

# Knowledge based bioeconomy (KBBE)



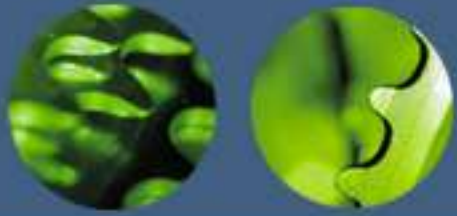
*SACCESS side event to the SA-EU Summit  
19 September 2012, Brussels*

*Mamohloding Tlhagale  
Department of Science and Technology*



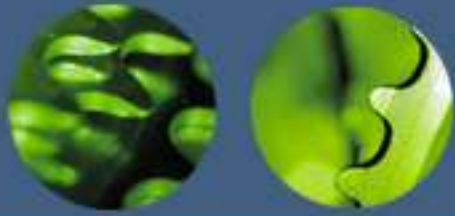
science  
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Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA

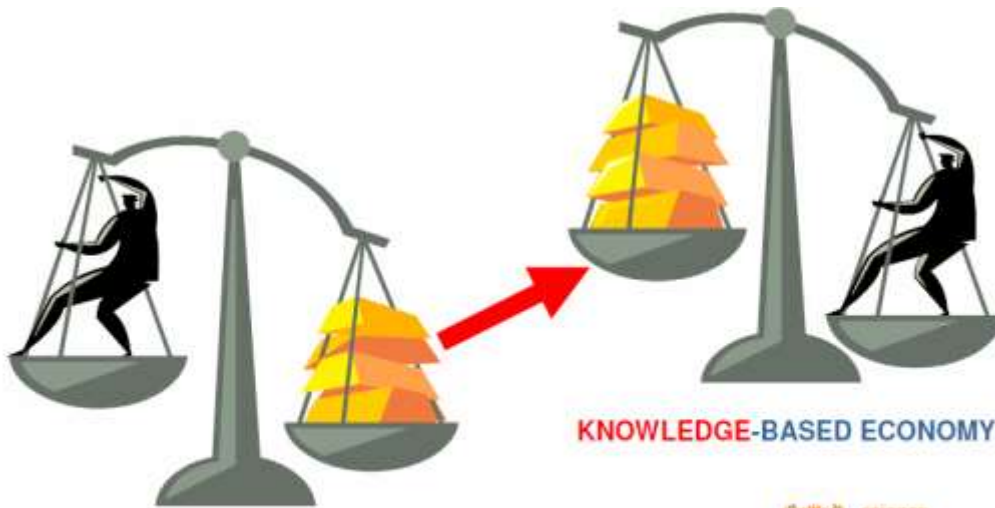


## **Bio-economy Partnerships**

- ❑ Bio-economy strategy –enrich the potential for South Africa – EU policy exchange
- ❑ Comparative South African research strengths in industrial biotechnology of potential interest to EU
- ❑ South Africa committed to KBBE international research cooperation

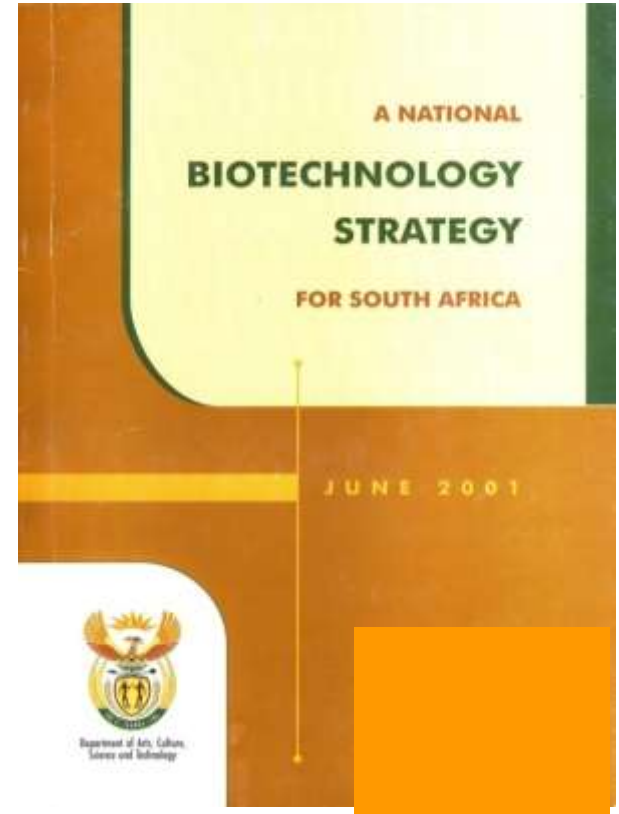


# South Africa's road to bio-economy



RESOURCE-BASED ECONOMY

KNOWLEDGE-BASED ECONOMY

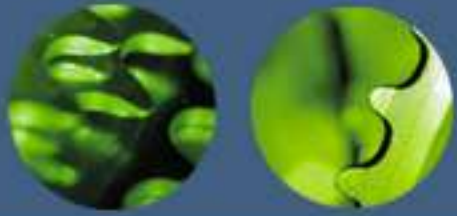


A NATIONAL  
**BIOTECHNOLOGY  
STRATEGY**  
FOR SOUTH AFRICA

JUNE 2001

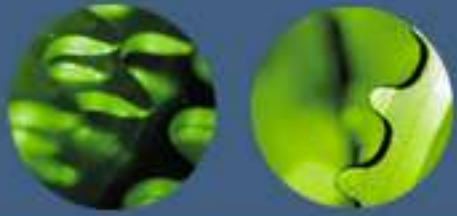


Department of Arts, Culture,  
Science and Technology



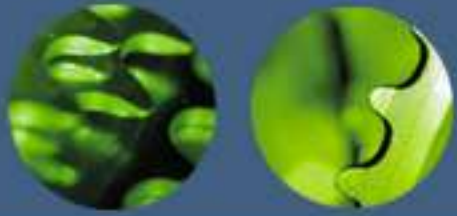
## Goals of the Bio-economy

- ❑ Addressing health challenges: HIV/AIDS, TB, malaria
- ❑ Food and nutrition security for all
- ❑ Clean water
- ❑ Clean renewable energy: reduced reliance on fossil fuels
- ❑ Economic shift from resource-based to knowledge-based economy
- ❑ Sustainable resource management, protection of biodiversity



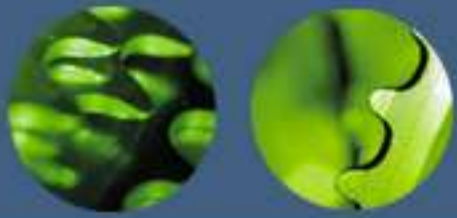
## **Greening the industry – South African priorities**

- ❑ Beneficiation of biomass “waste” as renewable feedstock
- ❑ Biofuels and Biorefineries
- ❑ Biocatalyst function and optimisation
- ❑ Biodegradable material



## South African research strengths

- ❑ Bio-remediation of wastewater
- ❑ Bio-composites for automotive industry
- ❑ Unique bio-prospecting for enzymes – e.g. as a result of deep-mining
- ❑ Bio-design initiative
  - ❑ Bioinformatics
  - ❑ Synthetic biology
- ❑ Bio-leaching for extracting copper and gold

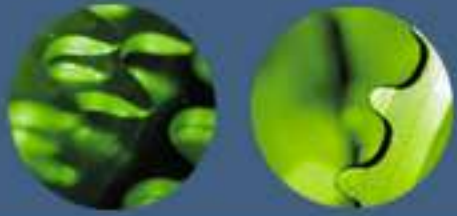


# South African Bio-Design Initiative (SABDI)

- **Key focus areas:** Synthetic and Structural biology, Functional Genomics

## Impact:

- Human health - design of intelligent drug delivery
- Development of environmental reclamation solutions through engineered microbes
- Food and water security
- Improving industry competitiveness



# Agriculture

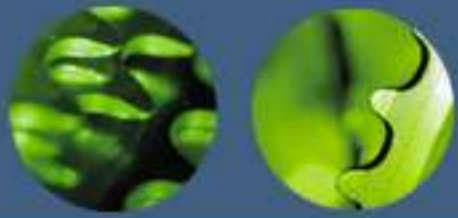
## *Objective*

- To strengthen the agricultural biosciences research, development and innovation capability to ensure food security, enhance nutrition and improve health and enable job creation

## *Interventions*

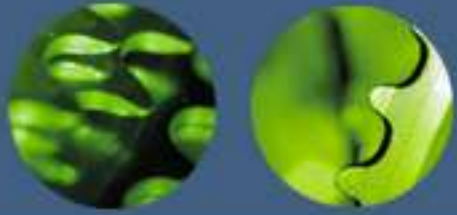
- Develop collaborative RDI programmes aimed at crop improvement both for biotic and abiotic considerations and adaptation to changing environmental conditions





## Interventions cont.

- Consolidate and enhance RDI initiatives aimed at the production of energy crops
- Strengthen the animal health vaccine/biologics capabilities of the country
- Develop a significant Agro-Innovation Hub through partnerships with selected institutions and leading countries that becomes the leading institution for Agro innovation in South Africa



**Thank you**

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