



STATUS OF BIOENERGY DEVELOPMENT IN AFRICA: HARNESSING THE POTENTIAL

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Introduction

- Traditional bioenergy sources are an important source of energy in Africa, especially in rural areas
- Most households depend on bioenergy for cooking & space heating
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Introduction

- In the transport sector, fossil fuels continue to be a pivot of economic and social development of all countries around the world
- However, there is on-going debate on use of fossil around three main facets
 - Soaring fossil prices especially following two oil price hikes in the 1970s
 - Increased environmental concerns (GHG emission) and air pollution due to the burning of fossil fuels.
 - Insecurity and Instability of local fuel supplies

Crisis in local fuel supplies



Fuel shortages in most pump stations

Biofuels Development

- Modern bioenergy including biofuels are considered as an alternative to traditional fossil fuels.
- There has been expansion in biofuels production over the past years worldwide
- For example, about 15 percent of global corn production (mostly in the US) or about 5.7 percent of total global corn and coarse grain production was used for ethanol production in 2008 (2013 HELPE Report)
- About 10 percent of global vegetable oil production (mostly in the EU) went to make biodiesel, and 18 percent of sugar cane (mostly in Brazil) went to make ethanol fuel (2013 HELPE Report)



Bioenergy Developments in Southern & Eastern Africa

- In Africa, Malawi is “the only African country that has consistently used liquid biofuels for transport for an extended period – since ’82” (SEI, 2013)





Bioenergy Developments in Southern & Eastern Africa

- Another ethanol-producing plant (Press Cane) is at Nchalo in Chikwawa.
- Current production is 11.8 million litres of ethanol per year
- Each facility has a potential capacity of 16-18 million litres per year.
- But operates 6 months per year at half the installed capacity
- Uses C-molasses as a by-product from sugar processing
- Primary uses: Blending with petrol currently at 20%, pharmaceuticals and spirits
- A new plant is on cards to install another processing plant for sugar and ethanol production



Biodiesel Initiatives in Malawi

- **JANEEMO project supported by Climate Futures**
- The name, JANEEMO is an acronym of the three species that the project is supporting namely Jatropha, Neem and Moringa.
 - Farmers are encouraged to grow these on marginal lands and as living fences around households and fields.
 - The communities generate income through carbon financing.
- TNT, WFP & local Malawian partner Bio energy Resources Ltd are encouraging smallholder farmers to grow Jatropha on marginal lands and living fences around households and fields



Bioenergy Developments in Southern & Eastern Africa

- In Zambia, biofuel initiatives are being championed by the private sector
- There are a number of biofuels projects around the country mainly focusing on Jatropha
- In Tanzania, the biofuels projects are spearheaded by local and international NGOs who are promoting Jatropha production to stimulate rural development
 - Employment creation in the supply of feedstock
 - Provision of electricity in rural areas through multifunctional platforms



The Future of Bioenergy Development in Africa

- In less than one decade, world biofuel production has increased from less than 20 billion litres/year in 2001 to over 100 billion litres/year in 2011 (2913 HLPE Report).
- This trend is likely to continue in the next coming decades of which Africa is a potential source of feedstock
- A number of foreign investors are securing land rights in Africa to grow energy crops



The Future of Bioenergy Development in Africa

- According to FAO production of 100 billion litres would represent an equivalent of 20.4 million ha of sugar cane, or 38.5 million ha of corn, or, if it were biodiesel, 58.8 million ha of rapeseed (HELPE Report (2013) .
- This compares with 1,396 million ha of arable lands worldwide in 2011 (FAOSTAT, 2013).
- It is projected that 4m sq km of land will be grown to energy crops in Southern Africa region over the coming decades.



The Cost of Inaction

The “Wait and see” policy may lead to

- **Food insecurity as more land will be taken away from mainstream agriculture for growing of energy crops**
- **Damage to environment & loss of biodiversity** through clearing of forests and/or encroachment of protected areas for biofuels
- Missing out on economic benefits where biofuels are feasible
 - Direct and indirect employment opportunities
 - Joint venture & shareholding investment opportunities
 - Relief on fuel import bill (blending fossil fuels)
 - Rural development such as clean energy supply to rural families



The Way Forward

- As biofuels are expanding rapidly in Africa, African Governments must take a proactive approach to develop appropriate policies, strategies & regulatory frameworks
- **Research** is needed to
 - Better understand the direct and indirect impacts of biofuels development on the people and environment
 - Assess technical and economic feasibility of biofuels investments/development
- **Policy development**
 - Each country must develop country-specific policies and guidelines for the sector's development



Take Home Message

- *“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change.”*

Charles Darwin (1809–1882) from “On the Origin of Species” (1859).



■ **Thank you for your
attention!**

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