

Interactions between the Proposed Energy Mix Scenarios and Non-Energy Sustainable Development Goals (SDGs): A Sub-Sahara African Perspective

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BACKGROUND

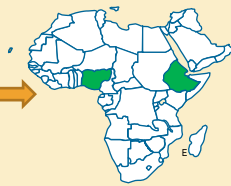
There's a global transition towards low-carbon economies to avoid the long-term consequences of climate change. Renewable energy is being touted as a major panacea to transform global energy architectures. While this large-scale shift is set to disrupt global energy systems, there may be also unintended social, environmental and economic implications, as systems do not operate in isolation. It is therefore important to be proactively aware about potential interactions between energy goals and other non-energy related sustainability goals for better informed decision-making. This is particularly important for Africa whose pace of growth and development is largely dependent on her ability to meet her energy needs. Given the continent's position and peculiarities within the context of the SDGs, an assessment of the interactions and implications between the goal to provide access to energy (SDG 7), and the other non-related SDGs is important in order to provide a contextual understanding that allows for a just and integrative pathway to Africa's sustainable future.

OBJECTIVES & QUESTIONS

The objective of this study is to analyze the SDG interactions between the non-energy focused SDG and the different energy sources in projected energy mixes for two African countries, Nigeria and Ethiopia.

- What are the interactions between SDG 7 and the other critical non-energy related SDGs for the projected IEA (2040) and JRC (2065) energy mixes?
- What would be the impact of large-scale renewable energy diffusion as proposed by the JRC (2065) on other socio-economic and environmental indices in SSA?
- What are the policy implications of the interactions between SDG 7 and other non-energy SDGs in these scenarios?

ENERGY SCENARIOS & SDGS

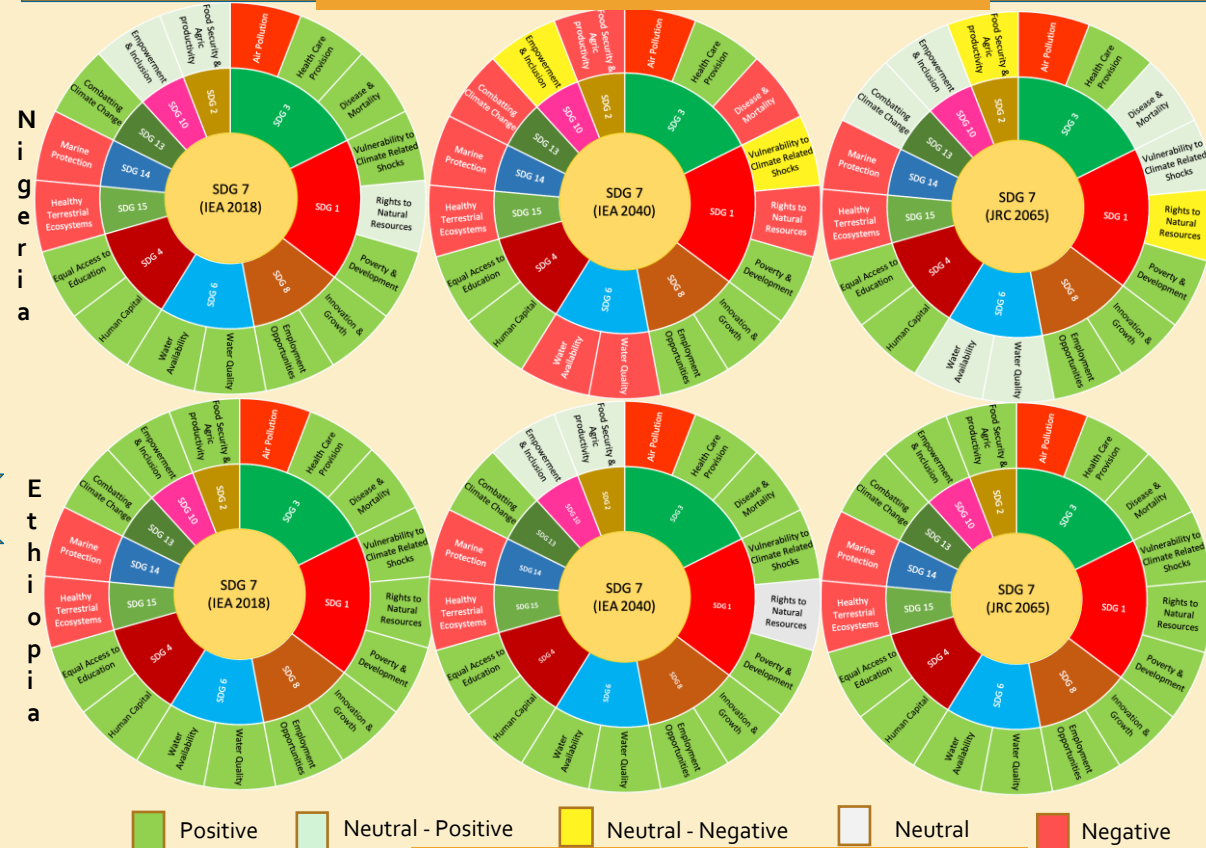


METHOD

Seven-point scale typology developed by Nilsson et al (2016)

- +3 - Indivisible
- +2 - Reinforcing
- +1 - Enabling
- 0 - Consistent/Neutral
- 1 - Constraining
- 2 - Counteracting
- 3 - Cancelling

RESULTS



KEY FINDINGS & TAKEAWAY

- Nigeria with a higher fossil fuel mix in all scenarios has more negative interactions than Ethiopia with a higher renewable energy mix in all scenarios.
- All energy mix scenarios have negative interactions with Air pollution, Marine protection and Healthy Terrestrial Ecosystems.
- Though a renewable energy source, the current utilization of bioenergy in both countries is unsustainable for both human health and the environment.
- The provision of energy regardless of the source has positive interactions with some SDG targets (Poverty & Development, End hunger, Equal access to education, Economic growth etc), underscoring the importance of energy in achieving these.
- Both fossil fuel and renewable energy sources when not utilized in sustainable ways would have similar impacts on the achievement of other SDGs.

References

Nilsson, M., Griggs, D., & Visbeck, M. (2016). Policy: Map the Interactions between Sustainable Development Goals. *Nature - International Weekly Journal of Science*.
 IEA. (2019). *Africa Energy Outlook 2019. World Energy Outlook Special Report*. Paris: International Energy Agency.
 Pappis, I., Howells, M., Sridharan, V., Usher, W., Shivakumar, A., Gardumi, F., & Ramos, E. (2019). *Energy Projections for African Countries*. Luxembourg: Publications Office of The European Union.