Climate Change and Trade: Implications for Africa

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WDR: Developing countries more vulnerable to climate change

- Developing countries will bear 75-80% of the costs of climate change.
- A 2°C (the minimum likely increase) could lead to reductions of GDP of 4-5% for Africa and South Asia.
- Losses driven by agriculture: given current production practices and crops, agricultural yields predicted to fall by 15% in 2050 in SSA.
- Current financing for adaptation and mitigation is less than 5 percent of what may be needed annually by 2030.
Africa’s contribution to GHG emissions is small.
But Africa will be severely affected by climate change

- Will compound existing developmental challenges (poverty, lack of health care, water, food security, energy scarcity, conflict areas, political instability)
- Damage urban infrastructure and delay efforts to construct/rebuild electricity/energy, transportation, telecom networks; buildings
- Africa more dependent on ecosystems and natural capital for production in climate-sensitive sectors
  - Two-thirds of surface area is desert or dry land
- Rain-fed agriculture contributes > 20 percent of GDP (excluding South Africa)
African countries financially vulnerable to extreme weather events

Africa vs. other regions: Climate vulnerability and social capacity

Africa vs. other regions: Climate vulnerability and capacity to adapt

Impact on Africa’s agriculture

- Water scarcity from droughts and reduced rainfall may lower crop yields by 50% in 2020; net revenues by 90% by 2100
- In many semi-arid and dry zones, the growing period could fall by 5 to 20 per cent by 2050
- Some countries, e.g., Sudan, Nigeria, Somalia, Ethiopia, Zimbabwe, and Chad, could lose their cereal-production potential by 2080
- A projected 2 to 3% reduction in African cereal production by 2030 would increase risk of hunger for an additional 10 million people
- Impacts on grasslands could negatively affect migration routes for cattle and wild animals
- Fisheries and forestry impacted by weather changes
Climate change will depress agricultural yields in Africa

Projections: by 2050, given current agricultural practices and crop varieties

Must raise productivity of agriculture

- Need to increase yields “per drop” as well as per hectare
- Challenge: managing competing demands for land/water from agriculture, forestry, cities, energy
- How? In part by exploiting new techniques and practices
  - Sequester carbon in soil (bio-char/biofuel); reduce nutrient runoff; eco-agriculture; better management of water; zero-tillage; biotech
Increased need for food imports

- Increasing arid conditions and more frequent extreme climate events will increase need to import food

- Thinness of global food markets likely to generate excessive volatility of world prices

- Points to importance of Doha Round and disciplining export restrictions and exploitation of market power

- And to efforts to diversify economies
Impact on transport infrastructure

- Transport infrastructure (port facilities, roads, railways, airports, bridges) risk being damaged from extreme weather conditions (flooding, rising sea levels)
- Shipping routes (existing and availability of new routes) severely affected by rising sea levels
Negative impacts on tourism

- Major impact on ecosystems (especially coastal) and biodiversity
- Hinder ability for long-distance traveling
- Could lead to significant revenue loss for African Countries that depend on tourism and ecotourism.
An unmitigated disaster?

- Mitigation actions to reduce GHG emissions will also have benefits
  - Public health, energy security, environmental sustainability
- In Africa, mitigation linked to more sustainable land and forest management; urban transport systems and cleaner energy
Trade policy responses

- Border carbon adjustments
  - Given low carbon intensity, SSA less affected by potential BCA measures
  - But much depends on what these are based on – if used (e.g., domestic carbon intensity or foreign/imports)

- Carbon labeling

- Standard trade policies
Lower barriers to trade in efficient environmental goods (TTRI vs. OTRI)
Carbon Labeling Schemes

- Numerous different methodologies developed since 2007 to measure carbon emissions from the production of goods
- Could shift consumer preferences and harm developing countries
- Significant knowledge gaps/inconsistencies
  - Emission patterns are highly complex and difficult to document accurately
  - No international standards; lack of consistency in application
  - No agreement how to calculate the amount of carbon emitted during production process
  - Variation in choice of system boundaries: which parts of supply chain are included in the assessment of GHG emissions
Carbon footprint methodologies vary:
GHG emissions from transport of sugar from refinery in Zambia to a port 2000 km away, by truck

Data source: “Carbon Footprints and Food Systems” – Brenton, Jensen and Edwards-Jones, World Bank (Forthcoming)