

CLIMATE STATUS AND TRENDS ON ENERGY

Overview of the ECOWAS Region

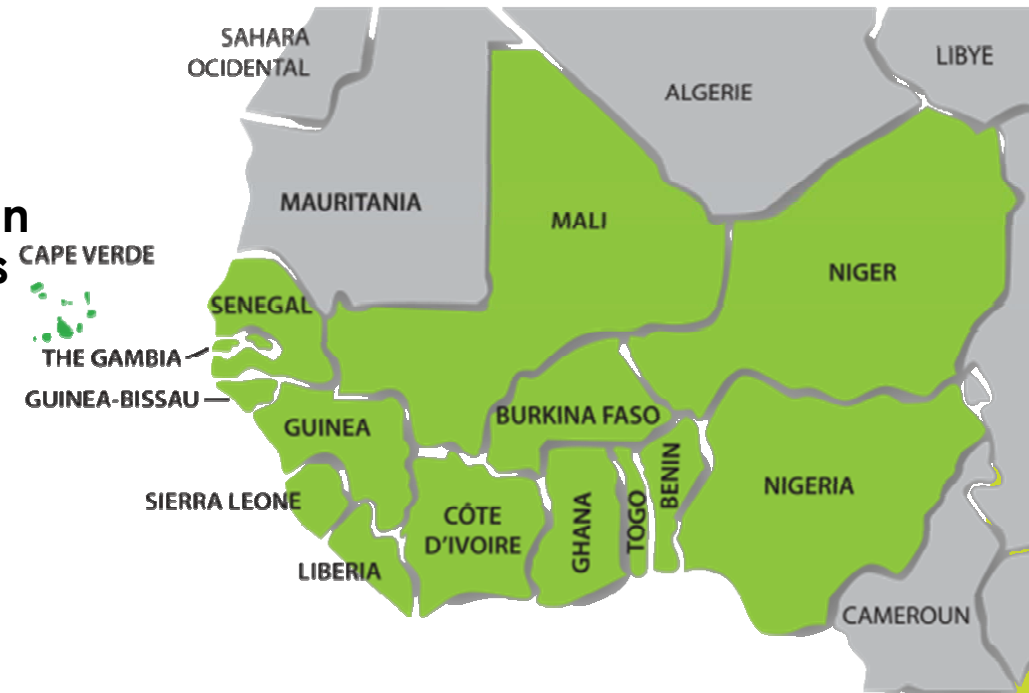
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Sub-Regional Dialogue on the MRV framework West Africa
4-6 October, 2016. Lome, Togo

THE ECOWAS REGION

- 15 countries with a land area of 5 million m²
- Climate from semi-arid to humid tropical
- Expanding Population of over 334.6 million people in 2014.(ECOWAS RE and EE status report 2014).
- 60% of population live in rural areas
- 11 of the 15 countries are LDCS and 13 classified as having “Low Human Development”
- Almost 176 million people have no access to electricity (52%)



Climate trend in the ECOWAS Region (1)



Figure: Flooded Street

❑ **Historically, the region has experienced variable trends in climate culminating in:**

- ❖ Decades of severe drought especially in the northern Sahel regions along with;
- ❖ Cycles of above average rainfall causing localised flooding and negatively affecting agricultural production;
- ❖ Drying of rivers, streams and surface water bodies e.g. lakes etc.

❑ **Future projections indicate:**

- ❖ Decreased rainfall over the Sahel regions characterized by late onset and early cessation;
- ❖ WA countries liable for shorter rainy seasons, generalized torrid, arid and semi-arid conditions, longer dry spells and more intense extreme precipitations
- Observations already indicate an average increase in temperature of between 0.2 and 0.8 °C. and rising

Climate trend in the ECOWAS Region (2)



- ❑ **Prolonged droughts and erratic rainfall patterns in the region is leading to:**
- Southward movement of desert conditions;
 - Drying of the water bodies, hydro power dams etc;
 - Increases the reliance of the people on non-wood forest products;
 - Increase in the search areas of the people for fuelwood from the local forests;
 - Reduction of tree cover which adversely impacts on sources of biomass energy;
 - Exacerbates the energy access problems at the local communities

12/5/2016

Energy Situation in the ECOWAS region

- Interrelated challenges of energy poverty, energy security and climate change mitigation and adaptation
- **Low Access to modern energy service**
 - One of the lowest energy consumption rates in the world;
 - The poor spend more of their income on low quality energy services;
 - Rural areas rely mainly on traditional biomass to meet their energy requirements;
 - Household access to electricity services is only around 20% (40% in urban and 6-8% in rural areas);
- **Energy security concerns**
 - High vulnerability to fossil fuel price volatility (60 % of electricity generation from oil)
 - Gap between rising urban energy demand, available generation capacities and limited investment capital;
 - High losses in the energy systems (e.g. high energy intensity and low demand and supply side efficiency);
- **Climate change concerns**
 - Increasing energy related GHG emissions (new investments determine GHGs for the next 20 - 30 years)
 - Climate change impacts vulnerable West African energy systems (e.g. water flows, extreme weather events)

Energy trends in the ECOWAS region (1)

□ Domestic energy production and supply (statistics)

- Close to 60% of the people in the ECOWAS region live in rural areas
- Where 85%+ of total energy consumed is from traditional biomass which is used unsustainably
- Over 80% households currently depend on biomass energy
- Around 90% of this biomass energy is made of fuelwood (Charcoal and firewood)
- Consumption of these fuels uses inefficient cookstoves with negative consequences on the forest, health of women & children, the environment and food security, water bodies and the economic wellbeing of the people.



Energy trends in the ECOWAS Region (2)

❑ Electric energy generation and supply

Characterised by - heavy reliance on fossil fuels resources (**Oil and gas**)

- ❖ The CO₂ emission from the use of fossil fuel in the 15 ECOWAS member states amounted to 128.8 million tonne CO₂ in 2012;
- ❖ Fossil fuel **used in power generation plants** amounts to 20.7 million tonne in 2012 accounting for about 16% of the total emission;
- ❖ Development based on a long term reliance on fossil resource use if unchecked will present several problems for West African countries:

E.g. Increase emission of GHGs hence climate change and accompanying impacts

- Carbon Lock-in
- Erratic rainfall patterns, droughts, extreme day and night temps,
- Ecosystem degradation including dissipation of local forests and water bodies
- Slow and limited economic growth

Energy Options: (1) Low Carbon Emission Dev't.

LCD will offer a range opportunities

Energy Access:

- Opportunity to 'tap' into global climate funds, which will provide the much needed finances for its development
- Opportunity to utilize vast renewable energy potentials to improve energy access through low-cost and low polluting technologies

Energy security:

- Opportunity to avoid 'locking-in' carbon-intensive technologies into future development.
- Opportunities to diversify the energy mix and reduce dependence on expensive fossil fuels



Energy Options: (2) Domestic energy access

- ❖ The energy transition and climate vulnerability are much more closely connected;
- ❖ Efforts at meeting desired energy access should encompass climate change mitigation and adaptation;
 - non-polluting and highly efficient cook stoves (e.g. ELSA gasifier stoves) and
 - other advanced biomass systems for cooking reduce the need for woody and other biomass (e.g. Bioethanol and Biogas)
 - Use of briquettes, pellets and sustainably produced charcoal (e.g. charcoal from biochar)
 - Adoption of solar home systems e.g. solar lanterns, solar chargers etc.



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Climate vrs Energy Nexus

Climate

- Global climate actions demands GHG mitigation by both developed and developing countries
- There should be transparency in GHG production by undertaking MRV measures
- Stringent Climate Change policies will negatively affect the adoption of climate resilient, low carbon emission energy technologies and projects

Energy

- The principal Millennium Development Goals (MDGs) cannot be met without major improvement in the quality and quantity of energy services in developing countries”
- Energy poverty, however, is hindering development in LDCs and is a recognised barrier to the successful achievement of the Millennium Development Goals.
- Ensuring energy access for those currently without it protects the right to development; every additional kilowatt-hour consumed by poor countries contributes significantly to an increase in human development, especially in those countries with the lowest consumption.
- Large benefits as compared to corresponding emissions from energy generation



Thank You for listening!

12/5/2016