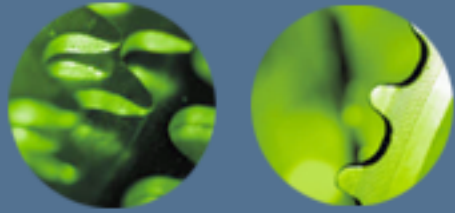




Policy Perspectives and Strategic Priorities on SET HCD

**PhD Project Presentation
Emperor's Palace
07 May 2009**

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Human Capital and Knowledge Systems
Department of Science and Technology



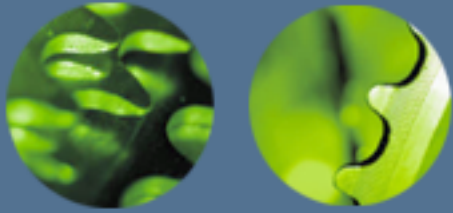
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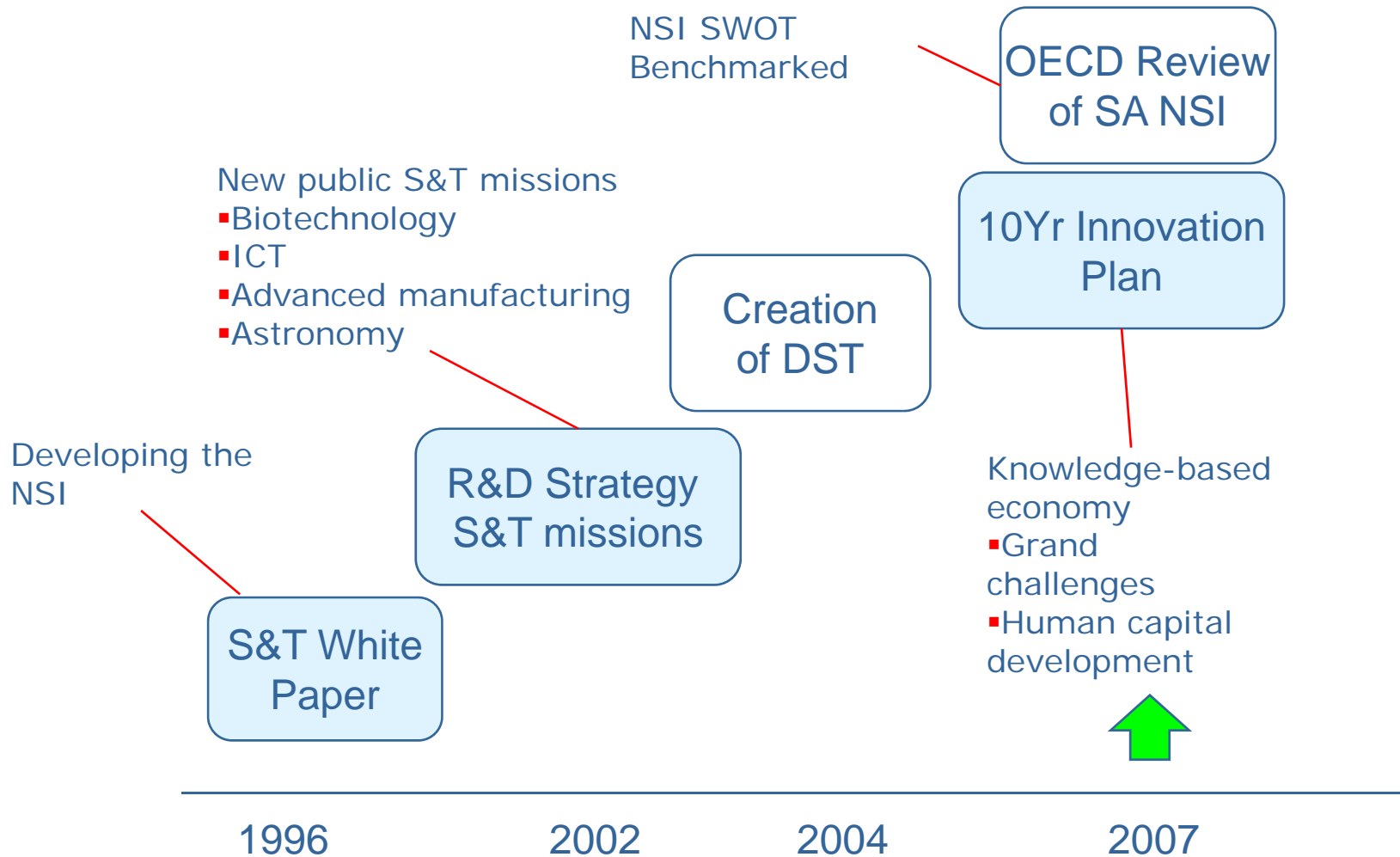


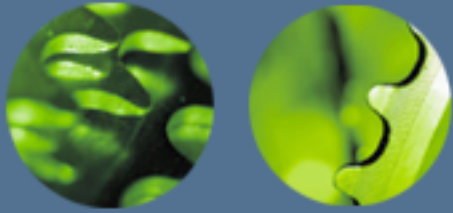
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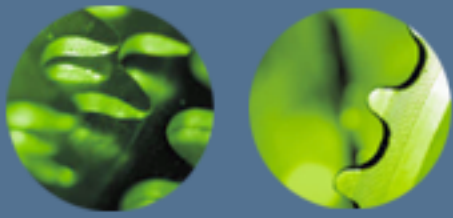
1. SET Policy Landscape



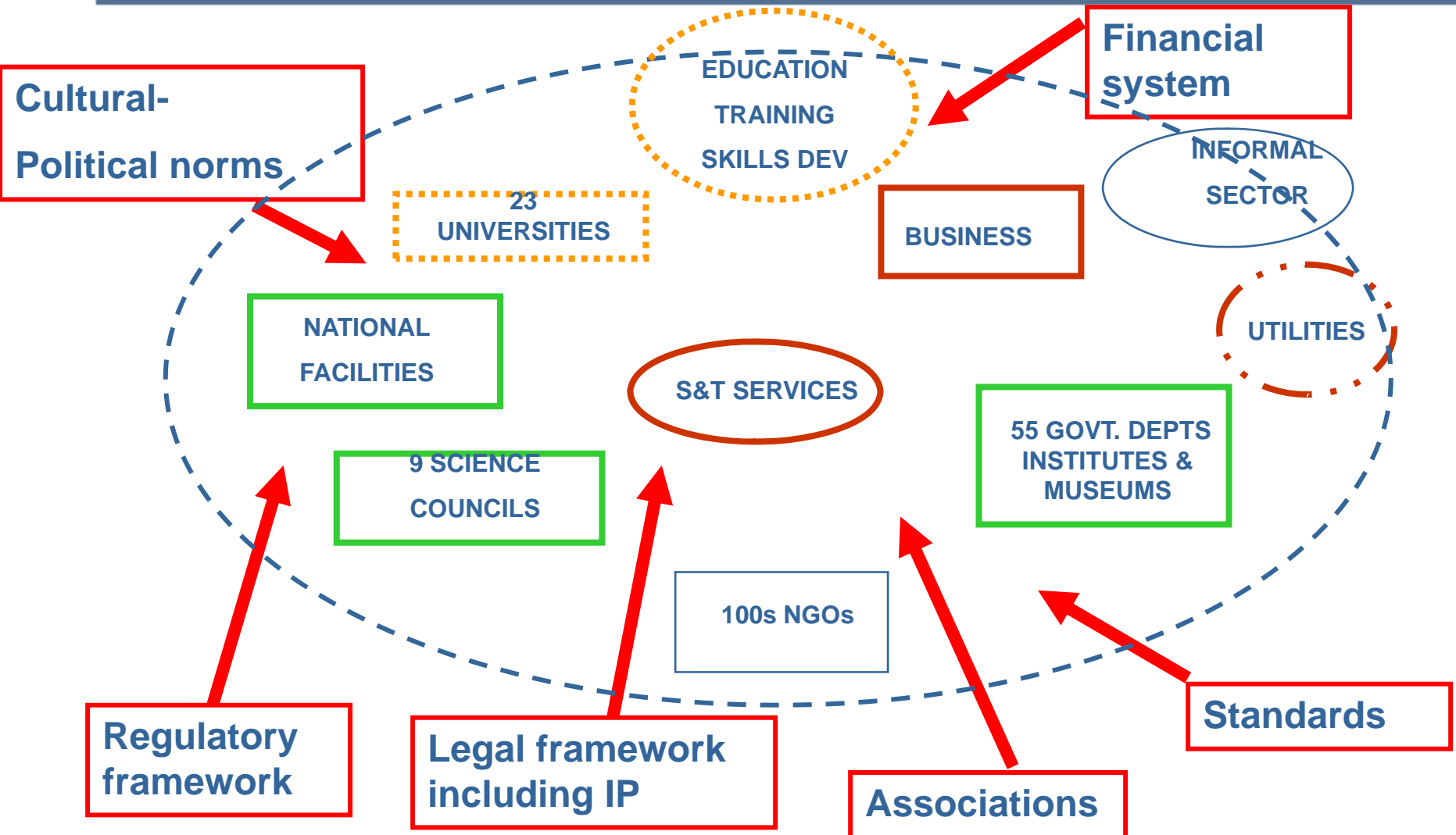


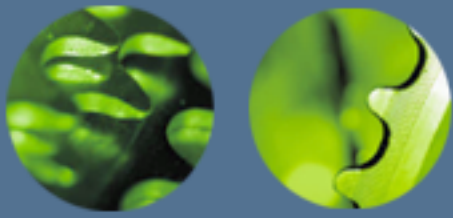
2. The National System of Innovation

- The concept of NSI was introduced in the S & T White Paper and entrenched in the NR& DS
- A **National System of Innovation** (NSI) can be thought of as a set of functioning institutions, organisations and policies which interact constructively in the pursuit of a common set of social and economic goals and objectives.



2. The NSI – Cont.

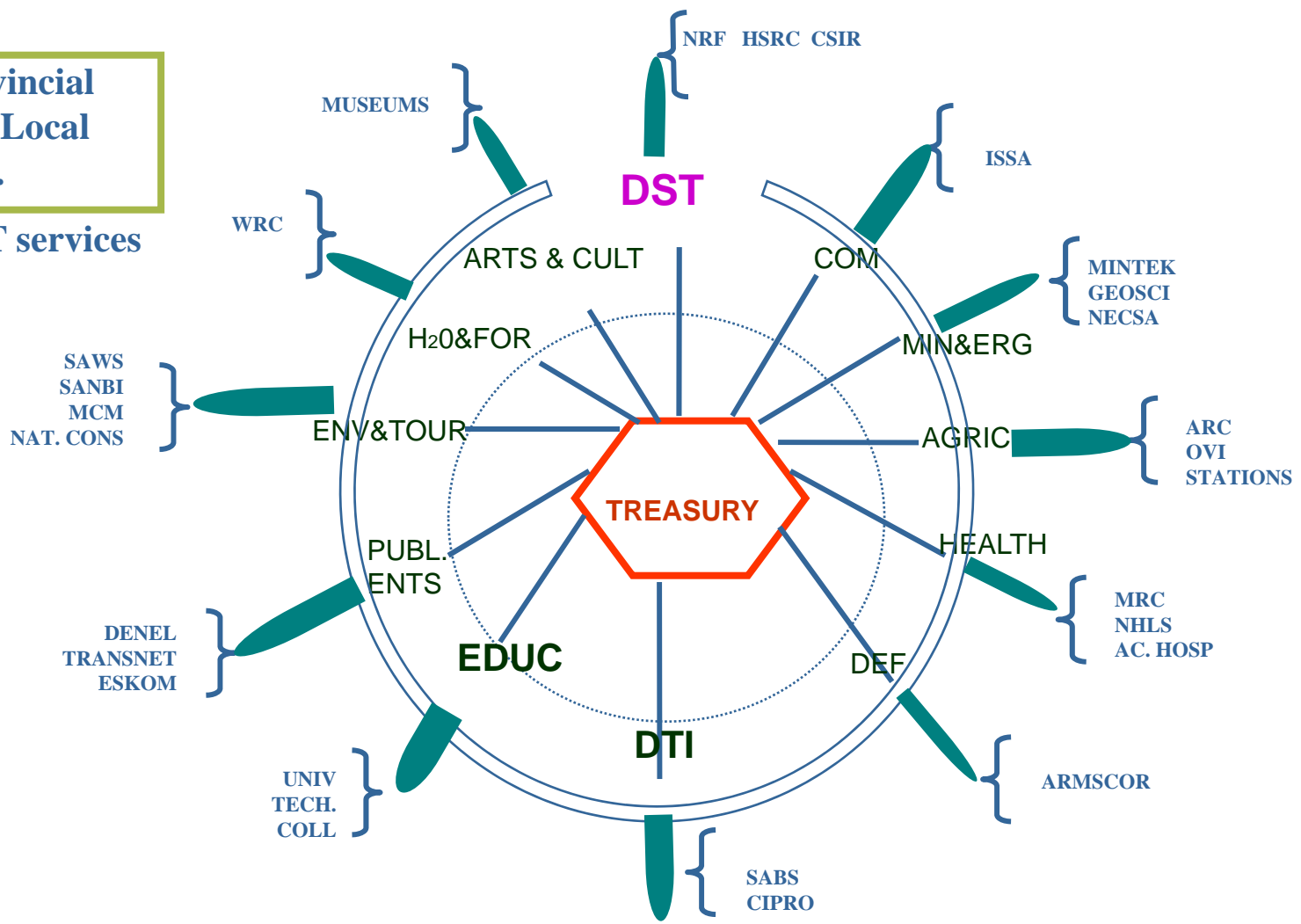


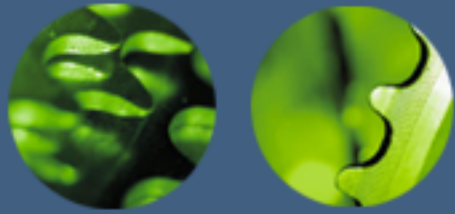


2. The NSI – Govt Role

**Provincial
and Local
Gov.**

S&T services





3. Steering the NSI - Towards a Knowledge-Based Economy

Knowledge is the basic form of capital for Innovation

- Knowledge generation, accumulation and exploitation

Economic growth is driven by Innovation

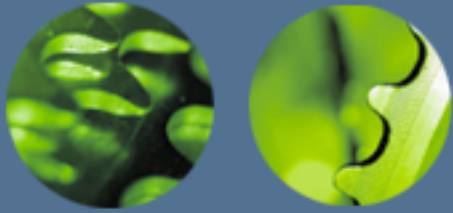
- Key driver for Innovation is “high-end” human capital: PhD
- PhD as the key foundation for achieving the objectives of the National System of Innovation (NSI)



3. Towards a Knowledge-Based Economy - Cont

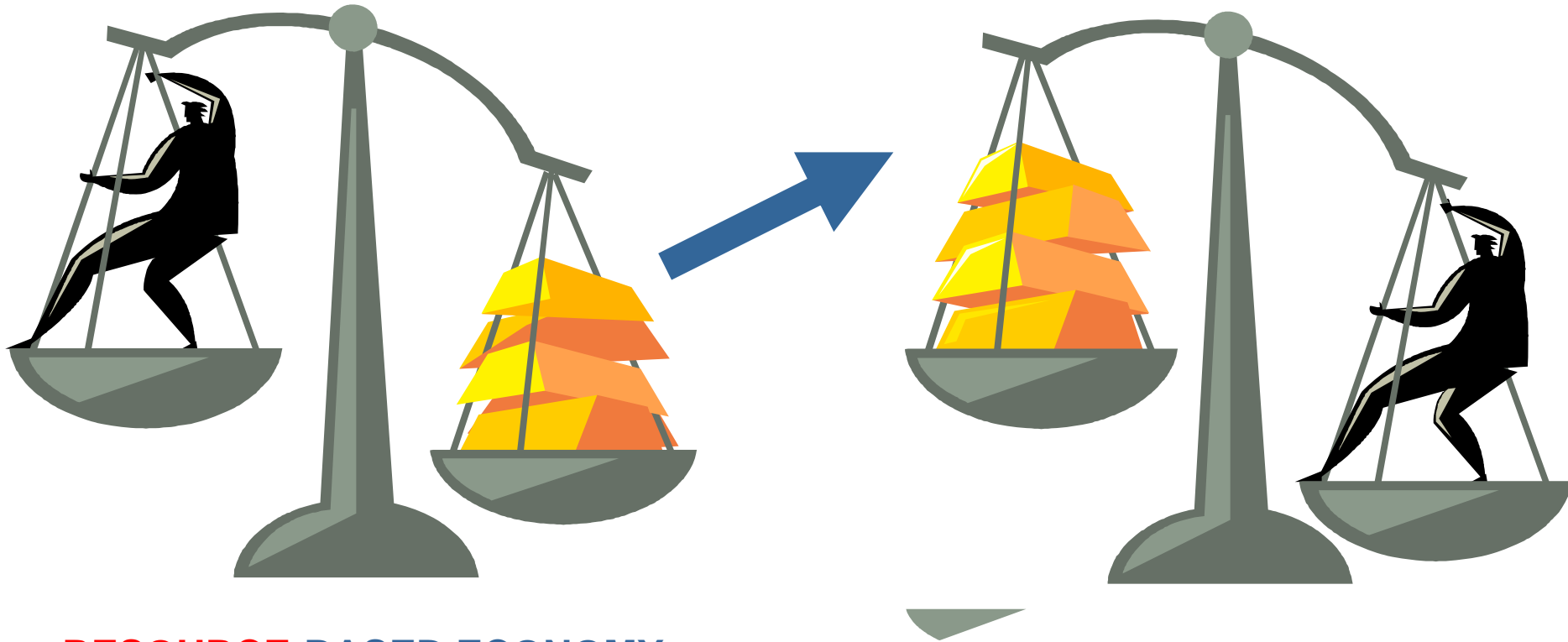
For countries in the vanguard of the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living - more than land, than tools, than labour. Today's most technologically advanced economies are truly knowledge-based.

World Development Report, 1999

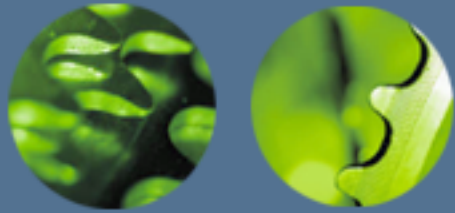


3. Towards a Knowledge-Based Economy - Cont

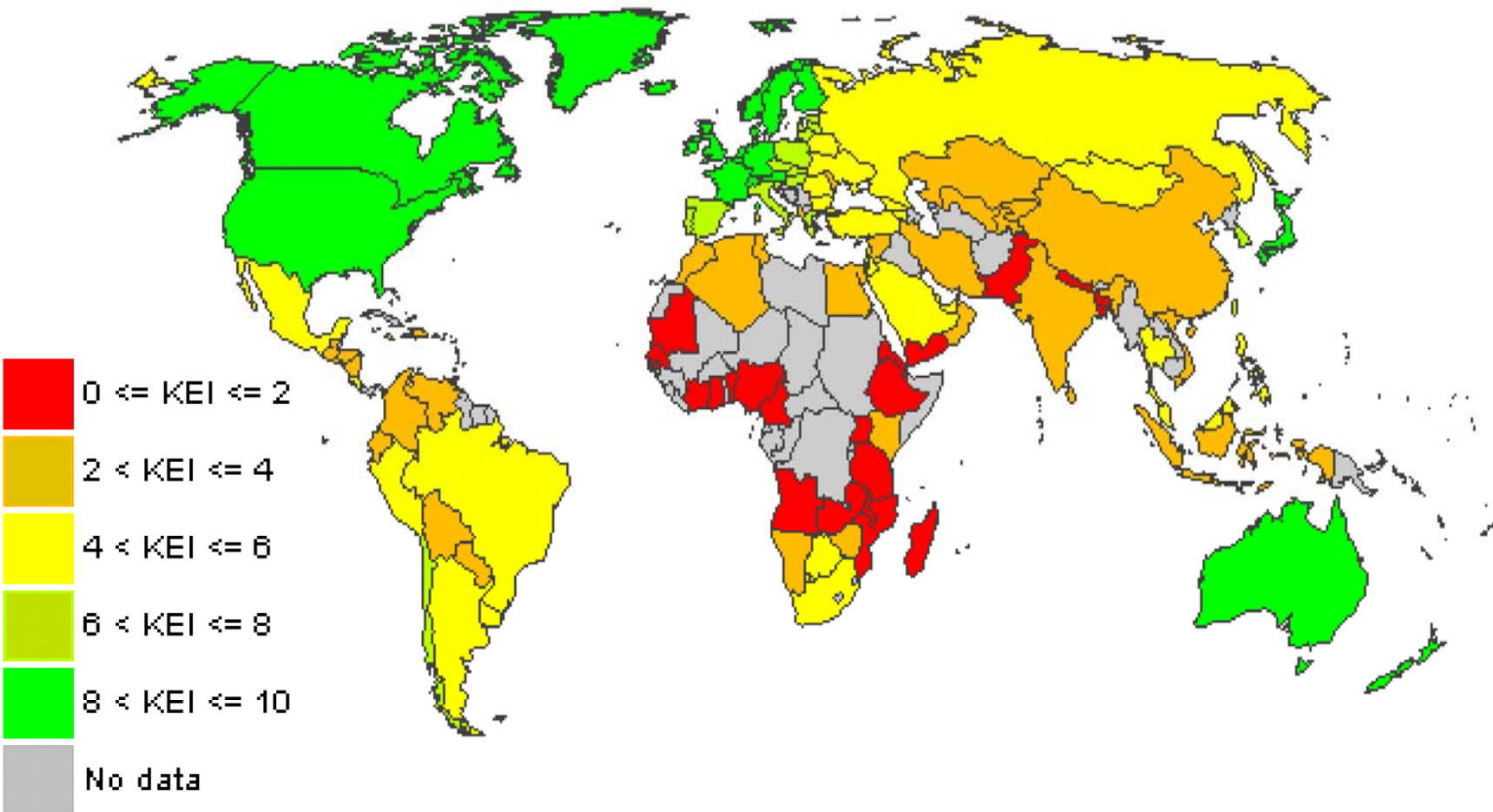
KNOWLEDGE-BASED ECONOMY



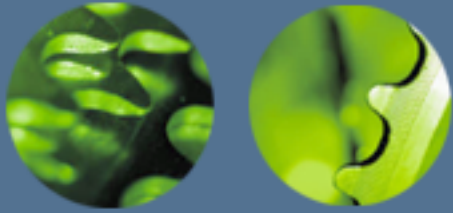
RESOURCE-BASED ECONOMY



3. Global Knowledge Economy Indices (KEI)



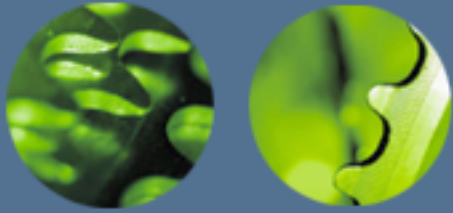
Source: World Bank Institute (2004)



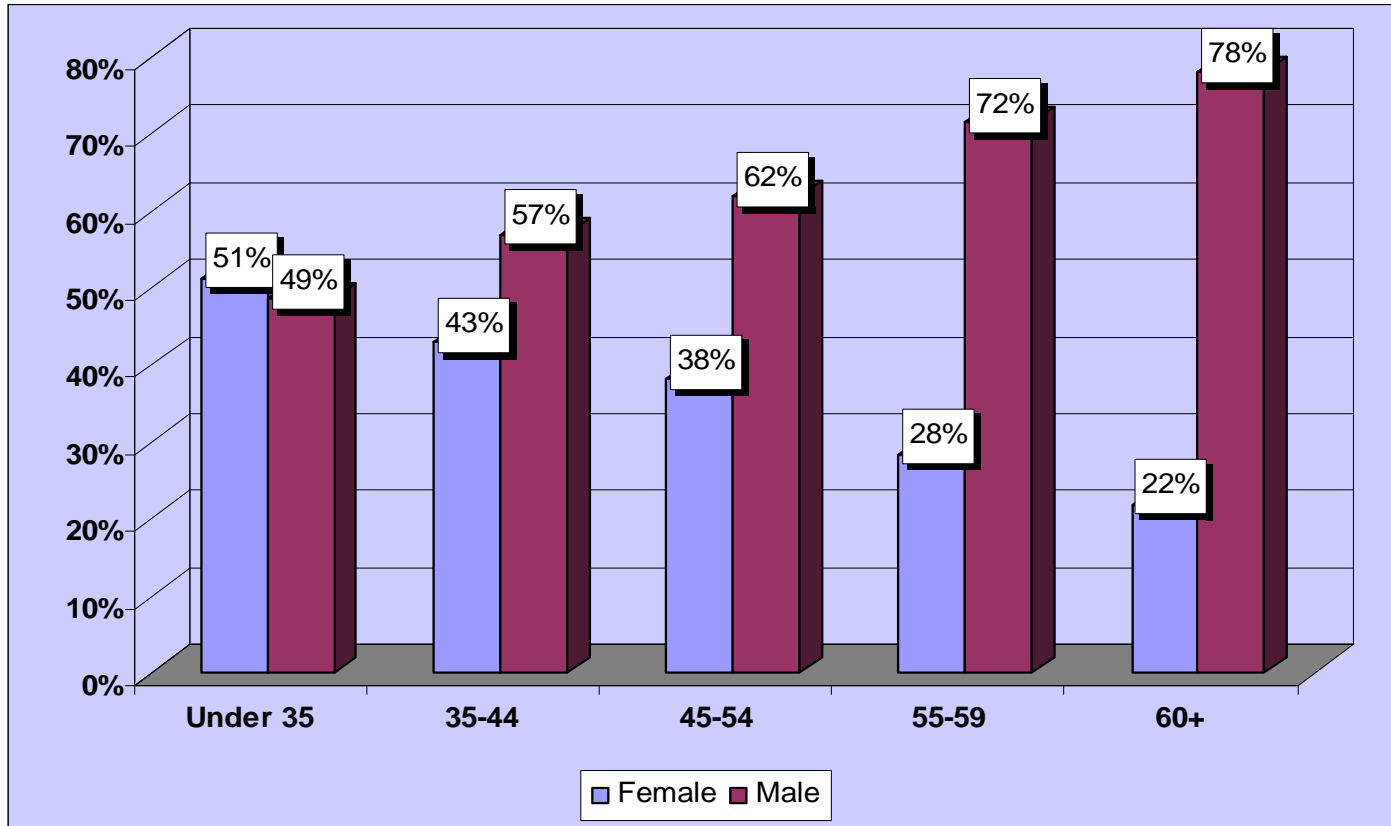
4. NSI Challenges

Challenges at the levels of

- Human Capital Development
- Knowledge Outputs
- Innovation Outputs

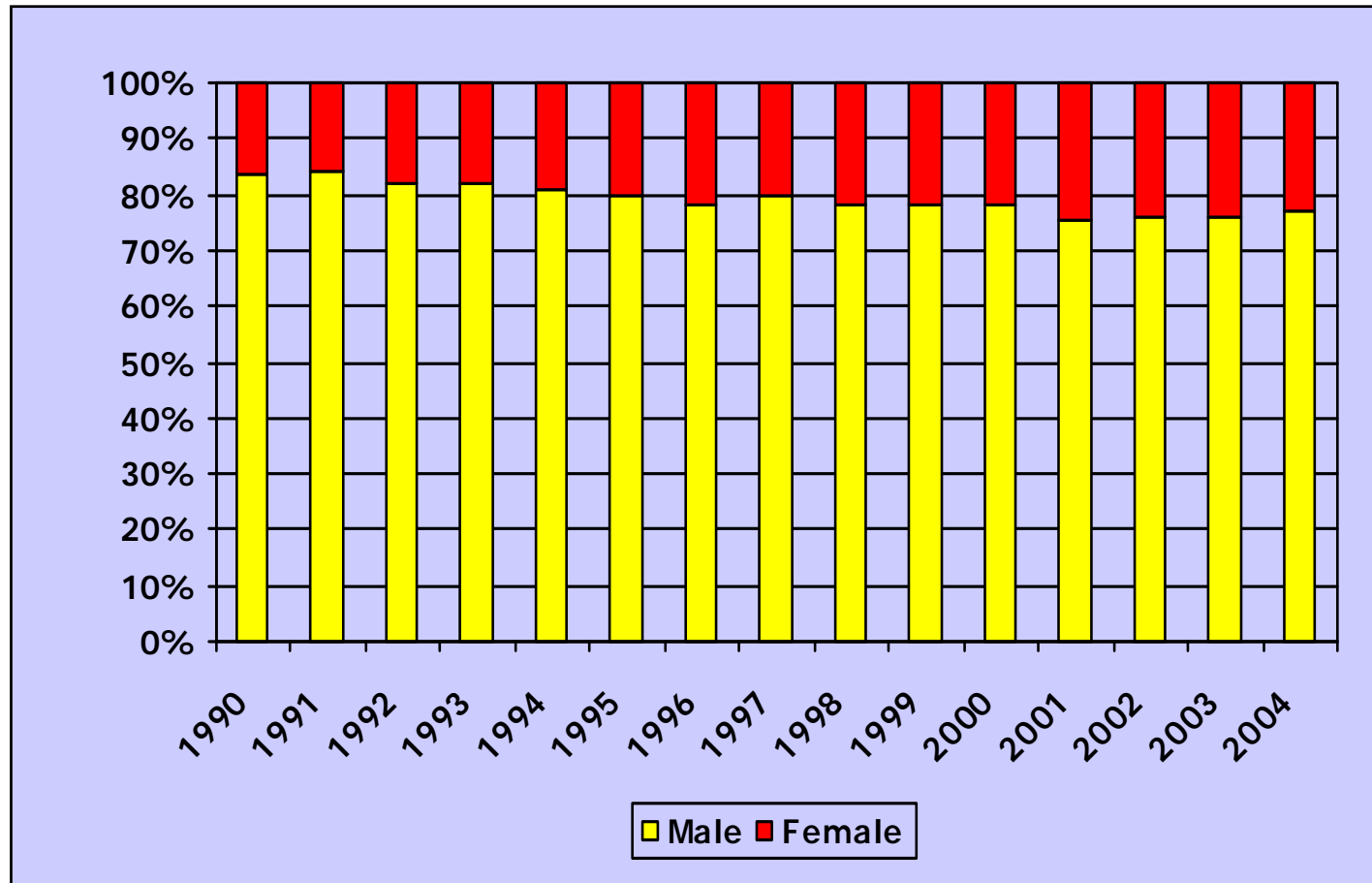


4. NSI Challenges: HCD



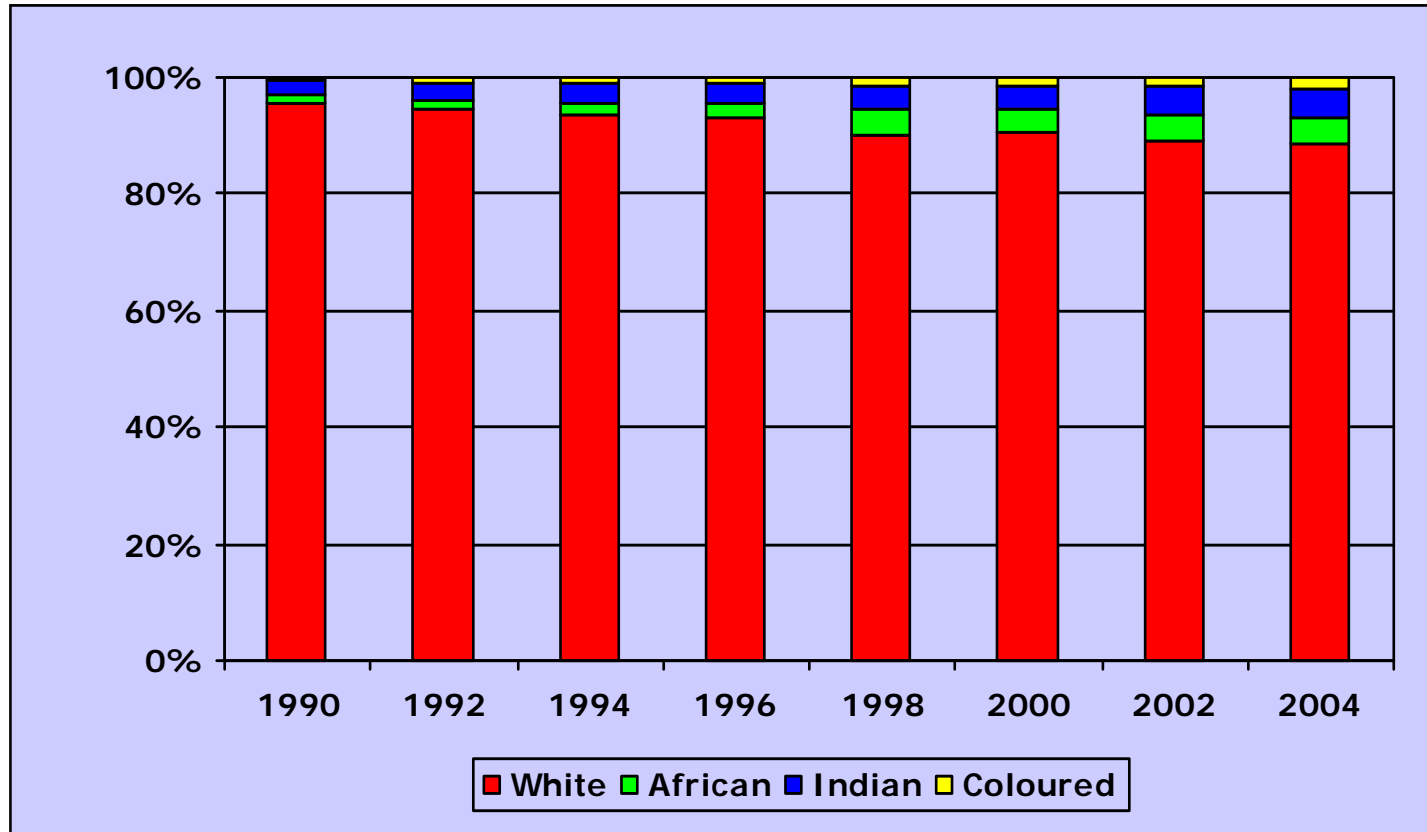


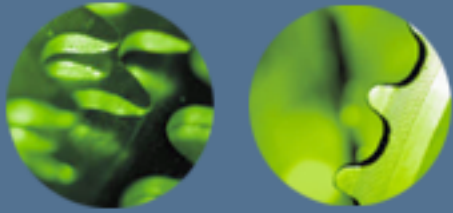
4. NSI Challenges: Knowledge Outputs-Cont



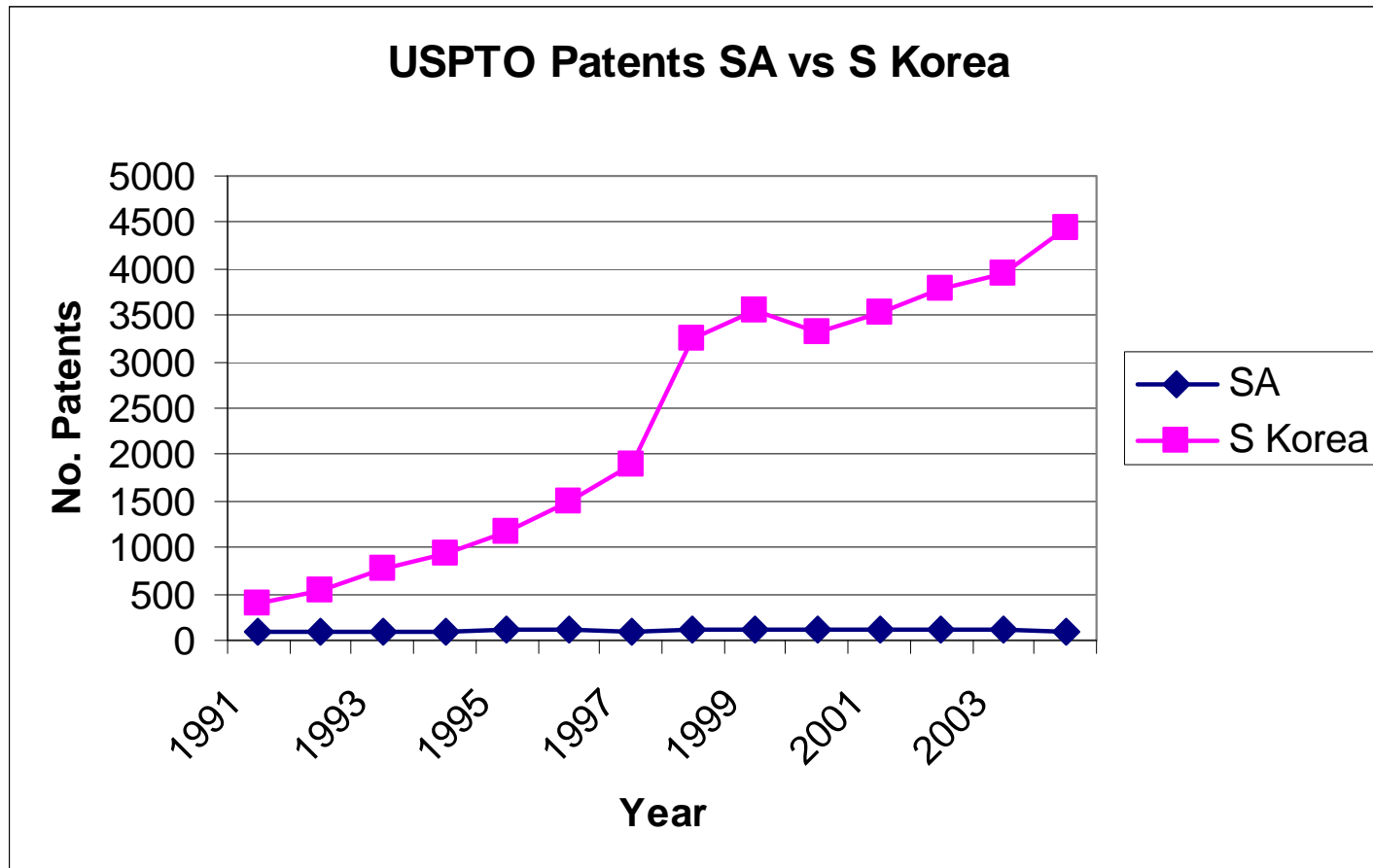


4. NSI Challenges- Knowledge Outputs



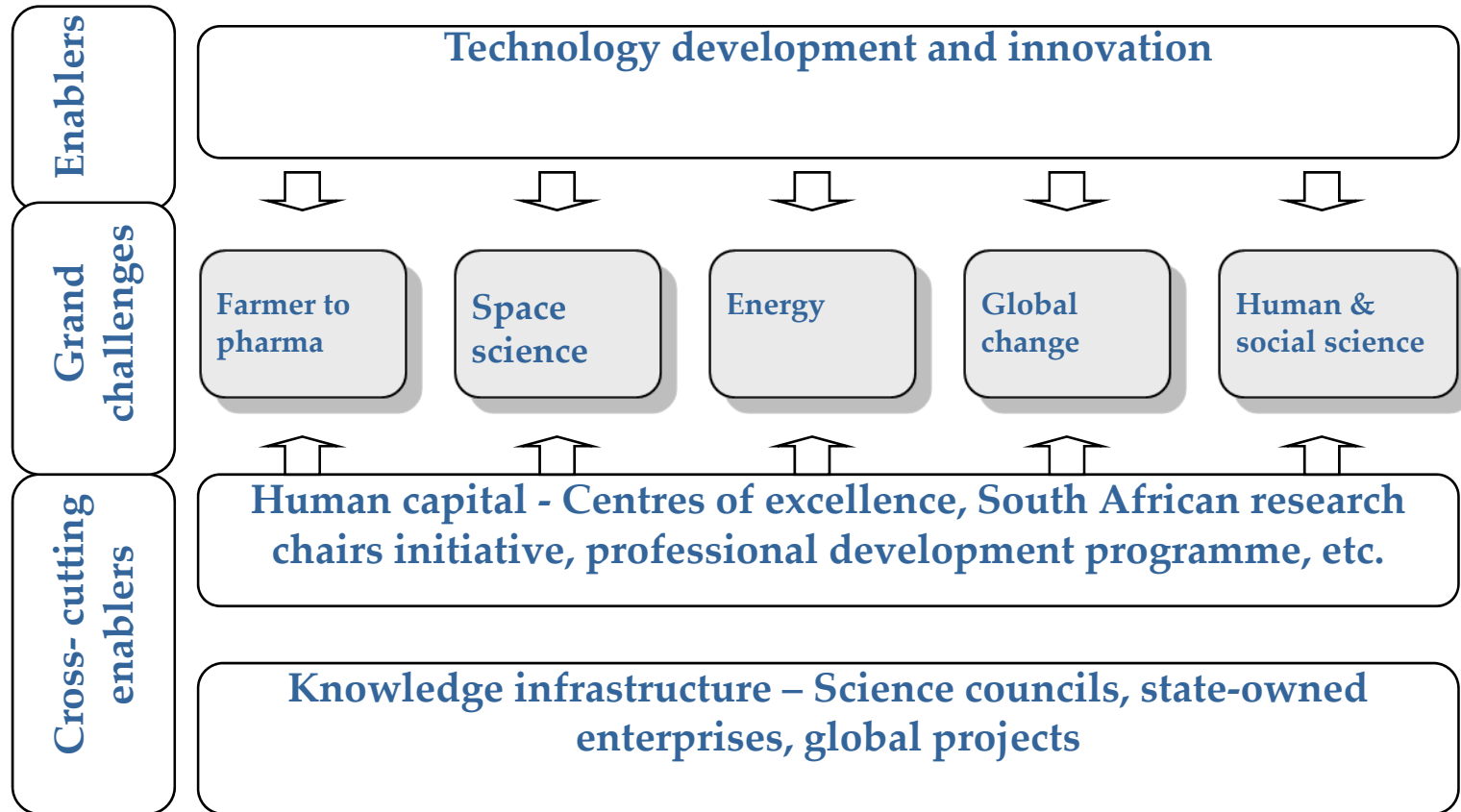


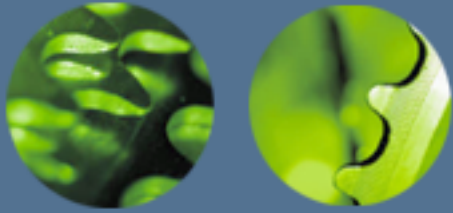
4. NSI Challenges: Innovation Outputs





5. Strategic Response: The Ten Year Innovation Plan





5. The Ten Year Innovation Plan-Cont

Farmer to Pharma value chain to strengthen the bio-economy;

- SA one of the top three emerging economies in the global pharmaceutical industry-SA indigenous knowledge & biodiversity

Space S&T;

- Deploy satellite for scientific, security & specialised services for the government

Energy security;

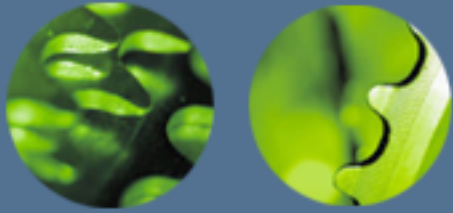
- Diversified supply of sustainable energy
- 25% share of global hydrogen and fuel cell catalysis market

Global-change science (climate change)

- A world leader in climate science & response to climate change

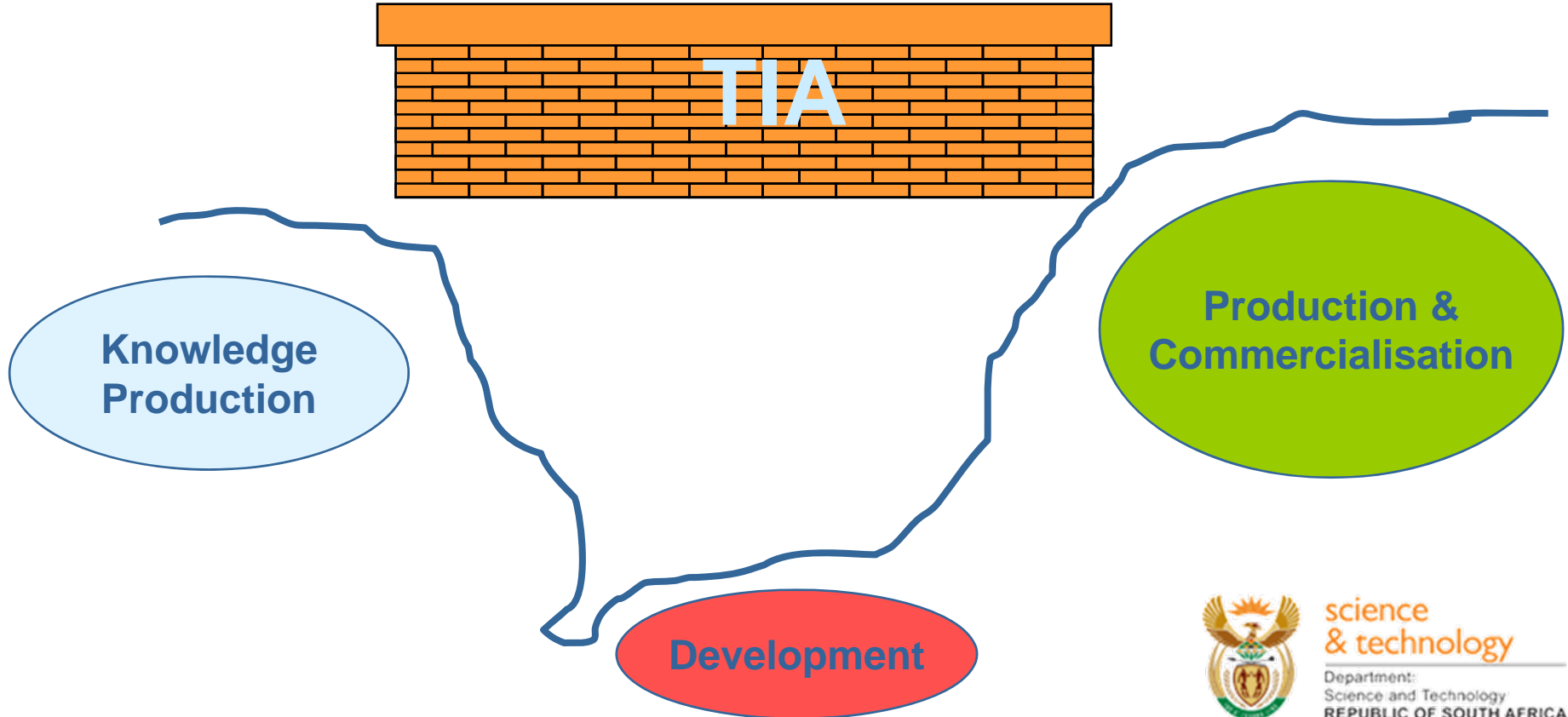
Human and Social Dynamics

- Meet 2014 Millennium development goals to halve poverty.



5. The Ten Year Innovation Plan - Innovation Instruments:

Bridging the “Innovation Chasm”



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NRF

**Specialist
Research Funds**

**International
Research Funds**

TIA

IDC

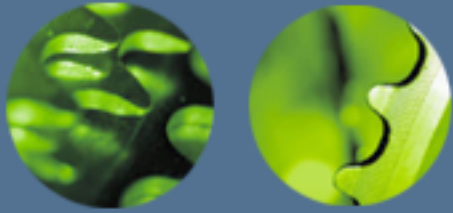
**Venture
Capital**

SEDA

PBF

Publications/New Knowledge

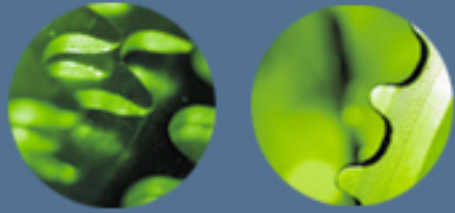
Patents/New Knowledge Products



5. Innovation Instruments - TIA Objectives

Develop a significant technology base for the SA economy, through:

- Stimulating the development of technology-based services and products
- Stimulating the development of technology-based enterprises – both public and private
- Providing an intellectual property support platform
- Stimulating investment by means of venture capital, foreign direct investment and other mechanisms
- Facilitating the development of human capital for innovation



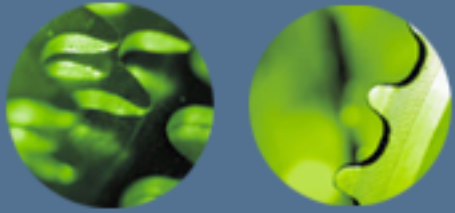
5. The Ten Year Innovation Plan - Innovation Instruments:

1. **Technology Innovation Agency (TIA)**
2. **Intellectual Property Rights Bill (IPR)**
3. **Centres of Competence**
4. **Public Benefit Foundation (PBF)**
5. **Regional Innovation Systems**



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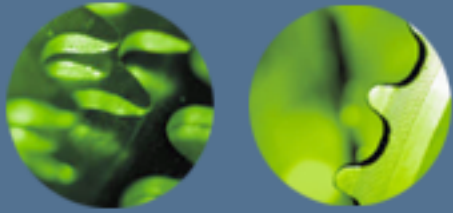
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6. Strategic Response: HCD Instruments

The South African Research Chairs Initiative (SARChI)

- Adding to the HE research community through the placement of candidates new to the system
- A total of 72 Research Chairs been appointed, a further 10 awarded and to commence in the course of 09/10.

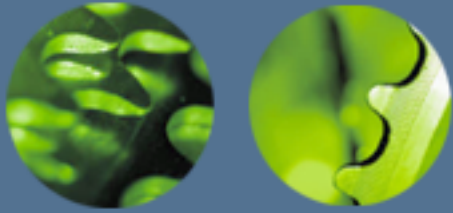


6. Strategic Response: HCD Instruments

Centres of Excellence

- are physical or virtual centres of sustained distinction in research in key areas of national and global areas of knowledge;

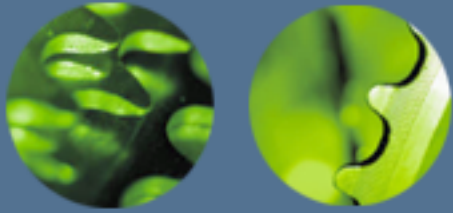
TYPE OF OUTPUT (numbers)	2004	2005	2006	2007
Postgraduate students supported	126	238	303	342
Female students	63	107	152	156
Black students	73	117	151	167
Articles published in peer reviewed journals	79	173	218	220



6. Strategic Response: HCD Instruments

Innovation Post-Doctoral Fellowship Program

- assist PhD graduates to obtain experience of research at University or Science Councils
- Since inception in 2005/6, 119 Post Docs have been supported
- Programme has short international stint allowance - upon motivation



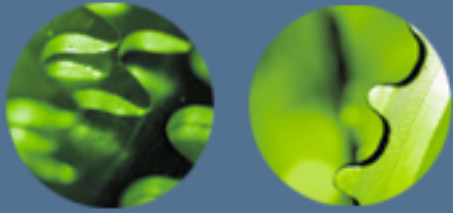
6. Strategic Response: HCD Instruments

Professional Development Programme (PDP)

- Young scientists doing PhDs or having completed PhDs placed at science councils to develop specialist research skills
- Programme has supported 197 fellows since inception in 2005/6

Innovation Bursary Scheme

- Lucrative Bursary programmes for Honours, Masters and PhDs



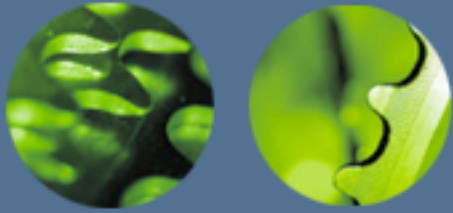
6. Conclusion

- Five “grand challenges” as a mechanism to create focus and developing a research agenda with specific national outcomes;
- Ensure innovation as a national competence strengthened by appropriate mechanisms (i.e. TIA; Centres of Competence);
- Enhance country’s ability to generate knowledge;
- Application of knowledge to generate new products and services;



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6. Conclusion

- Contribute to economic growth and job creation;
- Provide required infrastructure; and
- Research, Development and Innovation within traditional sectors



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Thank You
Siyabonga
Re a leboga