

Green development prospects in Sub-Saharan Africa (SSA)?

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Calestous Juma on energy technology in 2001

A key question for the global governance of technology is to consider the roles that developing countries and industrialized countries can play in the process of the development and adoption of the new energy systems that are necessary to meet environment, development and security needs. This is a big question that lies at the heart of sustainable development, and which does not have a simple answer. ...

With technology available from industrialized countries, developing countries could, and often do, play only the role of purchaser. However, for many developing countries this is neither affordable nor desirable. Rather, they would like to develop further technological capabilities to undertake manufacturing, systems integration and energy R&D.

Greening now?

- The global green transformation is accelerating. It is costly.
- In terms of bringing down CO2 emissions with renewables (the context of this intervention) the price of energy will rise (making overall economic development more difficult)
 - The cheapest renewable sources (large hydro) are typically exhausted
 - Renewable prices are falling and are close to achieving parity with fossil fuels, but we are not yet there. And battery technology is still developing – intermittency is a major issue
- Should countries in SSA then adopt a ‘industrialise first and clean up later strategy’ (Altenburg and Pegels 2020)?
 - After all, SSA does not have a moral obligation for cleaning up after the rich world
 - Bucking expensive green investments can leave space for other welfare-enhancing investments
- Greening now – and learning from it – is essential but difficult (next slides)

Green windows of opportunity in SSA?

- In BRICS countries, the choice is even more straightforward
 - They reap significant economic gains from greening ('green growth') and re-orient their economies to develop competitiveness in a decarbonised world
 - In China, the government has been able to create and exploit 'green windows of opportunity' marching towards global leadership in several RE technologies (Lema *et al.* 2020).
- In SSA, it is much more difficult: The vast majority of green energy technologies are (still) imported – small 'windows' with many constraints
- But the process of greening can still provide valuable experience industrial development gains: production/innovation capabilities, development of supply chains and jobs. Understanding if and when they arise is key.

Industrial development gains are very important, but they are not automatic

- There are opportunities in the value chains of RE technology
 - Production chains: assembly of core technologies, manufacturing of peripherals (inverters, cables, racking etc.)
 - Deployment chains: services involved in engineering, procurements and construction
- Find niches in ‘attainable functions’ and use them for leveraging and learning. Requires in-depth value chain analysis, starting with local RE chains and their opportunities for substituting imported inputs.
- The energy sector will be more dynamic in the future
 - More manufacturing and service intensive - more openings for industrialisation strategy.
 - Gaining some foothold now is important – the opportunity window can close

Going forward – need for change

- New policies are needed to turn opportunities into reality. Key policy mission: changing the circumstances around green infrastructure delivery (as opposed to only focus on the subsequent green energy delivery – the main current policy focus).
- Requires a lot of ‘innovation’ - and not only in R&D and technology (innovations in policy design, system creation, organisational models, service provision...).
- Build on domestic niches and indigenous innovation. Not least those associated with distributed, small scale deployment used for rural electrification (Hansen, 2018). Focus on local agendas and self-reliance (Sokona 2021).
- Globally, it is both a moral and an instrumental imperative to distribute the industrial (economic) gains arising from the green transformation.

Thank you!

Tomorrow:

Renewable Electrification and Industrialization In Developing Countries: New Pathways.
Insights from a five-year research project.

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