



**RISA**

**Research and Innovation  
Support and Advancement**

**CHPC National Meeting 2009 and 5th BELIEF-II Symposium**  
*Advancing research competitiveness through collaboration:  
towards an integrated South African Cyber-Infrastructure*

*Dr Romilla Maharaj*  
*National Research Foundation*

# The underpinning role of the NRF in fostering an integrated cyber-infrastructure



**RISA**  
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# Mandate of the NRF: the NRF Act, no. 23 of 1998



**Promote and support research**

**through**

funding, human resource development and the provision of core national research facilities

**in order to**

facilitate the creation of knowledge, innovation and development in all fields of science and technology, including indigenous knowledge

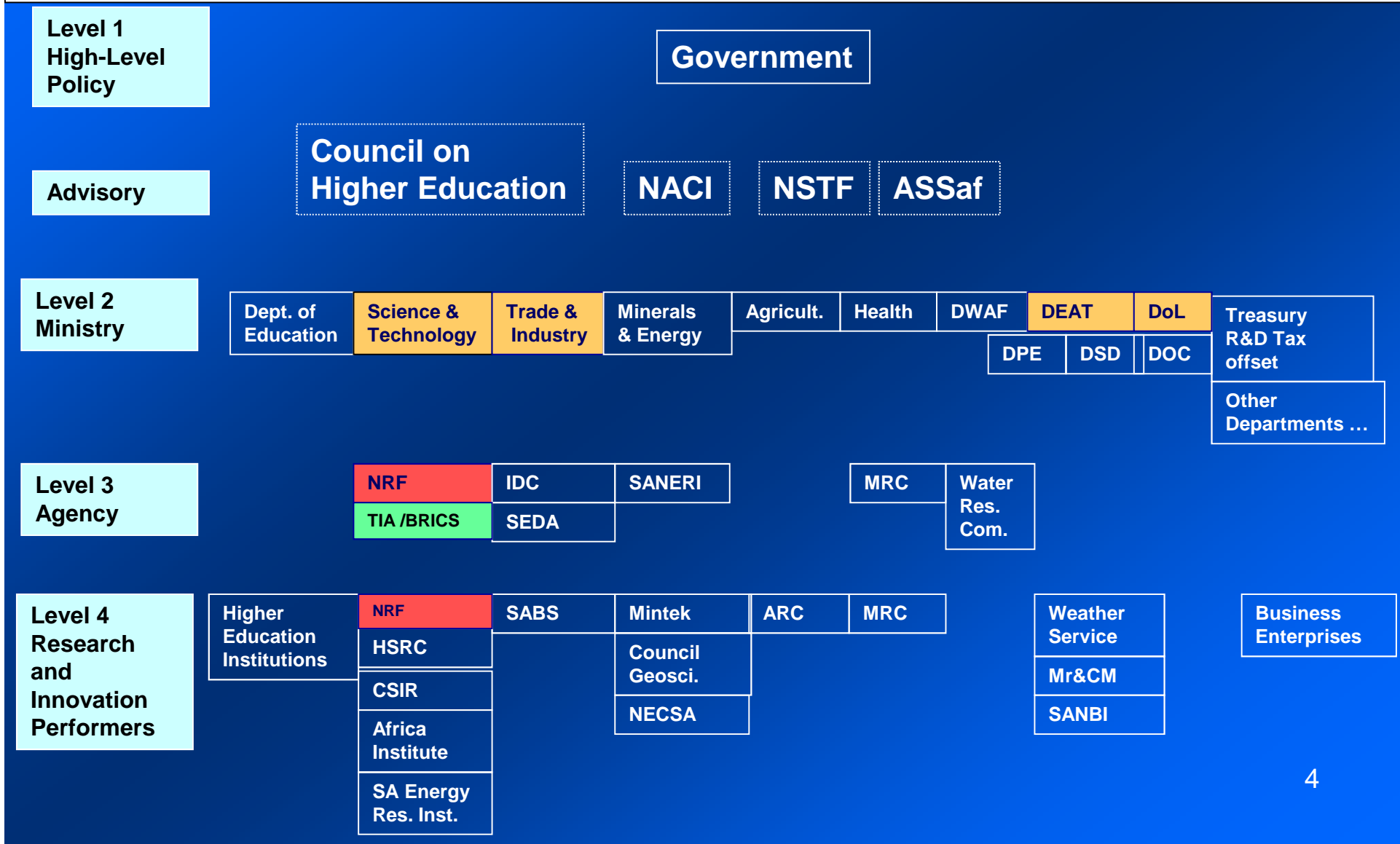
**and thereby to**

contribute to the improvement of the quality of life of all the people of the Republic

# Science Landscape



**RISA**  
Research and Innovation  
Support and Advancement



# NRF Core Competencies



- Leading edge grant making and management
- World class research evaluation and assessment
- State-of-the-art research platforms
- Strategic science intelligence
- International science co-operation
- Community engagement through science awareness, communication and education

# NRF Vision 2015



RISA

Research and Innovation  
Support and Advancement

Last year the National Research Foundation finalised its new Seven Year Strategy entitled Vision 2015:

World-class research

Transformed society

Sustainable environment

# NRF Vision 2015 (cont.)



NRF in partnership with various role-players envisages to implement the Vision 2015 to achieve the following:

- To facilitate a resilient research culture;
- To grow cohorts of well-trained and motivated post-graduate researchers;
- To provide access to the state-of-art National Research Facilities and infrastructure; and
- To promote the notion of “science in and for society”

# NRF Mission



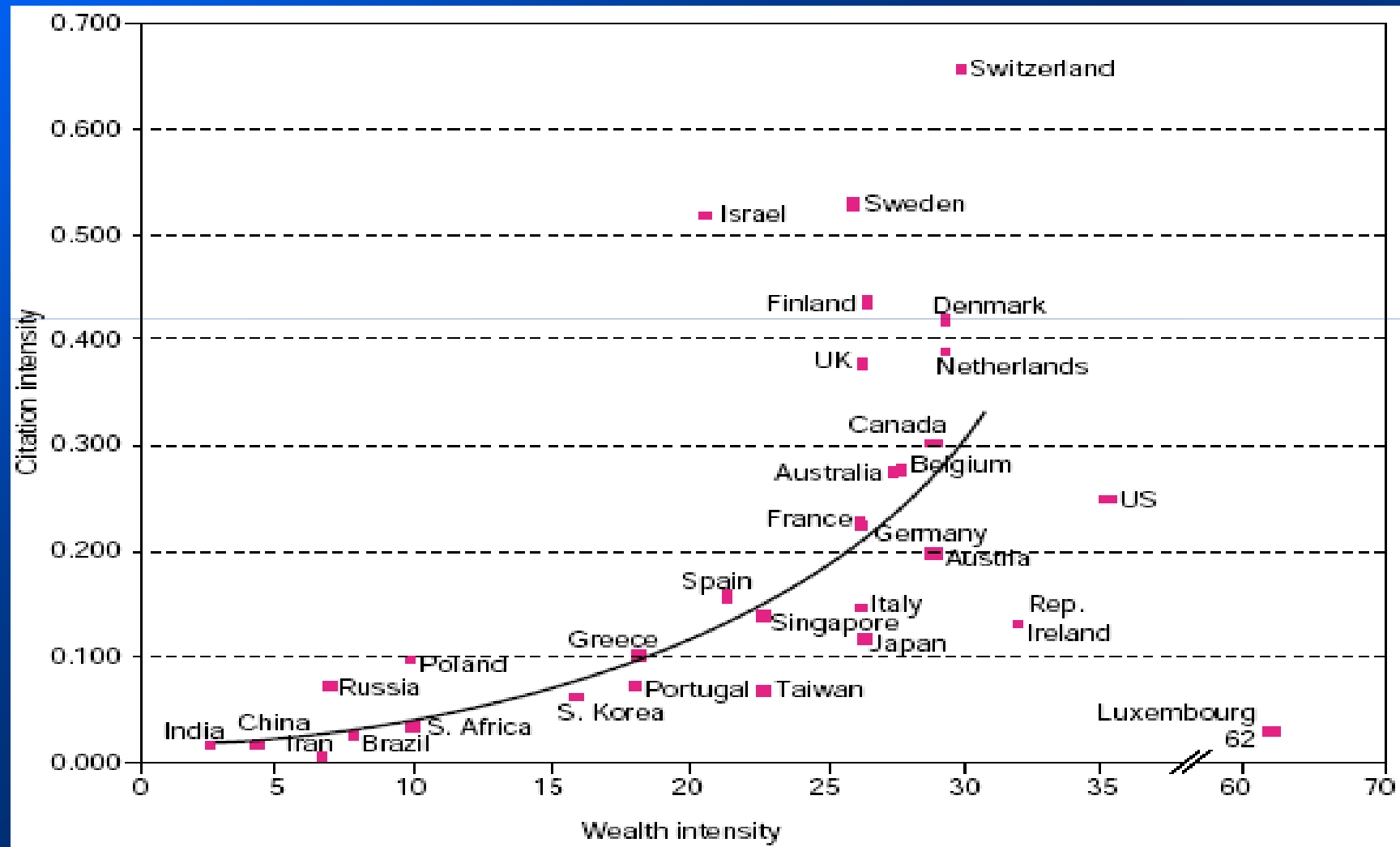
**RISA**  
Research and Innovation  
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To contribute to the knowledge economy  
in SA by attaining at least 1% of global  
R&D output by 2015

# Links between citations and wealth intensity



National  
Research  
Foundation



# Three pillars of the NRF



**RISA**  
Research and Innovation  
Support and Advancement

**Quality of life**

**S&T  
outreach  
(SAASTA)**

**Research and  
Innovation Support  
and Advancement  
(RISA)**

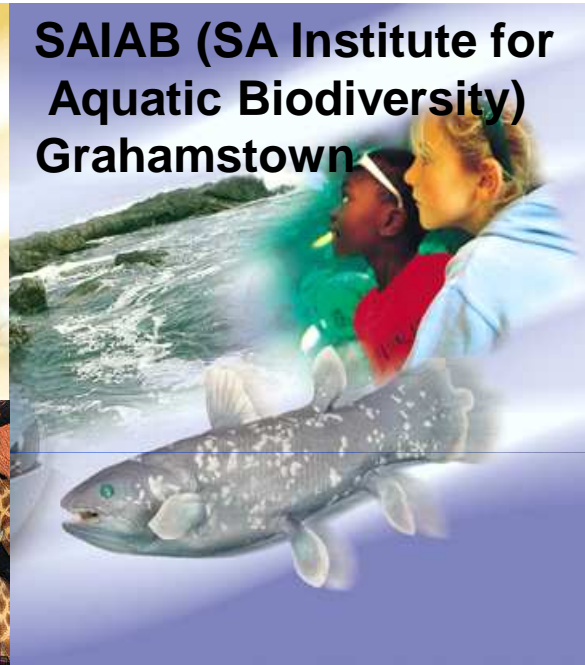
**Provision of  
National  
Research  
Facilities**

**National Research Foundation**

# THE NATIONAL FACILITIES



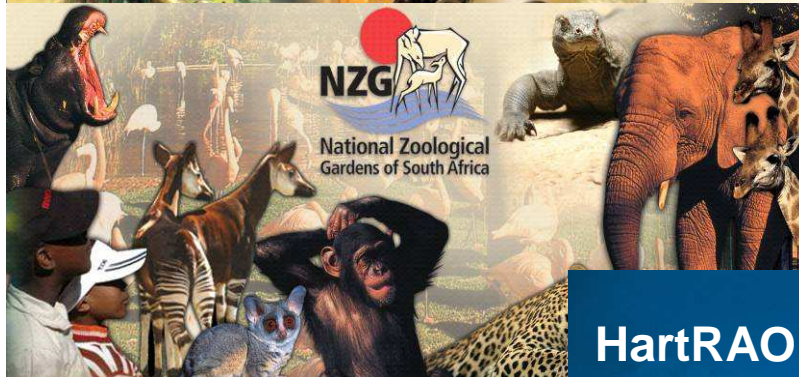
**iThemba LABS**



**SAIAB (SA Institute for Aquatic Biodiversity)  
Grahamstown**



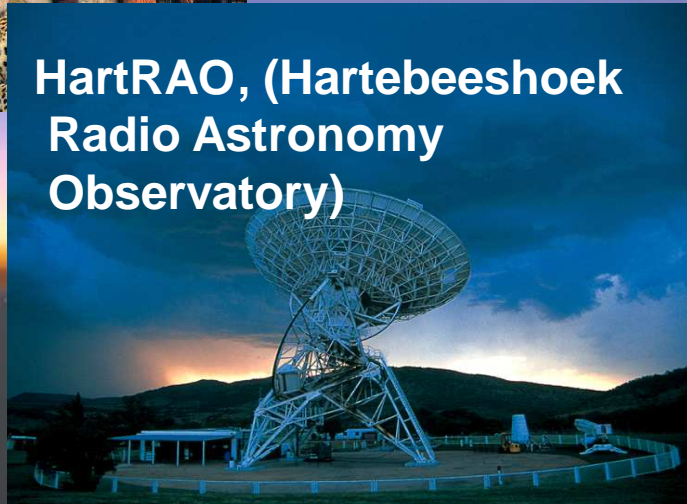
**SAAO  
(SA Astronomical Observatory) -  
Sutherland**



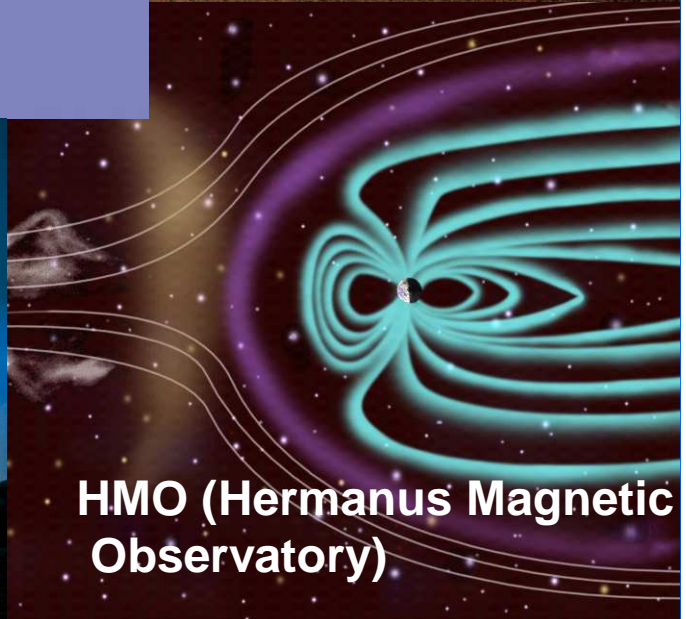
**NZG**  
National Zoological  
Gardens of South Africa



**SAEON  
(SA Environmental  
Observation  
Network)**



**HartRAO, (Hartebeeshoek  
Radio Astronomy  
Observatory)**



**HMO (Hermanus Magnetic  
Observatory)**

# NRF key driver of change



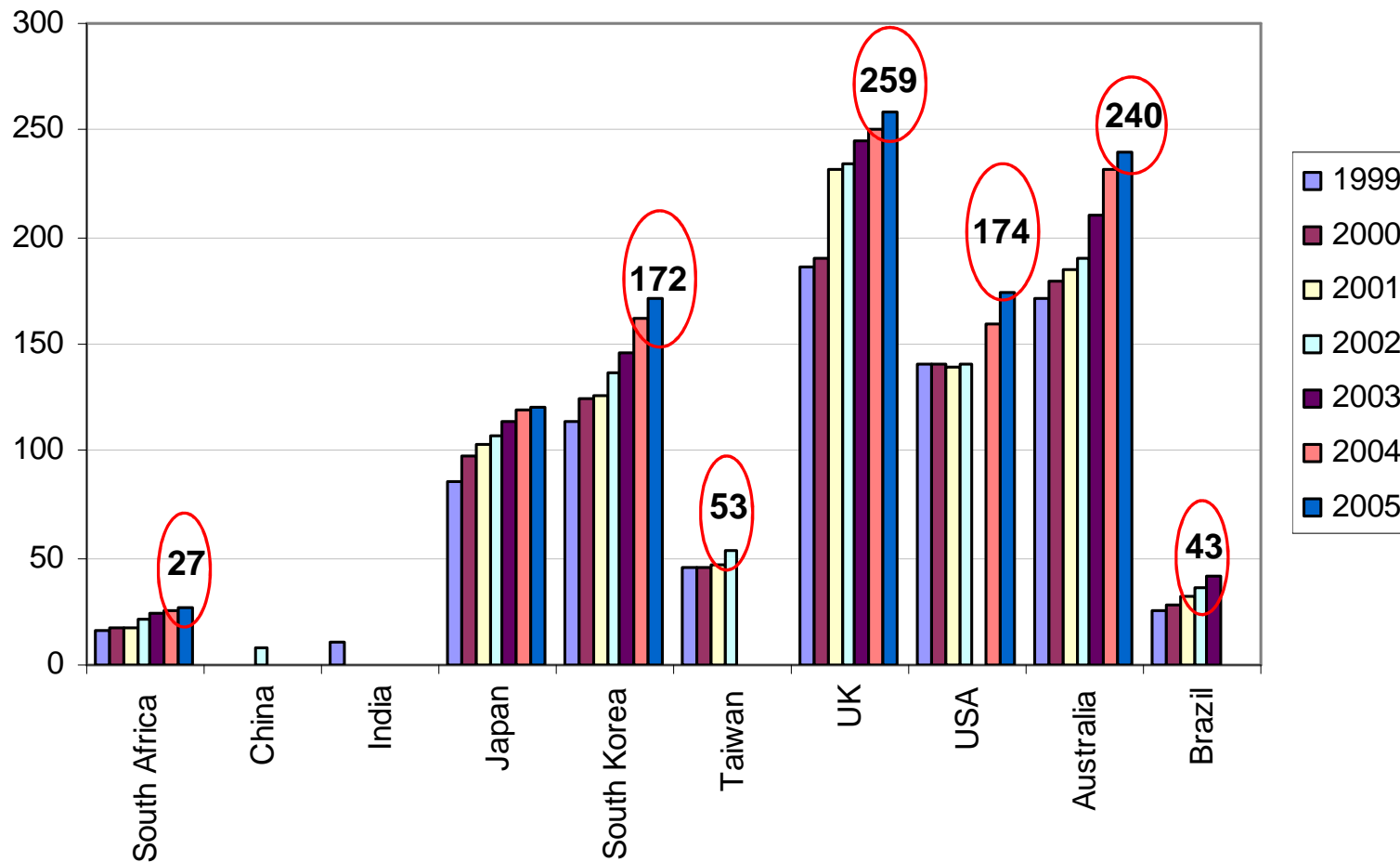
The key driver for the NRF is the production of large numbers of high quality PhD graduates that are required to provide the bedrock for an innovative and entrepreneurial knowledge society.

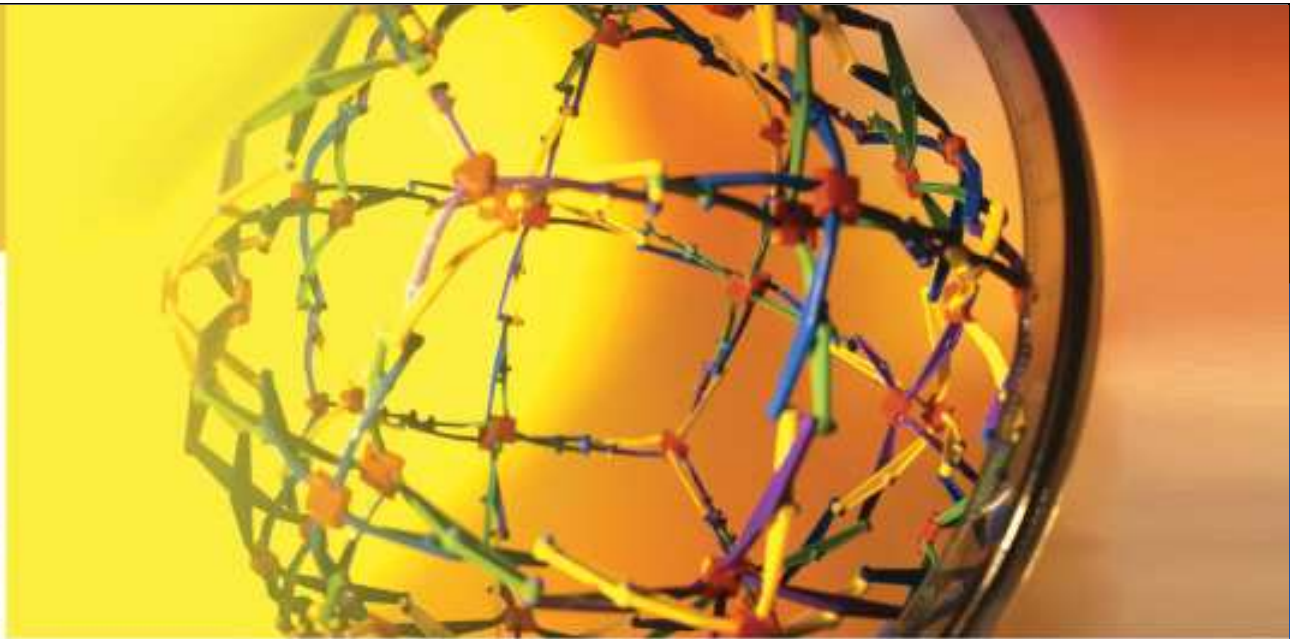
# PhD production profiles of selected countries



National  
Research  
Foundation

### PhDs produced per million population





# South African PhD Project

## Expanding the frontiers of knowledge



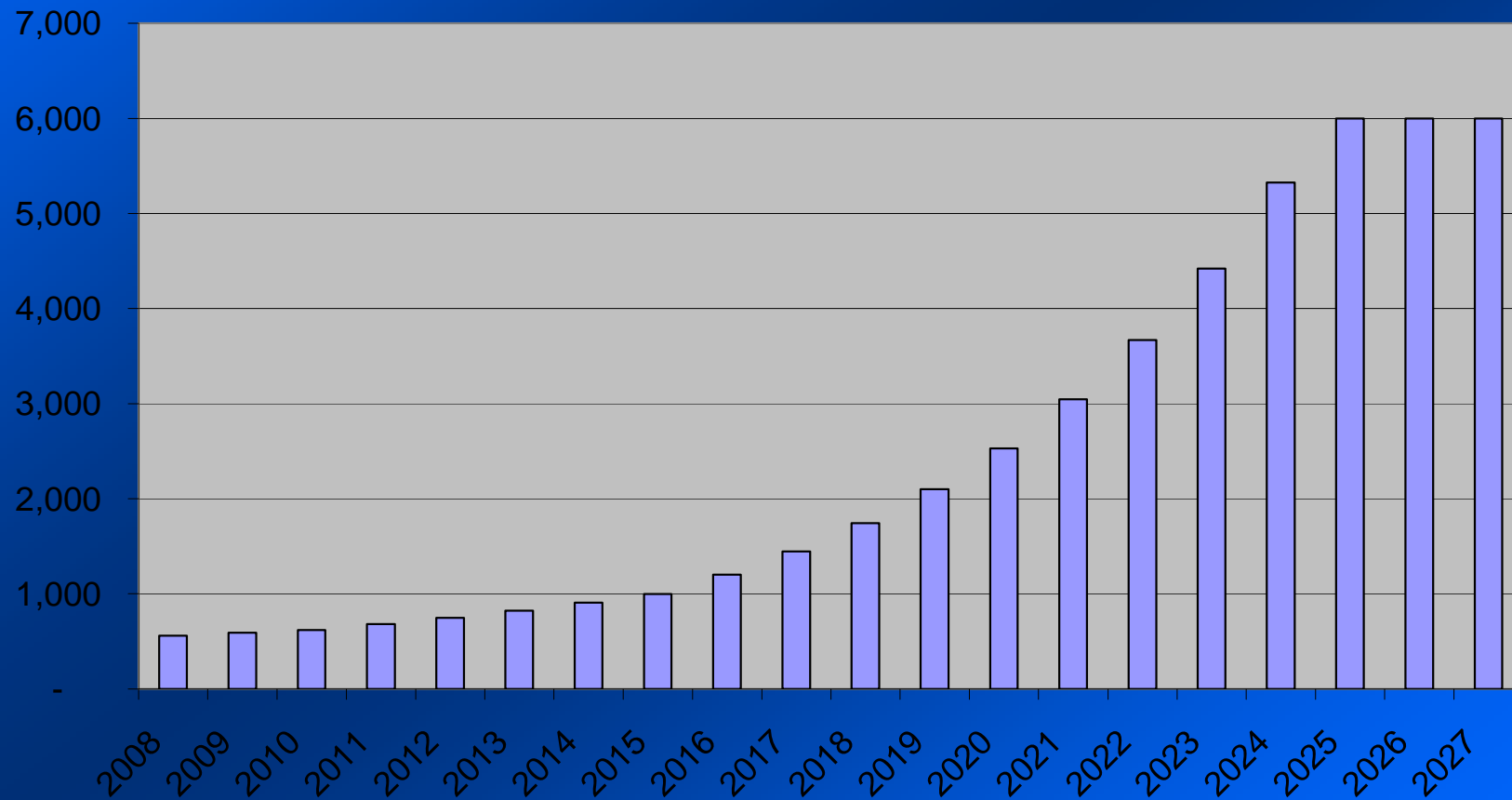
science  
& technology

Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA

# Trajectory for a five-fold increase in PhD graduates



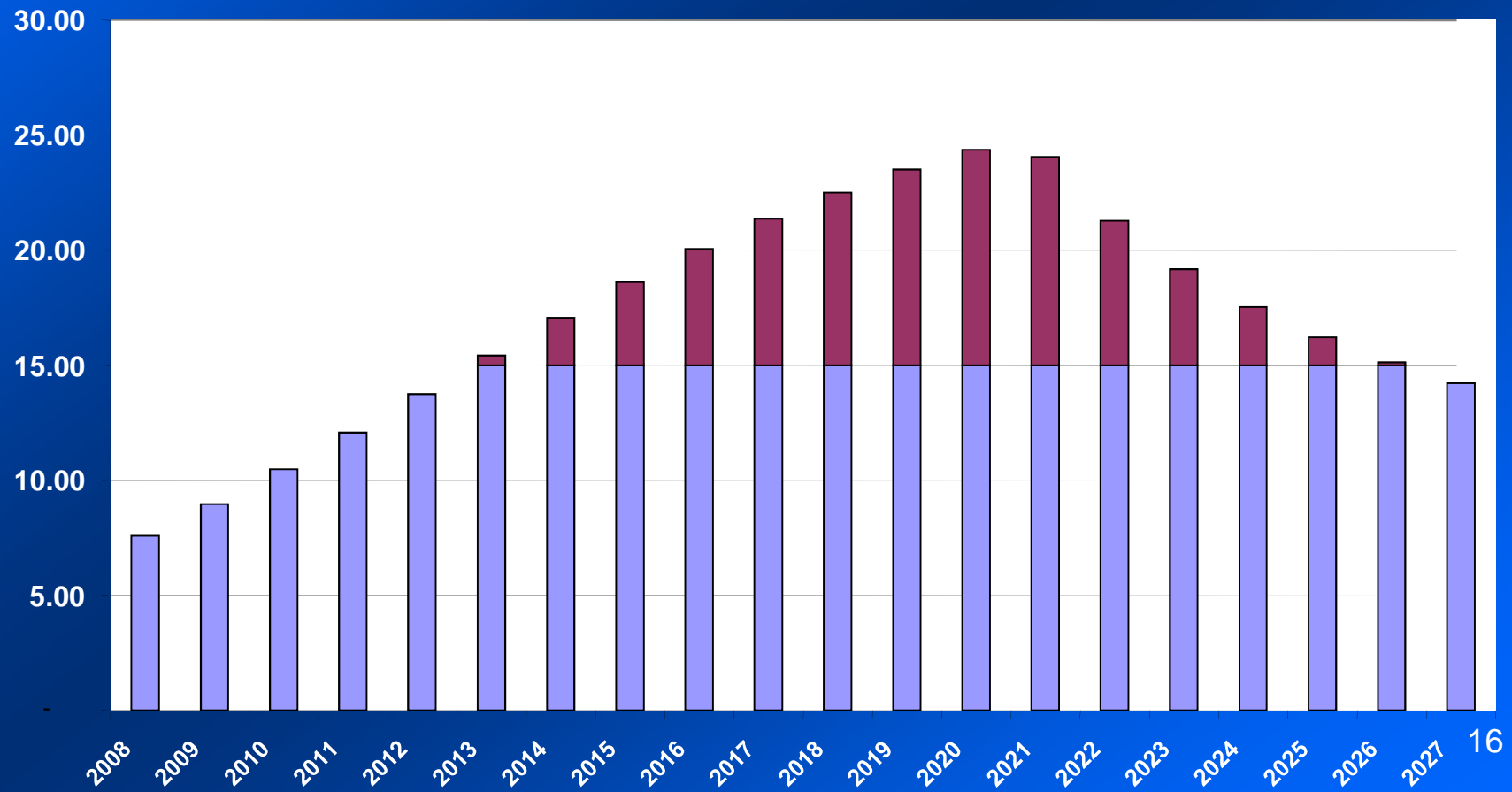
PhDs graduates per annum



# Required supervisory capacity for increasing PhD outputs



## PhD graduates per annum per 100 PhD Researchers



# NRF Bursaries and Scholarships



National  
Research  
Foundation

Undergraduate

Honours

Masters

Doctoral

Postdoctoral

- SKA

- SKA

- SKA

- SKA

- SKA

- DOL

- DOL

- DOL

- DOL

- DST

- DST

- DST

- DST

- **NRF**

- **NRF**

- **NRF**

- **NRF**

## Strategic Projects

- Bioinformatics and Functional Genomics\*\*

- **F'SATI**

- Manus Matsci, BRAD, SAICA,

KEY: DOL- Dept of Labor; DST – Dept of Science and Technology; BRAD – Black Researchers/Academics Development; SAICA – South African Institute of Chartered Accountants; SKA- square kilometre array; Manus Matsci – Masters in Acceleration and Nuclear Sciences/ Material Sciences;

# NRF Investment Strategy



**RISA**  
Research and Innovation  
Support and Advancement

- Centres of Excellence
- South African Research Chairs Initiative
- Rated Researchers
- Unrated Researchers
- Institutional Development
- Human Capital Development
- Strategic Investment Areas
- Applied Research and Innovation
- Research Platforms and Infrastructure
- International Research Support
- Community Engagement

# HPC Special interest groups



- Advanced computing engineering
- Astronomy / Cosmology
- Chemistry / Biochemistry
- Bioinformatics / Epidemiology
- Computer science / GRID / HPC / HEC
- Comp. Finance
- Data management / Curation
- Earth sciences
- Education
- Engineering
- Social sciences, Humanities, art
- ICT policy and technical computing
- Image processing
- Medical, health and pharmaceuticals
- Nanotechnology
- Physics
- Visualisation/Computer graphics

# Cyberinfrastructure Players



**Researchers**

- Faculty
- Grad Students
- Staff

**Campus IT**

- Security ID Mang
- Network
- Data Center

**Security, Access Coordinators**

- International
- National
- Regional

**Network Providers**

- International
- National
- Regional

**Collections Organizations**

- Libraries
- Discipline Groups
- Publishers

**Policy/Leadership/Funding**

- OGF
- Federal Agencies
- Educational Organizations

**Supercomputer Sites**

- Discipline Support
- Computation Storage
- Software Development

**Grid Orgs**

- International
- National
- Regional

**Discipline Groups**

- Biological Science.
- Physical Science
- Medicine
- Other Disciplines

# Thank you

