



Solidarity

Equality

Sustainability

G20 Initiative on Bioeconomy

Session 3: Bioeconomy Development in the Global South: A Focus on Africa

Introduction to bioeconomy approach in SA

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SA context

- **New democracy** (with a troubled past)
- Population over 63million [Statssa](#)
- **Key economic sectors:** Mining, transport, energy, manufacturing, tourism and agriculture
- **GDP growth rate:** 0,7% annual change (2023) [World Bank](#)
- **Unemployment** 31.9% (youth -aged 15-34 years- 45,5%) [Statssa](#)
- One of the most **unequal** countries in the world (Gini ~0.67) [World Bank](#)
 - One of the most bio-diverse countries
 - **CO2 emissions per capita:** 6,49 metric tons [World Bank](#)

SA's Bioeconomy approach

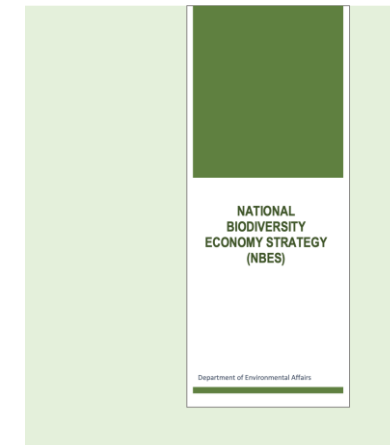
Biotechnology Strategy
2001 – evolved into
Bioeconomy Strategy
2013 - DSTI

Science & Tech -focused
approach, covering nature-
intensive, advanced & high-
tech bioeconomies



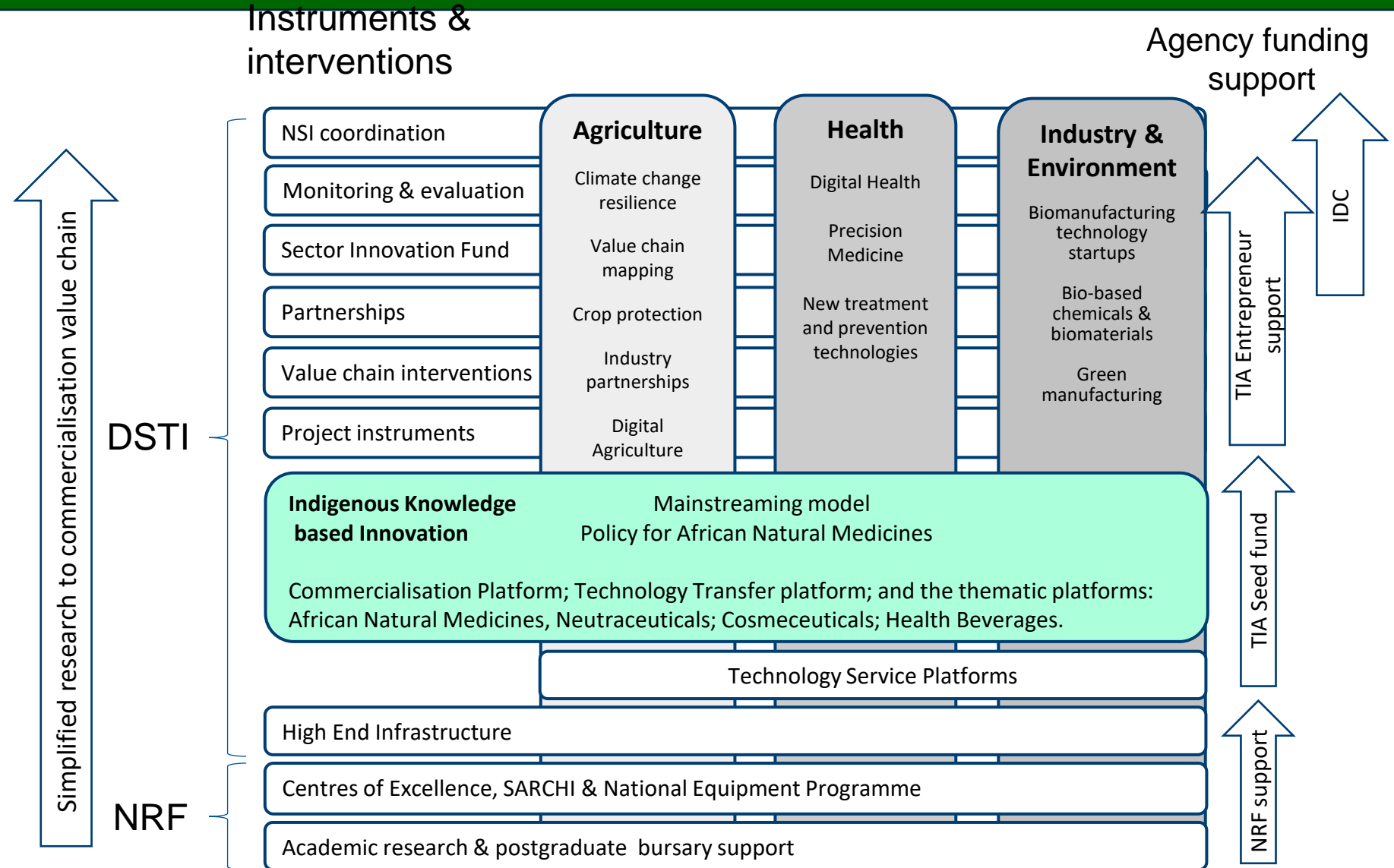
**National Biodiversity
Economy Strategy**
2016 - DFFE

Nature Intensive
Bioeconomy



National Bioeconomy Strategy

Based on the power of the technology to create solutions, products, jobs & SMMEs



Citrus is largest agric export in SA: 164 million 15kg cartons of citrus in 2022, 140 000 jobs, room to expand.



FCM is a phytosanitary pest of citrus. In 2007, **TIA** & partners established the company XSit (Pty) Ltd in Citrusdal, Western Cape to develop the Sterile Insect Technique (SIT) for the FCM.

Over the years the company has grown the amount of hectares being serviced from 1500 ha (2008/9) to over 18,000 hectares of orchards today.

- In 2012 XSit reported revenue at R13.4 million
- As at 2021, revenue figures reported were R70M, a growth of well over 300%
- Staff compliment grew from 3 to 25 employees by 2021.

(secondary benefits – industry exports maintained and jobs secured for the citrus industry)

Indigenous Knowledge - based Technology Innovation

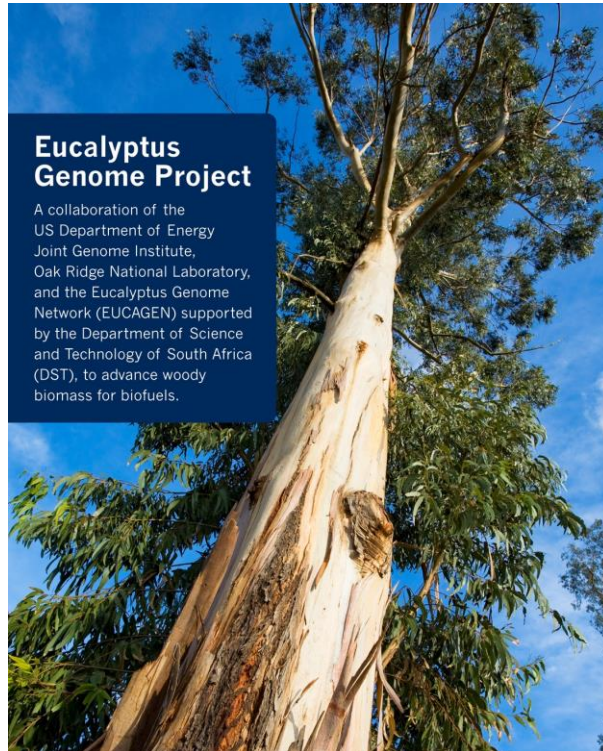
- 55 Small, Medium Micro Enterprises/Co-Operatives
- Nine Agri- Businesses
- Over 120 Prototypes, Products and Services
- Four New cGMP Manufacturing Facilities



Natural Health Products with an Afrikan Story

Some examples:

Eucalyptus Genome Programme (UP)



- Led consortium that sequenced the Eucalyptus Genome.
- Identification of genetic markers for desirable traits, which speeds-up, and allows for more accurate, breeding.
- Industry estimates that the benefits of Marker Assisted Breeding over conventional breeding will save R81million over 15yrs per 30 000 ha.
- Translated to the 1.2million ha total plantation in SA: equates to a potential saving of R3.4billion over 15 yrs.

The **Centre for Proteomic and Genomic Research (CPGR)** was established in 2006 as a DSTI initiative. The CPGR is one of Africa's first fully integrated "omics: service provider with the ability to conduct information-rich biomedical research on a globally competitive level.

Capabilities: Next-Generation Sequencing; Microarrays; High-throughput PCR; Mass Spectrometry; Automated workflows

- Over 1800 projects have been registered and 800 completed (with number of samples being approx. 20 000 per year) for various researchers in South Africa, across Africa, and abroad.
- Leveraged funding of approximately R262 million (public and private).
- **Employed over 80 scientists.**
- Developed 17 workflows and products, including the BH2BU ancestry test (launched in May 2019) and a Paternity/Kinship test (launched in October 2022).
- Formed strategic partnerships with H3Africa, MRC, MADCaP consortium, and NHLS.
- Established a spin-off company, Artisan Biomed (subsequently secured a R70M investment while maintaining CPGR as the service provider)



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SA Bioeconomy (preliminary)

~8.3% GDP

1.2 - 1.5M jobs

~242 companies.

Thank you