

**TOWARDS A SADC FUEL  
ETHANOL MARKET FROM  
SUGARCANE:  
REGULATORY  
CONSTRAINTS AND A  
MODEL FOR REGIONAL  
SECTORAL INTEGRATION**

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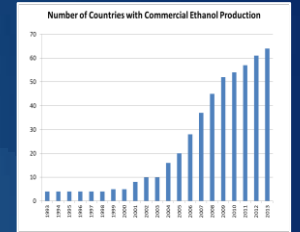
# Presentation overview

- ▶ What's happening globally with fuel ethanol?
- ▶ Why develop a regional fuel ethanol market?
- ▶ Why choose sugarcane as the primary feedstock?
- ▶ Key constraints to the development of a SADC fuel ethanol market
- ▶ What initial actions can make it a reality?



# What's happening globally with fuel ethanol?

- ▶ World consumption of gasoline/petrol current 1.3 trillion litres, could rise to 1.4 trillion litres by 2020
- ▶ Fuel ethanol estimated worldwide average blending rate of around 6% in 2013, could rise to 11% by 2020
- ▶ Feedstock in 2012: sugarcane 59%, grains 33%, other (sugar beet, whey, raw alcohol, cassava chips) 8%
- ▶ Cellulosic biofuels (grasses etc) still impractical
- ▶ Commercial production, 60 countries in 2013



# What's happening globally with fuel ethanol, continued...

- ▶ Key producers: Brazil, Canada, China, the EU and the USA. Key consumers: USA & Brazil. Mauritius best SADC example
- ▶ Oil companies investing: BP \$750 mln in Brazil alone
- ▶ Flex-fuel engine technology, up to 100% ethanol. 3.1 mln vehicles in Brazil
- ▶ Sub-Saharan African (SSA) production is 0.2% of world
- ▶ Ethanol use as cooking gel could equal fuel use in SSA by 2020, reducing deforestation



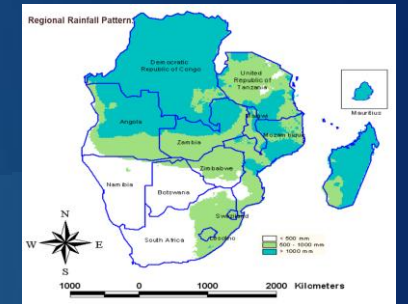
# What's happening globally with fuel ethanol, continued...

Country	Blend rate
Malawi	20%
Mozambique	10%
South Africa	2–10%
Swaziland	10%
Tanzania	Possible 10% blend by 2030
Zambia	10%
Zimbabwe	5%



# Why develop a regional fuel ethanol market?

- ▶ SADC region highly dependent on fuel importation
- ▶ Small fuel markets, little alternative. Expensive to refine
- ▶ Between 50 - 60% of new SADC petrol needs over the next 18-20 years, could be met using 3 – 6% of cropland (SADC has more cropland than Brazil)
- ▶ 3 mln direct jobs (1.8mln permanent), 4 mln indirect jobs
- ▶ R70 billion per annum added to the SADC rural economy
- ▶ Ethanol is multifaceted, bio-chemicals, gel, bio-plastics



# Why develop a regional fuel ethanol market, continued...

- ▶ Massive investment in large scale industrialisation & beneficiation. R20-30 bln in South Africa alone
- ▶ Large scale agri-business creation, trigger for other sectors. Related large scale training in farming skills
- ▶ Significant reduction in regional carbon emissions
- ▶ Market integration: large SA fuel market, small supply + small other SADC national markets with large supply potential
- ▶ Reduced regional SA trade deficit & SADC fuel import bill



# Why choose sugarcane as the primary feedstock?

- ▶ Sugarcane > energy efficient than palm oil, sorghum, jatropha
- ▶ Ethanol from cane has lower capital cost requirement than fuel from an oil refinery fuel or gas-to-liquids plant
- ▶ Regional industry well established: competitive large scale sugarcane & sugar production + existing ethanol production
- ▶ Logistics of sugarcane production = rural mill location
- ▶ Highly competitive & some established access to finance





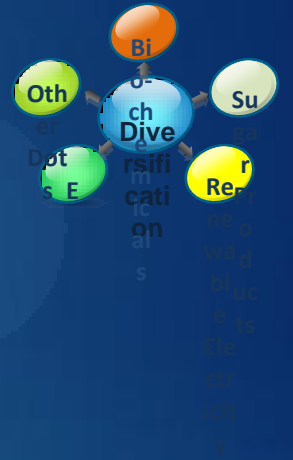
# Why choose sugarcane as the primary feedstock, continued...

- ▶ Most highly integrated agricultural sector in SADC
- ▶ Unique institutional framework
- ▶ Only SADC commodity group with a regional regulatory trade framework (Annex VII to the Protocol on Trade)
- ▶ Private-public (+SADC Secretariat) collaboration in Technical Committee on Sugar (TCS), which reports to the SADC Trade Negotiating Forum, and thereby to SADC Trade Ministers



# Why choose sugarcane as the primary feedstock, continued...

- ▶ Annex VII & SADC Regional Sugar Strategy & Action Plan, capable of expansion to include ethanol
- ▶ Significant established research and training capacity, largest in continent
- ▶ Diversification underway as part of global trend to bio-energy complex (sugar, ethanol and electricity) + next stage: bio-chemicals, bio-plastics, polymers, bio-solvents & alcohol
- ▶ 8000 – 10000 MW electricity could be generated in SADC



# Key constraints to the development of a SADC fuel ethanol market

- ▶ Key constraint is regulatory uncertainty
- ▶ Regulatory framework is prerequisite for investment:
  - Companies won't even undertake feasibility studies with certainty provided by blending mandates and pricing
  - Entrenched interests in domestic fuel markets; often necessitates regulation
- ▶ E.g. SA – Biofuels Strategy 2002, but investor interest only seen after blending regulations in 2012



# Key constraints to the development of a SADC fuel ethanol market, continued...

- ▶ Failure of SA market to develop as anchor market
- ▶ National versus regional market prioritisation:
  - Domestic market focus would delay economies of scale
  - Would delay regional policy harmonisation
- ▶ Access to finance: region capital markets are illiquid & cost of borrowing high. Would require PPPs & renewable energy development agencies + FDI (SA, Brazil, Mauritius?)



# What initial actions can make it a reality?

- ▶ Regulation at national level (blending mandates, pricing arrangements). SA agrees to be anchor market
- ▶ Establish renewable energy development agencies
- ▶ Regional database of best regulatory practice
- ▶ Inclusion of ethanol in regional institutional frameworks
- ▶ Regional technical taskforce to tackle technical constraints
- ▶ Use of carbon emission reduction funding



Thank you!

