Towards a Carbon Neutral Manufacturing Sector: The case for Kenyan Firms

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Motivation

- This study builds on the findings of my earlier work - *Clean production and Profitability: An Eco-Efficiency Analysis of Kenyan Manufacturing Firms (Kamande, 2011)*
- The principle findings of this paper are
  - There is a potential gain in the profitability of the firm by improving eco-efficiency in resource use.
  - Commitment based approaches to environmental management yield more financial benefits to firms – This calls for firms to be more proactive in environmental management
  - However, there is also a role for compliance based approaches - This calls for government involvement in policy guidelines and institutional framework (see Kamande, 2010)
- Therefore for African countries to be able to tackle the climate change problem, they have to consider a holistic approach where both the government and private sector play a part in these efforts

Motivation ……..

- For the government, the rationale for involvement is the negative welfare effects that originate from climate change crisis which are well articulated in literature and are also visible in Africa – drought, floods, tsunamis, etc
- For the private sector, the rationale is the financial benefits that accrue from involvement in climate change mitigation efforts. This is an ongoing debate in Africa especially given the fact that the continent only contributes to 3.6% of global emissions.
- For this reasons, most of the climate change mitigation efforts in Africa are directed towards enhancing carbon sinks mainly through afforestation projects.
- Not much has been done to tackle the problem from the carbon source
- Some of the climate change mitigation initiatives at the firm level include promoting biofuels and other renewable sources of fuel as an alternative to fossil fuels that are known to be a major source of carbon emissions.
- These efforts are mainly spearheaded by the government with the private sector not taking a leading role towards energy efficiency

This Study

- One of the mechanisms fronted by the Kyoto Protocol towards climate change mitigation is the Clean Development Mechanism, which generates Certified Emission Reduction credits (CERs) which are then traded in the carbon market.
- CERs may be gained through emissions reduction, such as through investments in renewable energy and energy efficiency.
- The CDM constitutes the largest source of mitigation finance for developing countries to date (World Development Report 2010).
- African countries need to be more proactive in designing more comprehensive climate change programmes and initiatives.
- The growing significance and relevance of the carbon markets in Africa presents an opportunity for African countries to generate incomes both at the national level and firm level by engaging in carbon neutral projects

This Study........

- According to CDM rules, any project that qualifies for CERs must meet the Additionality requirement - the GHG emissions after implementation of a CDM project activity are lower than those that would have occurred in the most plausible alternative scenario to the implementation of the CDM project activity (Baker & McKenzie, 2011).
- For firms to benefit from carbon markets, the starting point is to be able to quantify and monitor their own carbon footprints.
- This study focuses on how to quantify carbon footprints from energy inputs.
- The use of renewable sources of energy can help firms to reduce their carbon footprints and in this way they will be able to earn CERs which can then be traded in the carbon market
- This is a pilot project that seeks to assess the level of knowledge of the carbon market among Kenyan firms and suggest a way in which firms can quantify and monitor their carbon footprints – a life cycle assessment

This study.......

- The study proposes to carry out a software based life cycle energy assessment of a selected firm which will be selected after the first phase of interviews that assesses the knowledge of carbon markets among firms.
- In this pilot study, the firms that are interviewed are those that have enrolled with the Kenya National Clean Production Centre
- The expected outcomes of the study include
  - The study provides a way of assessing the net effect of firms in the carbon cycle which can be used to assess projects to qualify for CERs
  - The study demonstrates how the government can construct a carbon emission inventory and eventually an input-output table for carbon emissions to be used in CGE analysis
  - The study will act as a baseline study which can be extended to other firms and other industries.

Thank you