

Cane Resources Network for Southern Africa

*Presentation at the joint workshop
Durban, South Africa
19-21 August 2002*



EUROPEAN COMMISSION
Research Directorate-General



Overview of Presentation

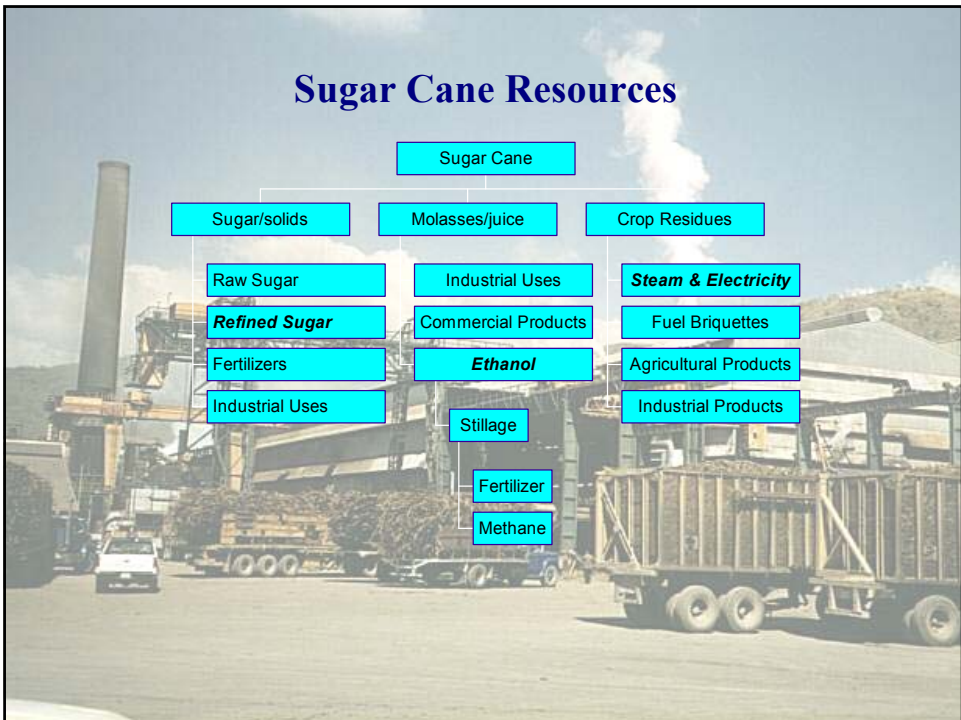
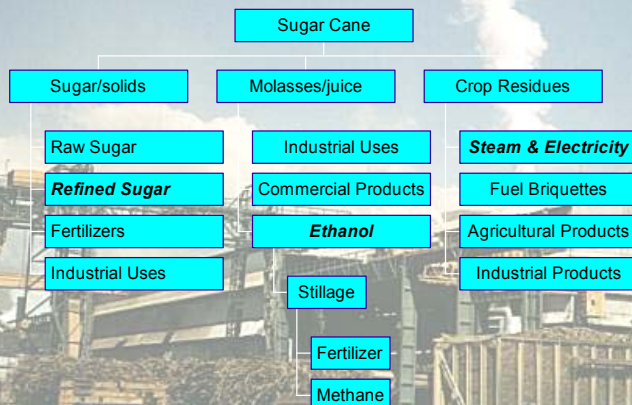
- Why bioenergy from sugarcane?
- Cane Resources
- The SADC region
- Objectives of CARENESA
- Project Components
- Agriculture
- Industry
- Markets and Policies
- Integrating Issues
- Potential Driving Forces in southern Africa
- Building Partnerships

Why bioenergy from sugarcane?

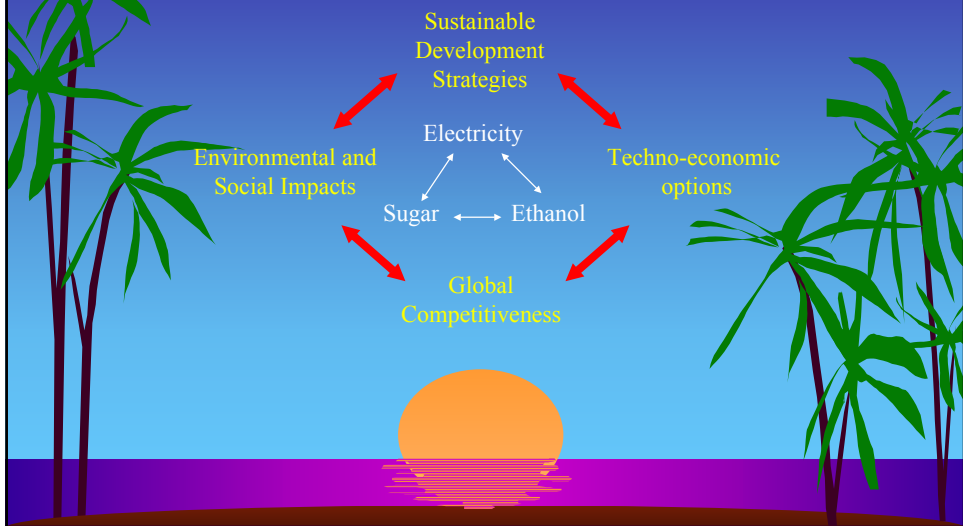
- Cane is a highly efficient converter of solar energy
- Excellent energy balance for ethanol production
- A resource found mainly in developing countries
- Mature industry in need of diversification
- International agro-industry, well-established in Africa
- Potential for surplus electricity production using bagasse & cane trash
- An economically flexible multi-commodity resource
- Economic development for rural areas
- Improved air quality in urban areas (via ethanol substitution)
- A renewable, low-polluting sustainable resource
- Contributes to Climate Change mitigation strategies
- Potential for North-South and South-South cooperation



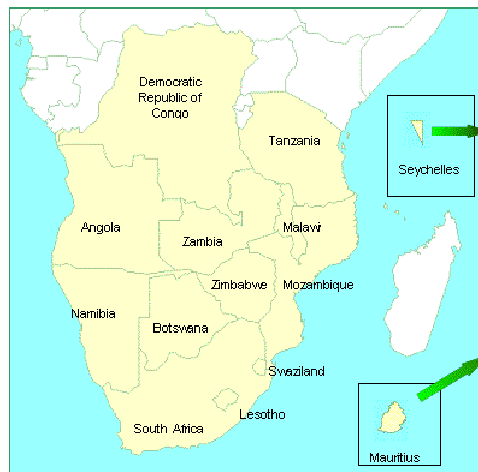
Sugar Cane Resources



Multi-product strategies to promote sustainable development and enhance global competitiveness



Southern African Development Community (SADC)



Production and Harvest in SADC Countries, 2000

Country	Production 1000 tc	Area 1000 ha	Avg. Yield tc/ha
Angola	360	10	38
DR Congo	1669	36	46
Malawi	2000	19	105
Mauritius	5109	73	70
Mozambique	397	27	15
South Africa	23896	322	74
Swaziland	3885	37	106
Tanzania	1355	15	90
Zambia	1600	15	107
Zimbabwe	4228	43	98
SADC Total	44498	596	75
<i>World Total</i>	<i>1,258,531</i>	<i>19,186</i>	<i>66</i>
	3.5%	3.1%	

Objectives of CARENSA

- Compare current and potential cane resource use in southern Africa
- Develop benchmarks for system inputs, production, and performance
- Improve competitiveness through multi-purpose production strategies
- Capacity-building and technology transfer for SADC region
- Promote south-south co-operation with key producers (Brazil, India)
- Characterise policy environment and identify incentive schemes
- Compare socio-economic and environmental impacts across scenarios
- Identify implementation strategies and sources of support (CDM)
- Evaluate co-product strategies with financial and sustainability criteria
- Provide a regional global forum for discussion and exchange

Project Components

Agriculture

Agronomy & Land Resources
Harvesting and Delivery

Industry

Process Systems Analysis
Fibre Resources
Sugar Resources

Dissemination

Conference participation
Newsletter
Website
Discussion Forum

Markets and Policies

Policies and Regulations
Trade, Financing, & Investment
Implementation and Strategies

Impacts

Socio-economic Impacts
Environmental Impacts

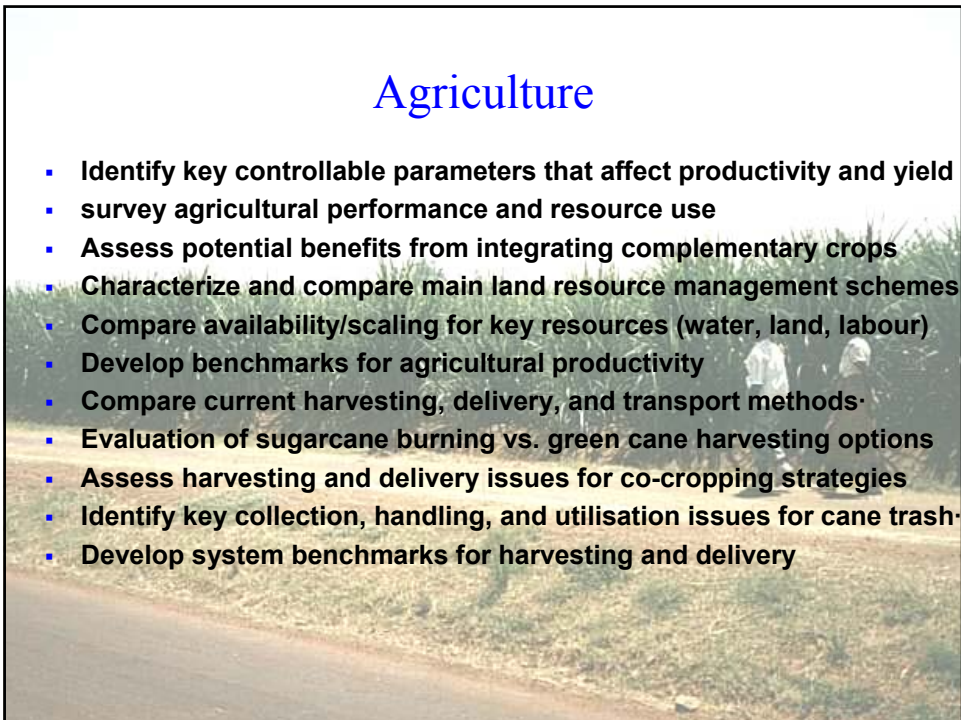
Integration

Risk Analysis & Competitiveness
Sustainable Development
International Experiences
Industry Perspectives



Agriculture

- Identify key controllable parameters that affect productivity and yield
- survey agricultural performance and resource use
- Assess potential benefits from integrating complementary crops
- Characterize and compare main land resource management schemes
- Compare availability/scaling for key resources (water, land, labour)
- Develop benchmarks for agricultural productivity
- Compare current harvesting, delivery, and transport methods
- Evaluation of sugarcane burning vs. green cane harvesting options
- Assess harvesting and delivery issues for co-cropping strategies
- Identify key collection, handling, and utilisation issues for cane trash
- Develop system benchmarks for harvesting and delivery



Factory and co-products

- Identify key issues and choices with respect to juice-fibre separation
- Characterise cost-effective co-generation plant options
- Evaluate primary resources/inputs (water, energy, labour, capital)
- Identify major industrial co-product opportunities
- Develop energy performance benchmarks for co-generation options
- Synthesis of cost-efficiency curves for main design alternatives
- Scale and cost comparisons for alternative distillery configurations
- Comparison of alternative feedstocks for ethanol production
- Outline options for stillage disposal & biogas generation

Markets and Policies

- Review status and outlook for sugar markets and quotas
- Overview of existing and potential co-product markets
- Overview of national regulations and policies
- Characterise the main relevant trade agreements and regulations
- Identify and compare main sources of project financing
- Sketch role of major international partners and channels (e.g. CDM)
- Compare alternative co-product strategies from investment perspective
- Identify key market barriers to co-product strategies
- Assess linkages for product distribution and transportation channels
- Assess network for regional flow of final and intermediate goods

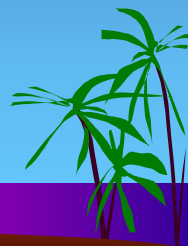
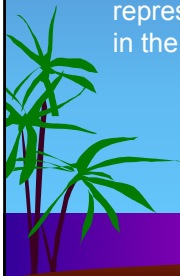
Social and Environmental Impacts

- * Identify primary and secondary socio-economic impacts
- * Develop a matrix of co-product strategies and socio-economic impacts
- * Compare existing technology configurations with best-practice
- * Assess gender impacts of changes in production and use of cane resources
- * Identify the major environmental impacts of alternative co-product strategies
- * Assess local, national, regional, global environmental consequences of changes in cane resource use
- * Compare impacts for existing and best-practice system/technology configurations in the region
- * Provide an estimate of CO₂ reduction-potential for co-product scenarios
- * Illustrate how cane co-products address sustainability issues
- * Show how cane co-products could support energy and development goals in southern Africa



Integrating Issues

- Design a simple tool to demonstrate the role of cane co-products as a risk reduction strategy
- Apply this tool for key regional parameters and scenarios
- Assess contribution of cane co-product strategies to improved global competitiveness for sugar industry and its affiliated industries
- Synthesise international information, particularly from Brazil and India and place cane resources in a comparative international context
- Solicit views and insights from industry experts and industry representatives concerning the key barriers that need to be addressed in the region.



Potential driving forces in southern Africa

- rural development / economics
- Population/resource pressures
- energy security
- health (get rid of lead / MTBE)
- future competitiveness of the sugar industry
- Climate Change – investment opportunities through CDM
- Dependence on fossil fuels in increasingly volatile market

