialising really taking place and how big a threat is it? How to address this?

?

How can African economies **overcome the resource curse**? What **capacities are required** and **policy frameworks**?

?

Recent developments in **distributed manufacturing and concepts such as 3-D printing and mobile factories** may mean that the traditional approaches to **industrial development have to be rethought**

?

Will this assist African economies to become more integrated in global economies? The **implications of asymmetries and weak regional integration** through new and non-traditional approaches to developing manufacturing capacity and new linkages into value chains.

Path 4: Higher Education

- Much focus on the education system in all the questions we posed
- Youth unemployment – major issue
- Huge mismatches between the education on offer and what is in demand from employers
- Lack of focus on vocational training
- Range of challenges from funding issues to poor linkages
- New role for universities – outside traditional activities

“An effective and well-developed education system is the most important long-term investment a society can make and a necessary condition for economic development” – Policy statement of STIAS RoundTable

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“Africa should start analyzing our own development requirements and find ways to establish industries that can serve these needs from understanding of local contexts... Without properly laid-out policies that result in action to include more people in participating in economic activity, poverty will never reduce on this continent.” (Student survey response)