

*Selected Results from the Thematic Research Network:  
Cane Resources Network for Southern Africa  
(CARENDA)*

Kick-off Meeting, 1-2 March 2007  
*Competence Platform on Energy Crop and Agroforestry  
Systems for Arid and Semi-arid Ecosystems – Africa  
(COMPETE)*

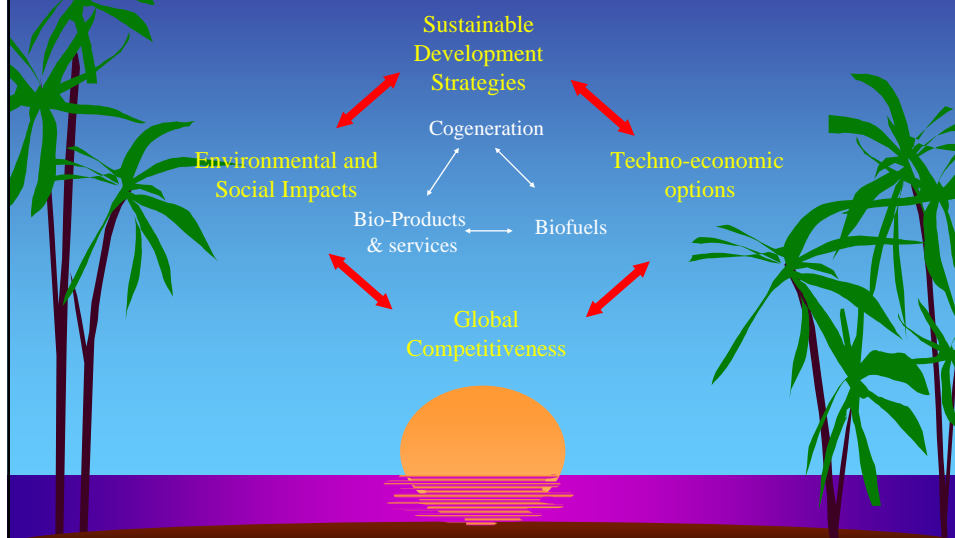
Francis X. Johnson, Research Fellow, Energy and Climate  
Stockholm Environment Institute

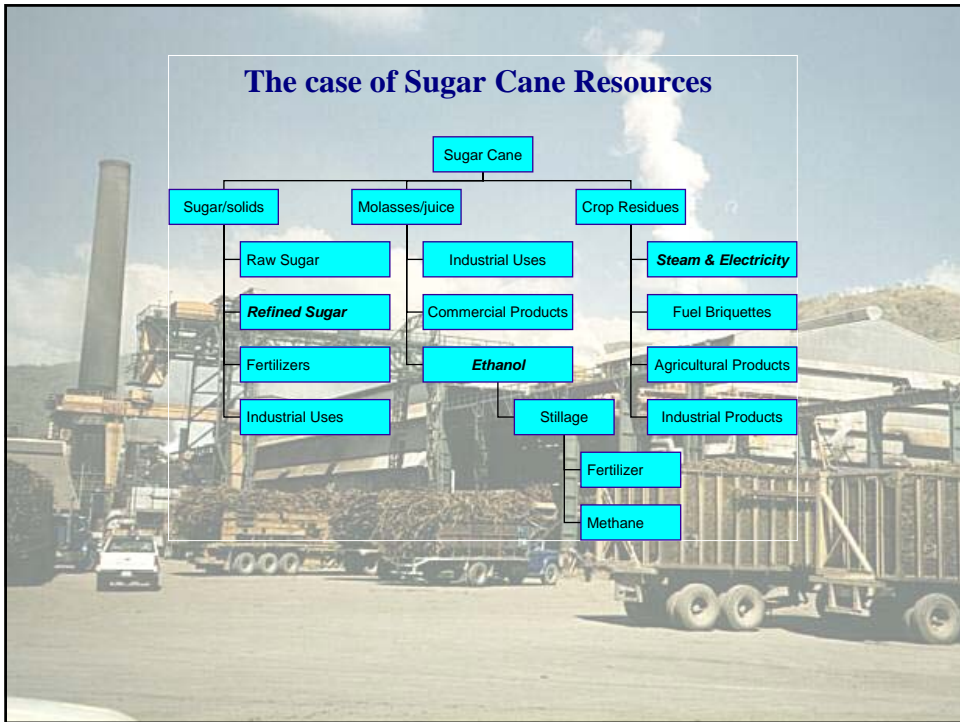
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EUROPEAN COMMISSION  
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Multi-product, multi-sector strategies  
to promote sustainable development  
and enhance global competitiveness

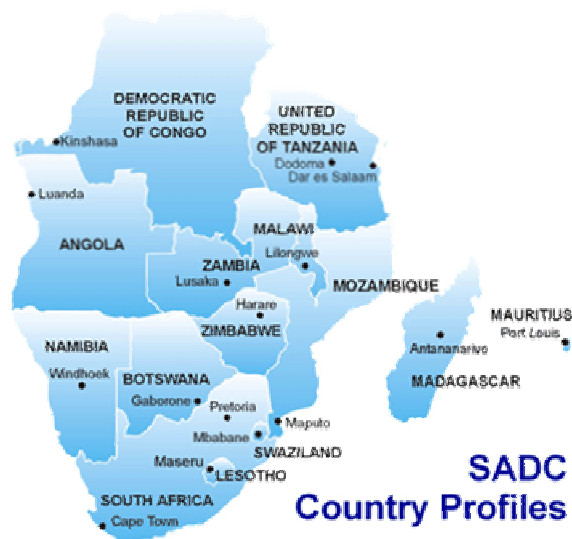




## Components of Work Programme

<p><b><u>Agriculture</u></b></p> <p>Agronomy &amp; Land Resources Harvesting and Delivery</p>	<p><b><u>Industry</u></b></p> <p>Process Systems Analysis Fibre Resources Sugar Resources</p>
<p><b><u>Integration</u></b></p> <p>Risk Analysis &amp; Competitiveness Sustainable Development International Experiences Industry Perspectives</p>	
<p><b><u>Markets and Policies</u></b></p> <p>Policies and Regulations Trade, Financing, &amp; Investment Implementation and Strategies</p>	<p><b><u>Impacts</u></b></p> <p>Socio-economic Impacts Environmental Impacts</p>

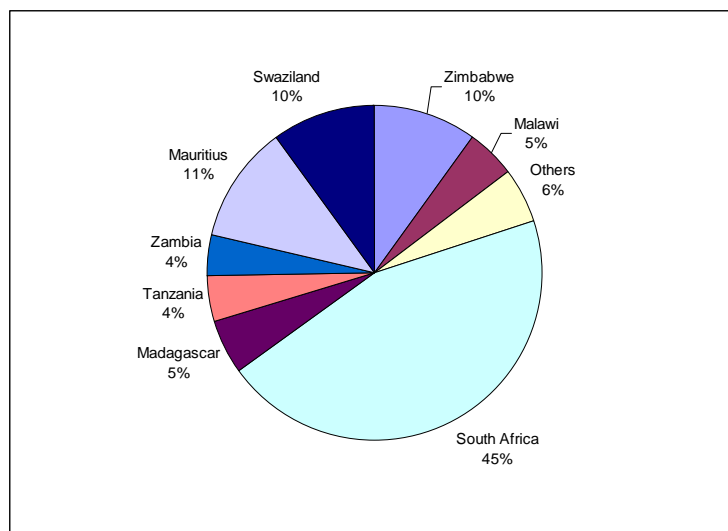
## Southern African Development Community (SADC)



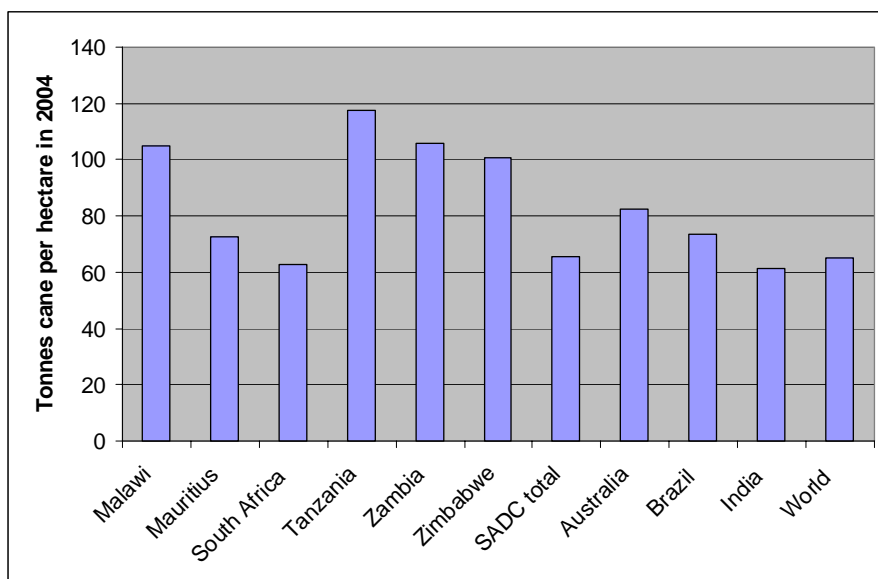
## Land Use Summary for SADC and other selected countries/regions

Country/Region	Total Land Area	Forest Area		Agricultural Areas		Cultivated Area	
	Million ha	Million ha	share of total land area	Million ha	share of total land area	Million ha	share of total land area
<b>UNITS:</b>							
<b>Total SADC</b>	<b>964</b>	<b>368</b>	<b>38%</b>	<b>433</b>	<b>45%</b>	<b>53</b>	<b>5,5%</b>
Brazil	846	544	64%	264	31%	67	7,9%
China	933	163	18%	555	59%	155	16,6%
India	297	64	22%	181	61%	170	57,1%
United States	916	226	25%	409	45%	176	19,2%
EU-15	313	116	37%	140	45%	85	27,0%

## Shares of SADC sugarcane production, 2004



## High crop productivity in some SADC countries



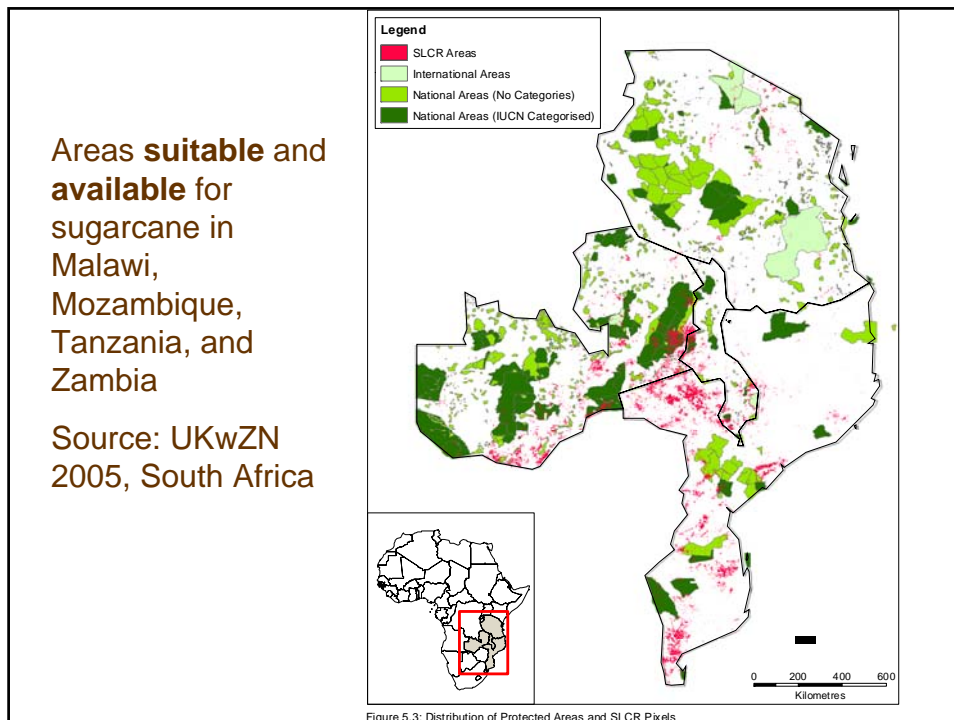
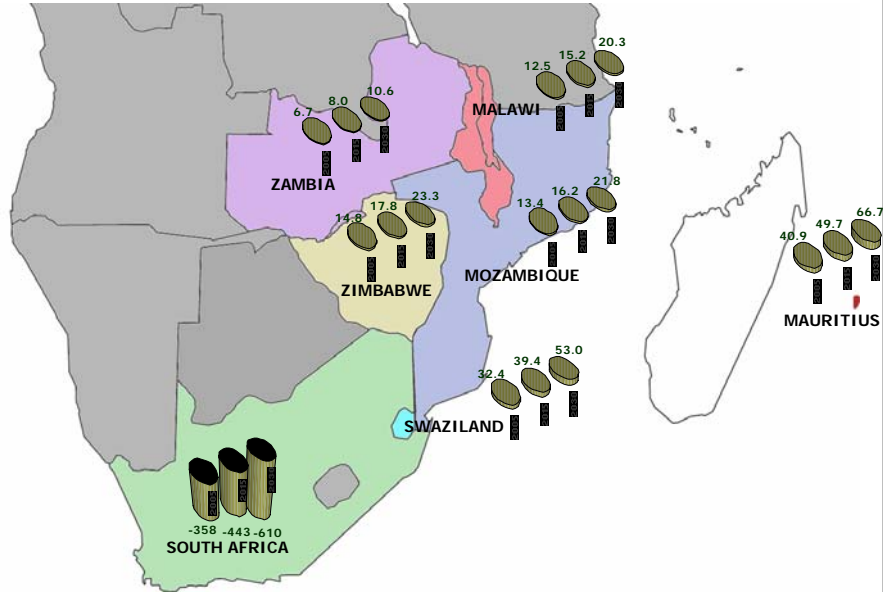


Figure 5.3: Distribution of Protected Areas and SLCR Pixels

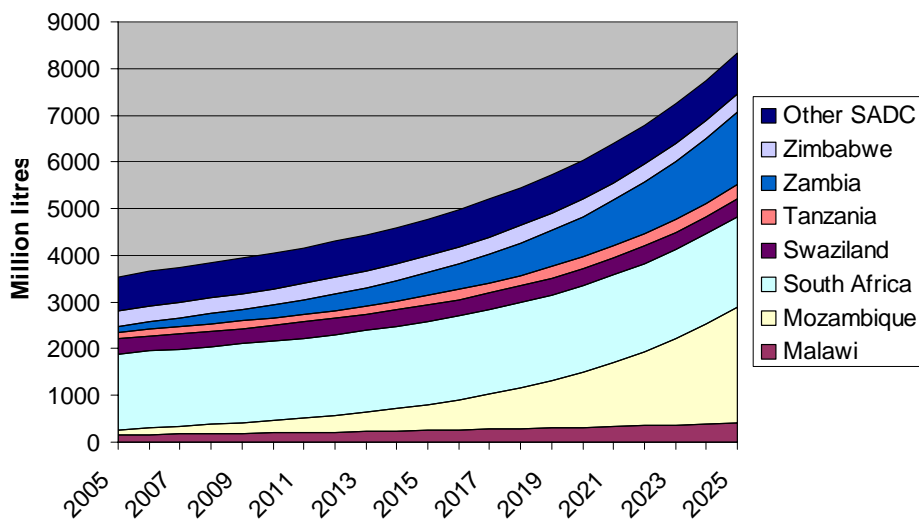
### Estimated Potential Surplus for Bagasse Cogeneration for various configurations

Country	Total TC crushed annually x 10 <sup>6</sup>	Power @ 20 bar 325°C (GWh)	Power @ 31 bar & 440°C (GWh)	Power @ 45 bar & 440°C (GWh)	Power @ 82 bar & 525°C (GWh)
Angola	0.360	9.0	16.2	27.0	46.8
DR Congo	1.669	41.7	75.1	125.2	217.0
Malawi	1.796	44.9	80.8	134.7	233.5
Mauritius	5.800	145.0	261.0	435.0	754.0
Mozambique	0.397	9.9	17.9	29.8	51.6
South Africa	22.103	552.6	994.6	1657.7	2873.4
Swaziland	4.103	102.6	184.6	307.7	533.4
Tanzania	1.289	32.2	58.0	96.7	167.6
Zambia	1.600	40.0	72.0	120.0	208.0
Zimbabwe	4.535	113.4	204.1	340.1	589.6
<b>Total/Avg.</b>	<b>43.652</b>	<b>1091</b>	<b>1964</b>	<b>3274</b>	<b>5675</b>

**Existing Factories: Ethanol Surpluses/deficits with Production from C-molasses only and E5 Ethanol Demand (million litres)**



**Scenarios for Ethanol production from cane**



## Cane Resources Network for Southern Africa (CARENSA)

**Funding:** European Commission Fifth Framework Research Programme (EC FP5)



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SEI, Stockholm Environment Institute (SCIENTIFIC COORDINATOR)  
IC, Imperial College Centre for Energy Policy and Technology, UK  
UM, University of Mauritius, Chemical and Sugar Eng. Dept.  
UND, University of Natal, Durban, South Africa  
AUA, Agricultural University of Athens, Greece  
CIRPS, Interuniversity Research Centre on Sustainable Development, Italy  
BUN, Biomass Users Network, Zimbabwe  
CEEEZ, Centre for Energy, Environment, and Engineering, Zambia  
ISO, International Sugar Organisation  
FAO, Food and Agricultural Organisation (FAO), United Nations  
WII, Winrock International India  
CENBIO, National Reference Centre for Biomass, Brazil  
UNICAMP, University of Campinas  
SADC, Southern African Development Community

## Thanks to:

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and our International Partners - for their hard work



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