BOG: 5. Renewable energy and research into developing market

Many countries in the world are seeking to increase their share of renewable energy, yet in some areas the penetration of RES is still low (for example in Western Africa, Southern Africa, Asian/Pacific area).
This lack of penetration is likely to have several complex causes but, in general, improving access to climate information is a necessary step in supporting the development of renewables and increasing the resilience of energy systems in many areas.
Accessing high-quality climate information for decision making can be restricted in many ways - by the lack of skills or tools or, more generally, in the lack of established good practices in "manipulating" data from its raw form into actionable knowledge.
This working group will therefore address the following concerns:

- how can we support the skill development in the use of climate data for energy in developing markets and the availability of user friendly & well documented tools?
- In which cases better/more climate information can help to support RES penetration?
- What are the gaps (if any) in terms of climate information in developing areas?
- Can more climate information help the uptake of RES

USEFUL NOTES/RESOURCES:

- GEGIS: https://github.com/niclasmattsson/GlobalEnergyGIS (Max)
- Renewables.ninja: https://www.renewables.ninja/
- Pypsa Meets Africa https://pypsa-meets-africa.github.io
- Pangeo:https://pangeo.io/
- NASA Power Viewer: https://power.larc.nasa.gov/data-access-viewer/
- Openmod: https://wiki.openmod-initiative.org/wiki/Open_Models
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NOTES

- how can we support the skill development in the use of climate data for energy in developing markets and the availability of user friendly & well documented tools?

[P1] **scholarships and summer school**
[P1] p**rovide funding for research**
[P2] private-public partnerships for funding scholarships and open initiatives
[P3**] Support people in data science**, for a more educated community, teach people to create/use open tools and educate them on the use of climate data

[P1] mentorship programs
[P3] Information about projects -> @matteo why not a starting toolkit compiled by the community about list of projects, data sources - possibly with regional scope
[Max] Funding for people is not enough. We need to improve the allocation of people to the lacking bits and improve collaboration.
- 'Funded' people should join open source developments and build on the shoulder of the community. It will avoid replication.
- Open source project need to do a better job in on boarding developers (collaborators)
- Open source projects can create **governance structures** that can attract multiple funding
[P1] **We mostly focus on data but energy is a wide area, it's difficult to say 'skill development', which skills are we talking about**? ← [Guadalupe] support multidisciplinary groups
[P1] More access to papers, more access to software (commercial)
[P4] **more conferences/workshops**
[P1] webinar to universities

- In which cases better/more climate information can help to support RES penetration?

(P1) Jordan has 21% RES electricity, now a step backwards due to political stability, grid iisolated, only one interconnection. Grid stability is a huge factor. Forecasting is difficult, centralised and decentralised RES. Recent blackout in Jordan due to sudden disturbance in the interconnection with Egypt. Lack of flexibility, only one market. However, climate data is critical if you want more RES. The operators
[P1] climate data will support investors decision making in RES
[P3] Russia is transitioning, thanks also to the pressure from neighbours, to low-carbon systems but the operators are still very conservative, climate info can help for social awareness, also in terms of simulation
[P1] **more climate data can support building local climate change impact to advocate for RES**
[P2] More climate data can help to understand the link to climate change

- What are the gaps (if any) in terms of climate information in developing areas?

[P3] **We need simple tools to calibrate/adjust data**
[P4] **Local observations to evaluate ERA5 quality**
[P2] Challenges in data collection, how to overcome cost issues of data gathering and analysis? -> @Matteo maybe saving money with tools/software using open tools
[Matteo] **We also need knowledge about climate data (**P5 agrees, knowledge about reliability, quality) but also on how to use data, variables, limitations, description
[P1] Lack of research in energy scenario
[P1] support skills require exchange and capacity building. Encourage start up system to enable innovation that will increase the RES e.g., AI forecast of RES generation.

[P5] We need more data, energy data - same @P4 saying is difficult to access data, hourly demand for example, but also local observations and if you cannot access data you cannot improve it

- Can more climate information help the uptake of RES

[P3] more climate info would help the social perception of RES, education is needed.
[P1] climate data can build a carbon net-zero market, climate data can help to improve climate change