



United Nations
Economic Commission for Africa

Energy and Sustainable Development: Addressing the real need

Mainstreaming Energy Sustainable Development
Goals, Targets and Indicators into Statistical
Programmes in Select African Countries

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- The dimensions of energy for sustainable development
- Key reality checks and handbrakes to sustainable energy in Africa
- Some suggestions on the Way forward to realise sustainable energy development

Energy & Sustainable Development as applied in Africa



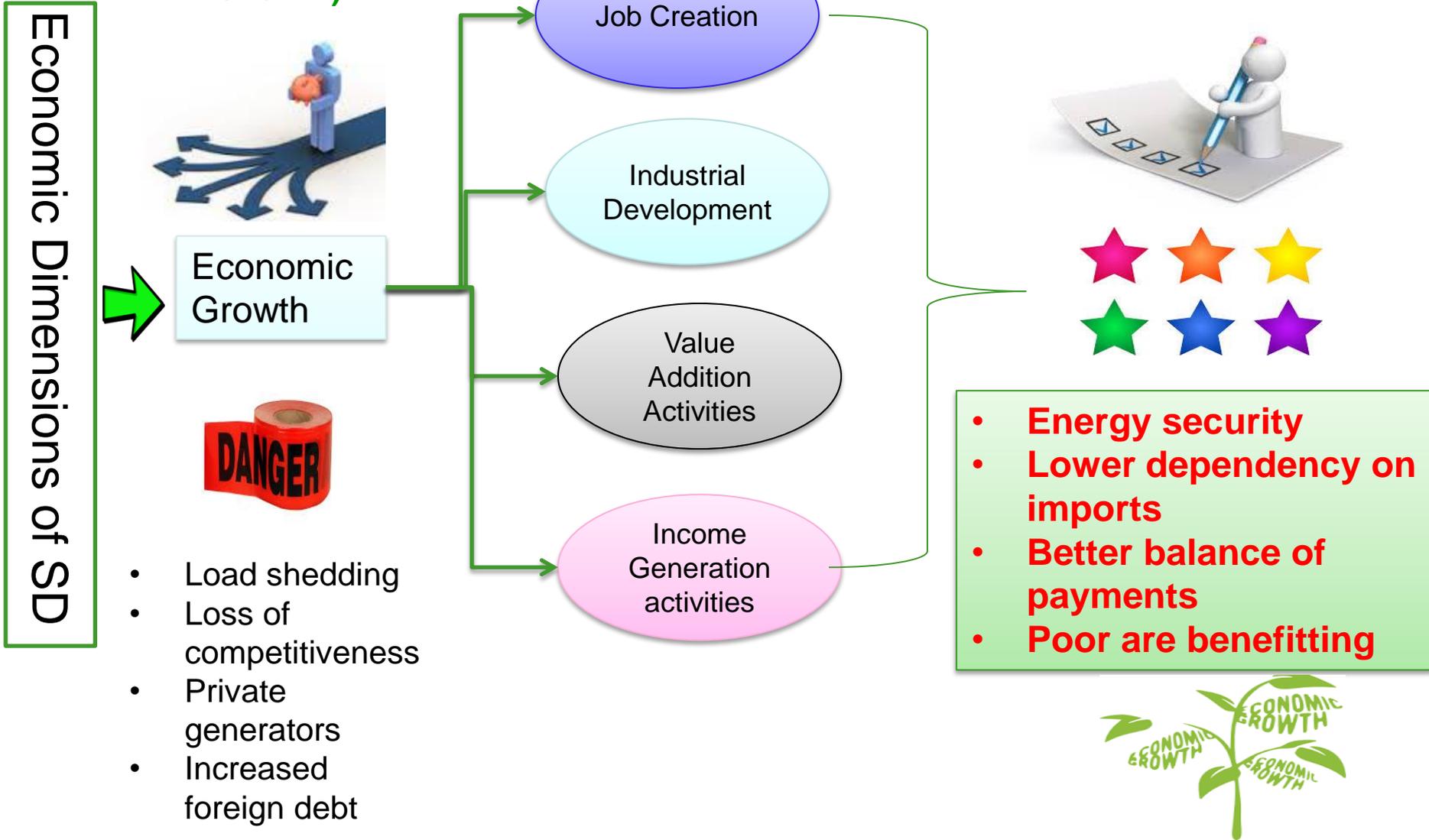
Agenda 2063



- Agenda 2063 – *the Africa we want*
- SDGs – *leaving no one behind*
- Structural transformation is a conduit for achieving Africa's development agenda
- Energy input and resource efficiency key requirements
- Climate change challenges offer new opportunities for late comer leapfrogging and leadership for low-carbon development



Diversification of energy supply (RE and EE)



Lack of access to adequate energy is handbrake to achieving all the other SDGs

Social Dimensions of SD



Energy Poverty



Inadequate food supply

Lack access to water

Inadequate sanitation

No access to healthcare

No/little schooling

Lack agricultural output

Entertainment facilities

Sustainable Development Goals



Access sustainable & modern energy

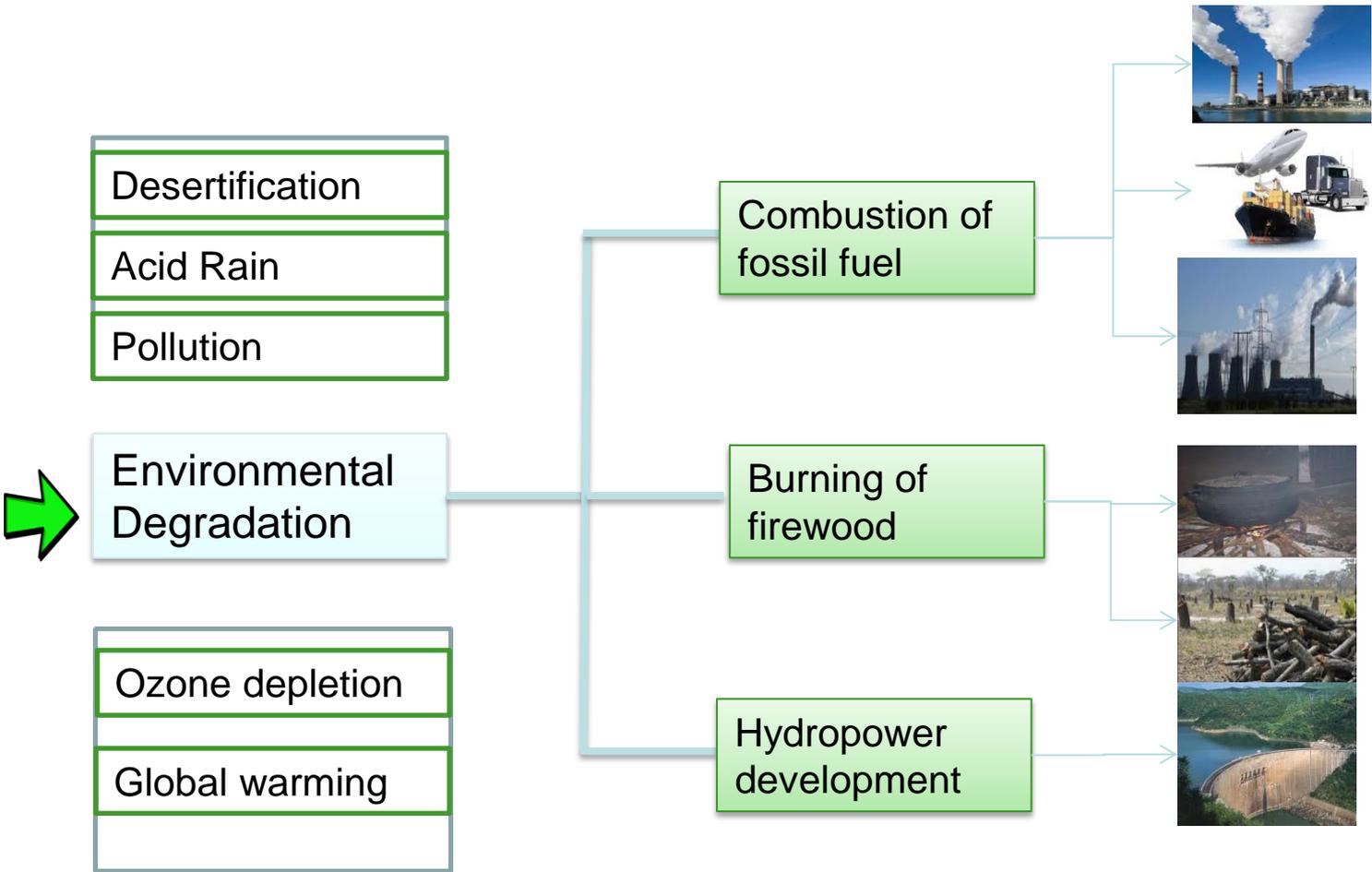
- Functioning health systems
- Schools electrification
- SMEs development
- Water systems for agriculture & consumption
- etc



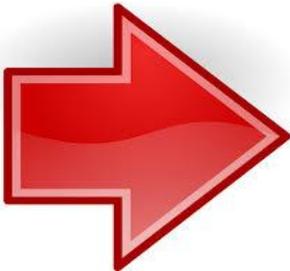
Enabler/catalyst



Environmental Dimensions of SD



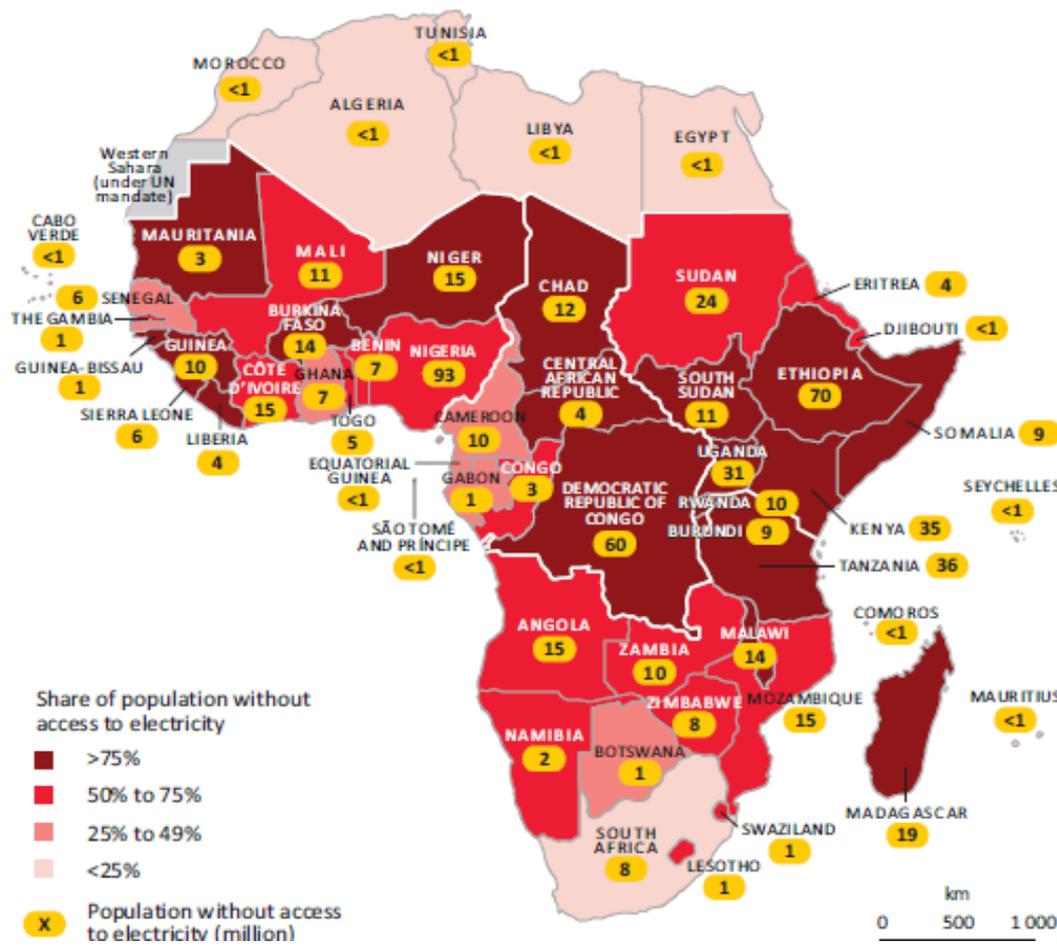
- Energy efficient industries
- Use of modern renewable energy
- Improved EE cookstoves
- Biodiversity conservation, etc





Key reality checks and handbrakes to sustainable energy in Africa

1. Number of people without access to electricity in SSA is increasing – as a percentage of population, more people don't have access vis-à-vis other developing regions



Over 600 million people in Africa still have no access to electricity and over 700 million without access to clean cooking solutions

Source: World Energy Outlook: Special Report 2014

2. To increase from current access levels of 24%, 7000 MW (or equivalent) of new generation capacity per annum is required OR USD 41b investments in generation p.a. \cong 6.4% of SSA's GDP



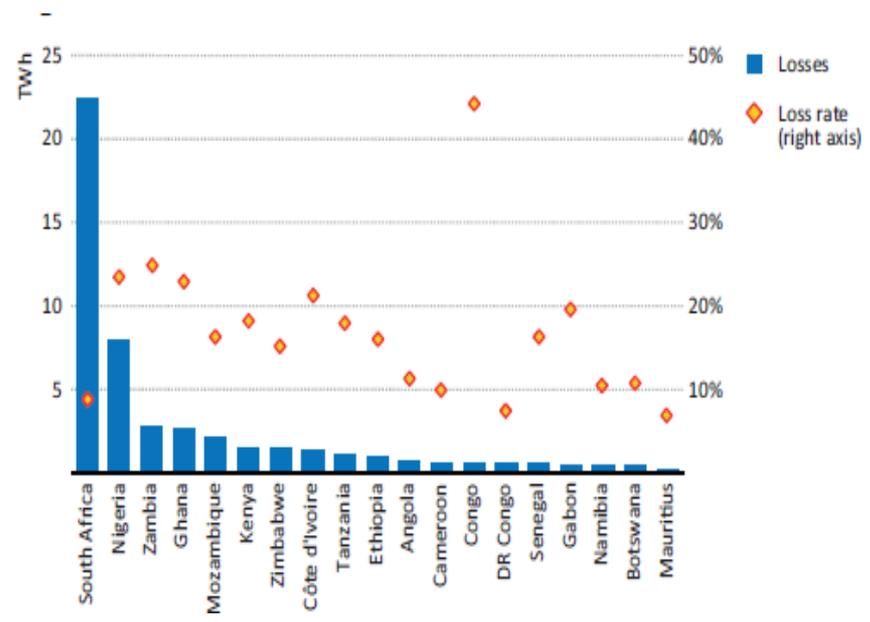
- Rural energy/electrification even more difficult to finance under current finance regimes
- Project development and packaging – capacity is limited
- Understanding conditionality of available funding mechanisms



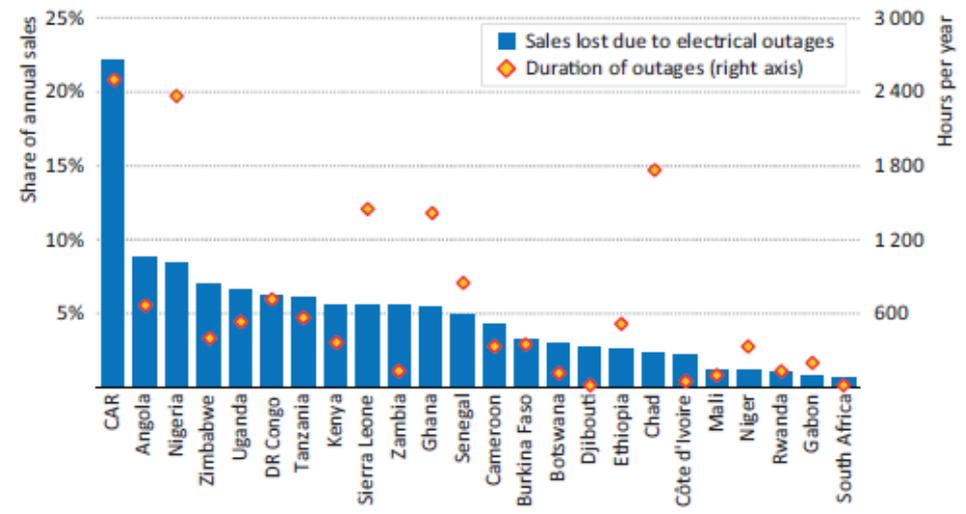
**Current continental installed capacity approx. 160 GW
i.e. just 20% higher than France's installed capacity**

3. From current electricity installed capacity available electricity is even less -- Average losses are at 18% in SSA (excl. RSA) = Load-shedding, power cuts, electricity rationing, etc.)

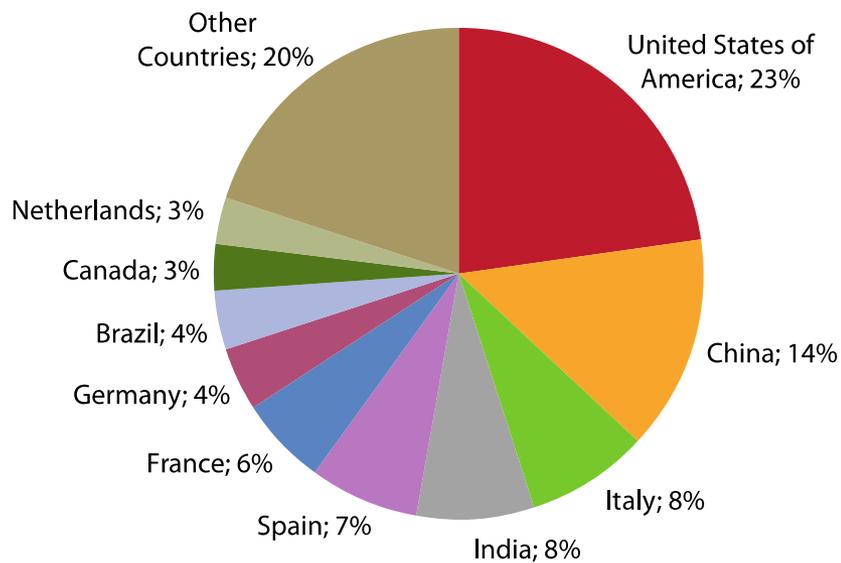
Transmission and distribution losses and loss rates in 2012



Duration of electrical outages and impact on business sales in selected countries



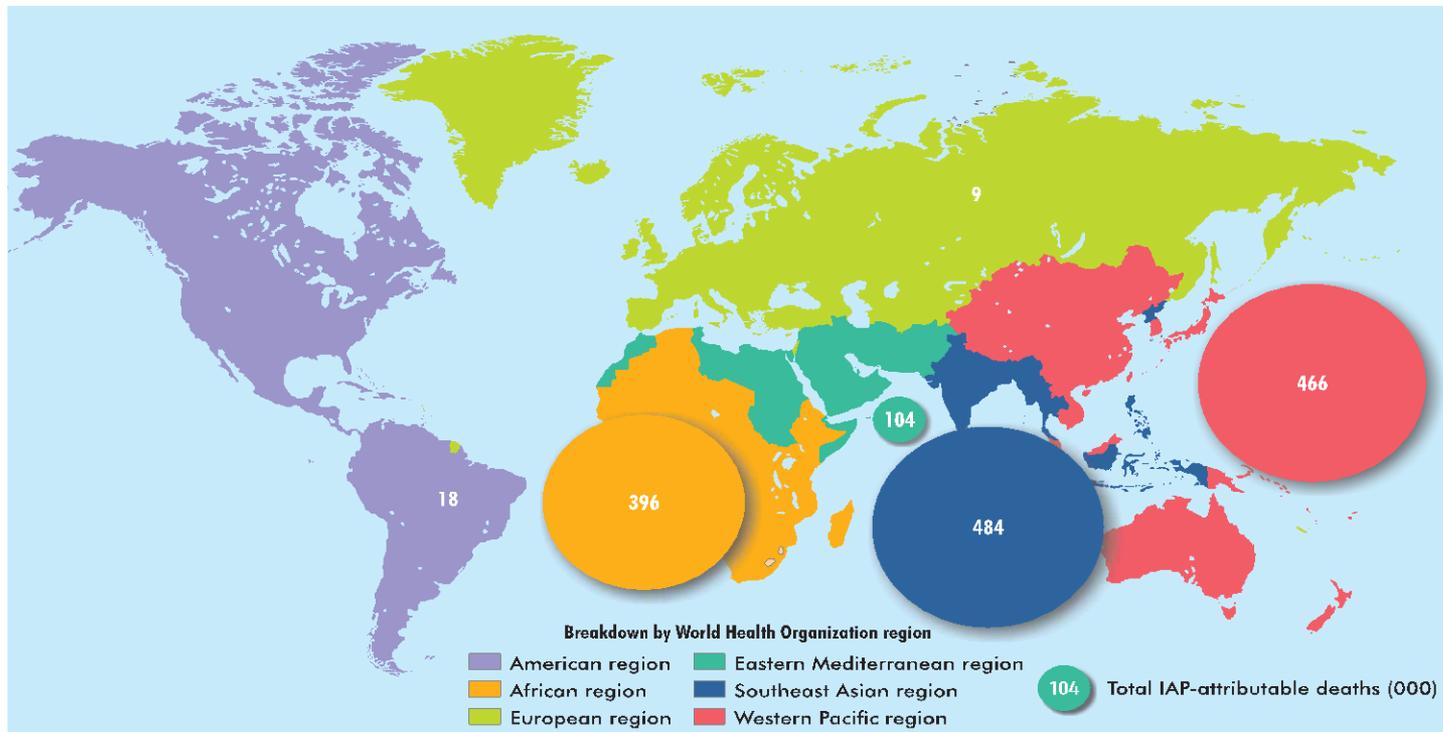
4. There is general over reliance on imported petroleum product – most regions are vulnerable to price volatility shocks.



Source: Trade Map

- 38 of 54 African countries are net importers of oil products
- Volatile costs = less foreign exchange for other NB imports
- High price of input = expensive transportation = high inflation (2.6% p.a. by AfDB 2010)

5. Over 80% of African households (and higher in some countries) are dependent on solid biomass as a principal energy source for cooking/heating – even with access to electricity



Death by biomass related health problems according to WHO

6. Energy poverty = inherent gender inequities & dimensions – more women and girl children are responsible for fuel harvesting and cooking



- Carry weighing over 20kg and can be as heavy as 75kg
- Travelling to and from firewood collection points (0.8-5 hrs p/d)
- Land-ownership is largely in the hands of authorities (usually male-dominated traditional structures)

7. Increasing deforestation means less availability of biomass feedstock – although this may not be caused by fuel harvesting per se (land clearance for agric. & infrastructure)



- According to FAO, Africa lost highest % of rainforests during the 1980s, 1990s, and early 2000s
- Population growth (Nigeria/Ethiopia), agriculture & commercial logging (Ivory Coast), drought & soil erosion (Mali/Niger)
- Kenya had 10% of forest cover by 1963, but only 1.7% cover in 2006
- Nigeria lost 81% of forest area in period 1990-2005



8. New opportunities & better outlook: Paris Agreement on CC puts RE at centre of climate action & positions Africa to become new centre of gravity of climate action over next few decades

- Great progress in South Africa, Morocco, Kenya, Ethiopia, Cape Verde, Mauritania, etc
- South Africa's Renewable Energy Independent Power Producer Procurement Programme resulted so far in 6.3 GW of contracted capacity with 3 GW in total online by end of 2016; 70% investments from domestic resources
- Kenya's geothermal leadership with over 600 MW of capacity laudable
- Ethiopia's wind farms and the Grand Renaissance Dam on progress at already over 50% completion; domestic resources key

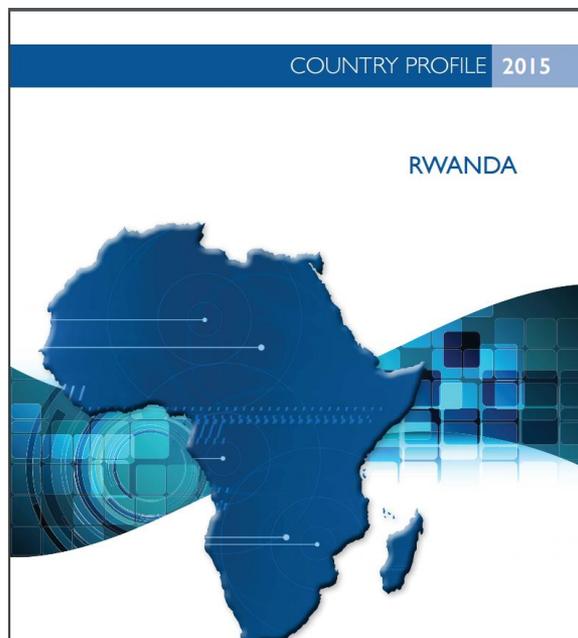
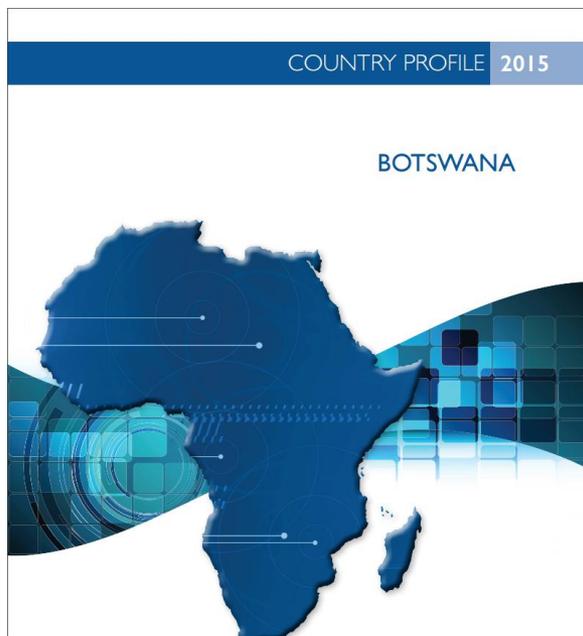




Some suggestions on the Way forward
to realise sustainable energy
development



1. Integrate mainstreaming of SDG goals, targets and indicators in national statistics offices within the framework of the ECA's Country Profiles Programme



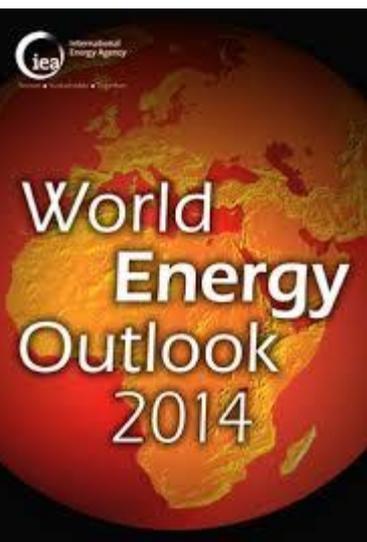


2. Produce scenario-based energy demand projections

Energy modelling based on economic sectors and time horizons



V E R S U S



Fossil fuels



Nuclear

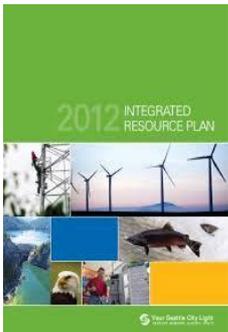


Renewables



3. Produce comprehensive energy supply strategy and consider:

- SE4ALL (SDG 7 – Energy)
- Outcome of the scenario-based energy demand projects
- Transboundary projects (i.e. PIDA)
- Regional projects implemented by RECs
- National targets



4. Review and implement national policies:



- Reform the energy sector – attention on rural energy, market orientation and private sector participation
- Adopt frameworks to promote practical adoption of new technologies
- Strengthen regulatory framework
- Legislate policies – ensure no changes in case of admin changes



5. Monitoring and evaluation to improve efficiency and impact

i.e.. Energy Development Index
of International Energy Agency

- Per capita commercial energy consumption
- Per capita electricity consumption
- Share of modern fuels in energy balance
- Share of population with access to electricity



