



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



Development of the internationalization of PhD studies in South Africa

“Toward institutional structures that support the complete PhD life cycle”

Pretoria, Training session 2, 26-29 March 2019



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The National Research Foundation

Global Knowledge Partnerships

Dr Aldo Stroebel
Executive Director
Strategic Partnerships



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*‘...internationalisation of PhD studies is
a shared institutional responsibility...’*



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Foresight, planning, strategy, and needs analysis



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The NRF and the YEBO Country Sisters

Country	Science Granting Council
France	CNRS
Germany	DFG
Sweden	SRC, STINT
Belgium	FWO, FNRS
Lithuania	RCL

- Global Research Council

Legislative and other Mandates

National Plan for
Higher Education

National Research
and Development
Strategy (NRDS)
New White Paper

National Human
Capital
Development
Strategy (HRDS)

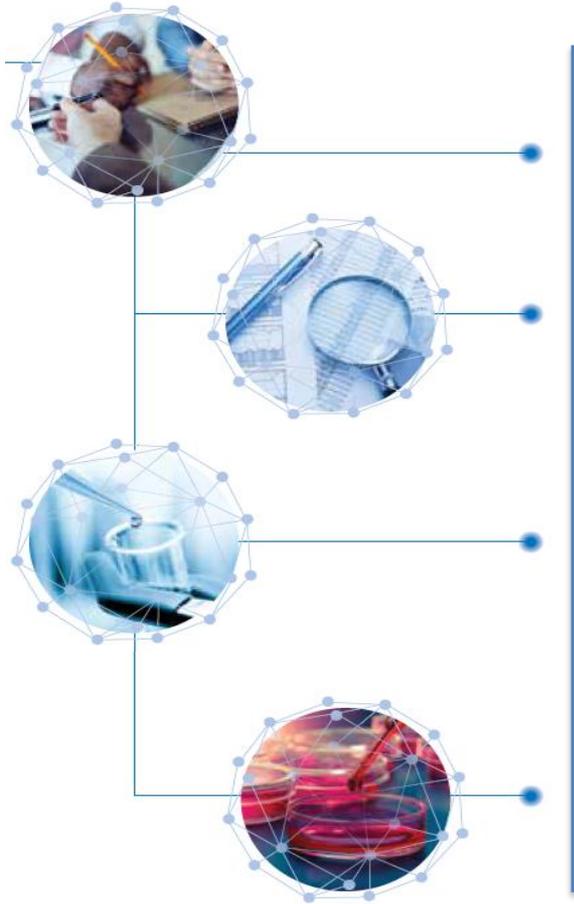
National
Development
Plan 2030

National Strategy
for
Multiwavelength
Astronomy

Science
Engagement
Framework

South African
Research
Infrastructure
Roadmap (SARIR)

NRF Mandate



- supporting, promoting and **advancing research** and **human capacity development**, through funding and the provision of the necessary research infrastructure, in order **to facilitate the creation of knowledge**, innovation and development in all fields of science and technology, including humanities, social sciences and indigenous knowledge;
- developing, supporting and maintaining **national research facilities**;
- supporting and promoting public awareness of, and **engagement with, science**; and
- promoting the **development and maintenance of the national science system** and support of **Government priorities**.



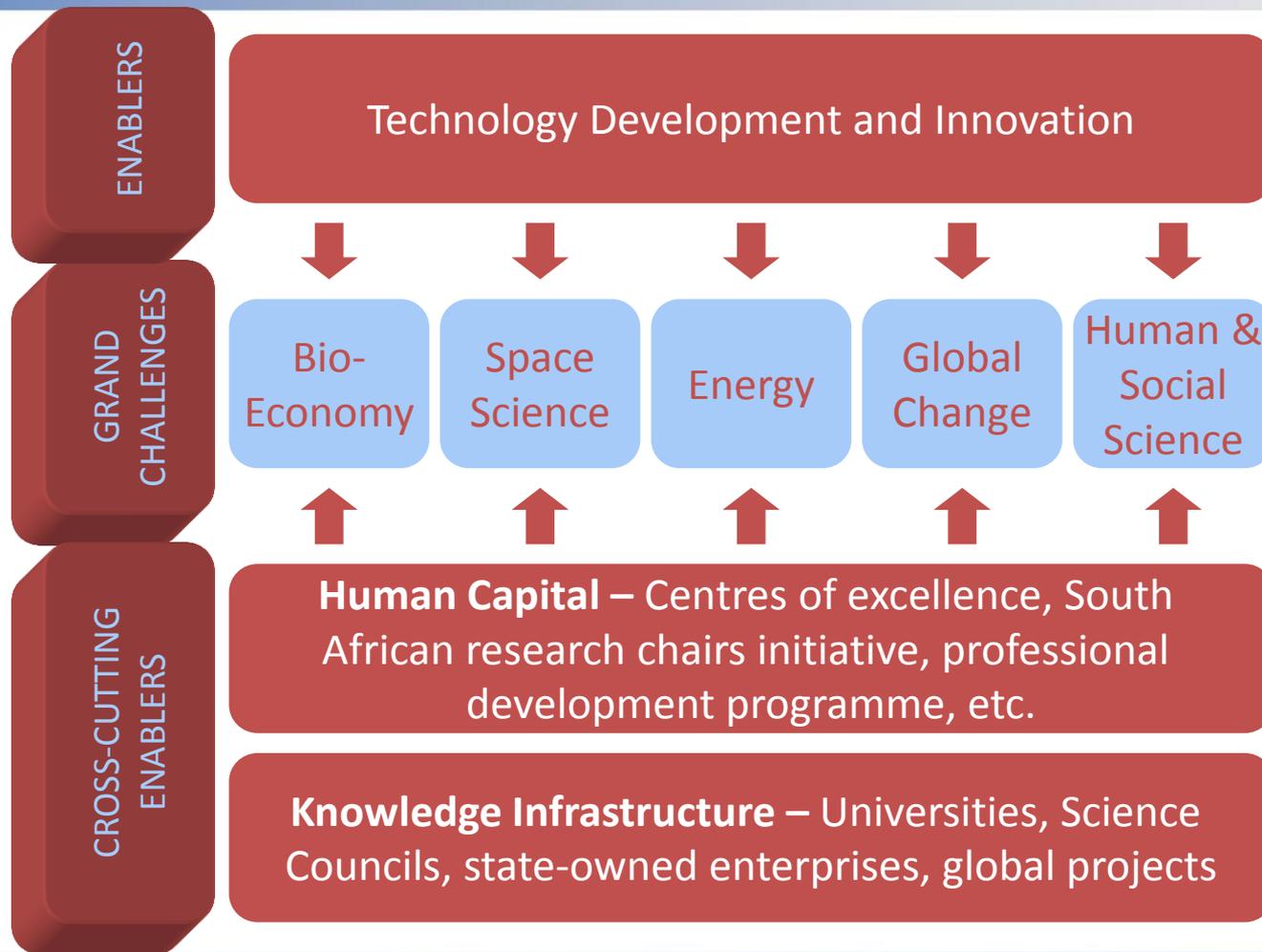
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DST 10-yr Innovation Plan: Grand Challenges



The international environment and priorities

International Science Sector

- Part of the global science sector of Global Research Councils/ Science-Granting Councils
- SDGs, AU's Agenda 2063, AU's Science, Technology & Innovation Strategy for Africa 2024 (STISA - 2024)
- Focus on expanding HCD, knowledge development, infrastructure, innovation & entrepreneurship, STI environment, transformation
- Priorities: poverty, inequality, health, education, environmental concerns, agriculture, innovation, economic growth

Science Councils

- Strategies emphasise measuring impact and discerning **benefit of research for society** (national development).
- Some include evidence of breakthroughs/ impact.
- **Multi-disciplinary approach** to challenges (UK has combined Councils).
- Identify **thematic focus areas** and challenges such as poverty & inequality; environment & global climate change.
- **Engaging society** is emphasised.

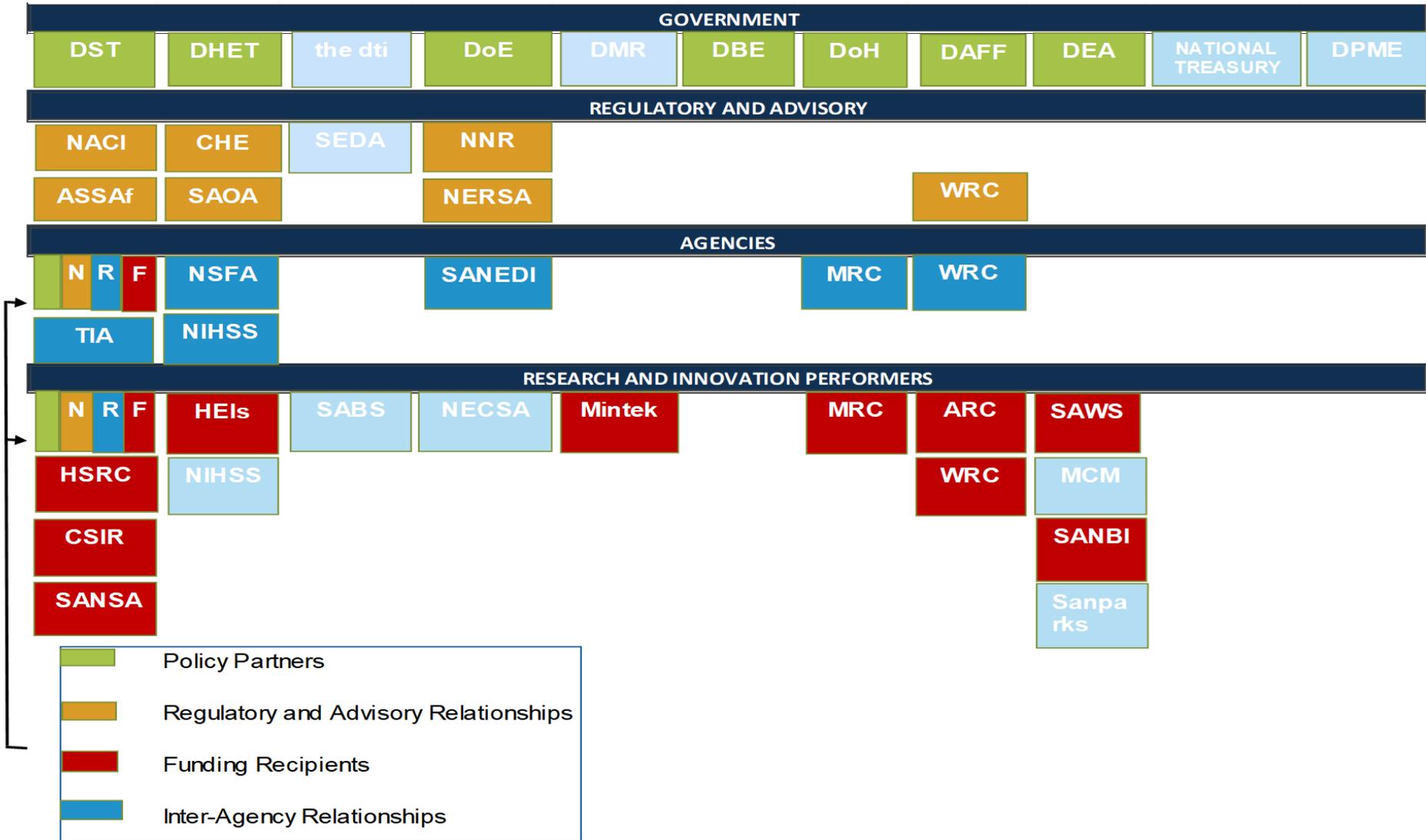
The national environment and priorities

National and NSI context

- National Development Plan: Towards overcoming triple challenge of poverty, inequality and unemployment through interventions in education, science, health etc.
- Coherence of NSI.
- Targets in HCD, SET, knowledge development & innovation – these are needed for delivery in other areas.
- Responses by DST, DHET, Science Councils etc. to meet these targets.

Challenges identified

- DHET – PSET WP & New National Plan & Staffing SA Universities Framework
- DST – WP on STI & HCD
- Coherence NSI & across government.
- Capacity and throughput (limited space, SET pipeline, ageing academics)
- Slow transformation, HDI remains.
- Resources – below target investment in R&D, postgraduate students, infrastructure, new universities.



NRF Global Engagement



GLOBAL INITIATIVES

- A. Newton Fund Collaboration - United Kingdom
- B. BRICS - Brazil, Russia, India, China, South Africa
- C. TWAS - All developing countries
- D. EraAfrica - Africa and Europe
- E. SKA - United Kingdom, Netherlands, Sweden, New Zealand, Italy, India, Germany, China, Canada, Australia, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Botswana, Zambia, Namibia
- F. Science Granting Council Initiative - United Kingdom, Canada, Burkina Faso, Côte d'Ivoire, Ethiopia, Kenya, Malawi, Mozambique, Namibia, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe



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Research funding as vehicle to implement internationalisation, and funding options



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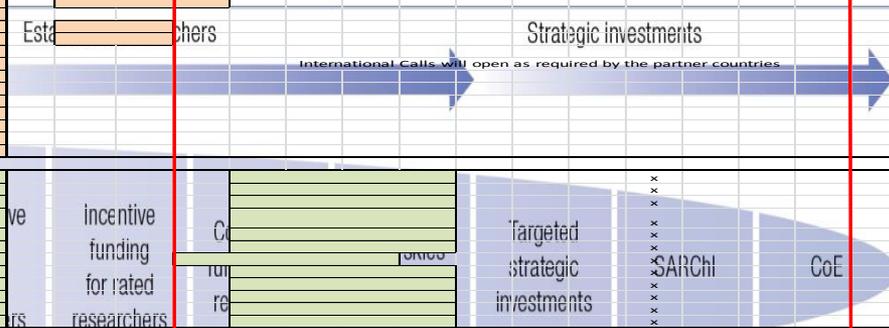
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Human Capital Development Pipeline

		Funding Opportunities Call Schedule for 2017																	
Call category	Funding Instrument	2017												2018					
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
1	African Coelecanth Ecosystem Programme (ACEP)																		
2	Blue Skies Research (Concept Notes)																		
3	Indigenous Knowledge Systems (IKS)																		
4	Foundational Biodiversity Information Programme																		
5	Knowledge Fields Development Grants																		
6	Marine Research Grants (incl. SANCOR)																		
7	SA National Antarctic Programme (SANAP)																		
8	Support for Unrated, Rated and Y-rated Researchers																		
9	Thuthuka																		
10	Brazil (FAPESP) - SA Bilateral																		
11	BRICS Multilateral																		
12	China (NSFC) - SA Bilateral																		
13	EU Co-investment and Seed Funding																		
14	Germany - SA Bilateral																		
15	Iran - SA Bilateral																		
16	Jamaica - SA Bilateral																		
17	Japan (JSPS) - SA Bilateral																		
18	Mexico - SA Bilateral																		
19	Oman - SA Bilateral																		
20	Portugal - SA Bilateral																		
21	SA - Tanzania - Swiss Trilateral Chair																		
22	Sweden (STINT) - SA Bilateral																		
1	Extension Support for Masters and Doctoral Completion																		
2	Germany (DAAD) - NRF Scholarship																		
3	Honours Block Grants (incl. NSFAS)																		
4	Masters & Doctoral Bursaries - Innovation, NRF Free Standing and Science Skills																		
5	National Astrophysics and Space Science Programme (NASSP)																		
6	Renewal & Sustainable Energy Scholarships (M, D)																		
7	Sabbatical Grants to Complete Doctoral Studies																		
8	SA Systems Analysis Centre (SASAC) PhD Programme																		
9	SKA Scholarships Programme																		
10	Students with Disabilities (M, D)																		
11	TWAS Doctoral																		
12	VU - NRF Desmond Tutu Doctoral Scholarships																		
1	Newton Fund Postdoctoral Fellowships																		
2	Postdoctoral Fellowships - Innovation, NRF Freestanding, TWAS																		
1	DST - NRF Conference Fund																		
2	Equipment-Related Travel and Training Grants																		
3	ERC - NRF																		
4	ICSU Grants for Travel and Hosting Events																		
5	ICTP - NRF Bilateral																		
6	Joint Institute for Nuclear Research (JINR) - Student Practice																		
7	JINR Researcher Mobility																		
8	Knowledge Interchange & Collaboration (KIC) Mobility																		
9	SANCOR International Travel Student Awards																		
1	AOP - Research Career Advancement																		
2	Centres of Excellence (CoEs)																		
3	Institutional Engagement Programme Development (IEPD)																		
4	SA Research Chairs Initiative (SARChI)																		
1	National Equipment Programme (NEP)																		
2	Strategic Research Equipment Programme (SREP)																		
1	Collaborative Postgraduate Training (CPT) Block Grant (H.M.D)																		
2	Incentive Funding for Rated Researchers																		
3	Infrastructure Bridging Finance																		
4	nGAP Research Development Grant																		
5	Professional Development Programme (PDP)																		
1	Internship Programme (Applicants)																		
2	Internship Programme (Host Institutions)																		
1	Evaluation and Rating of Individuals																		



International Engagement - Research and HCD -



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Comprehensive Africa Focus

Strategies/ Programmes

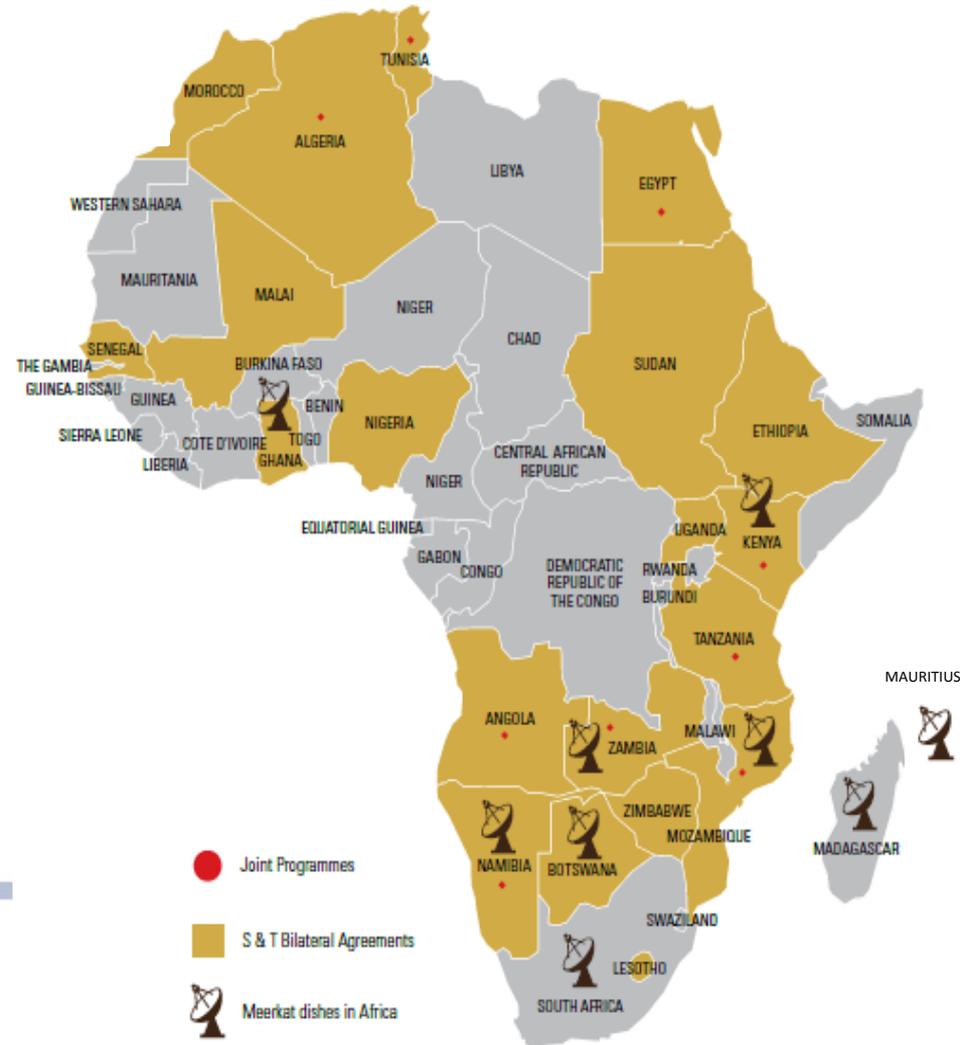
- Future Earth (SA; Rwanda)
- IORA
- GRC
- SGCI
- Africa Flagships: SANWATCE, SANBio, AIMS
- Canada Trilateral Chairs (Africa)
- Africa Bilateral Chairs
- Astronomy Bilateral Chair; VLBI
- LEAP-Agri
- TWAS
- SASAC Africa PhDs
- Strengthening ARUA
- Specific inter-agency agreements
- NFs research and agreements
- OR Tambo Africa Research Chairs

NRF Africa Engagement

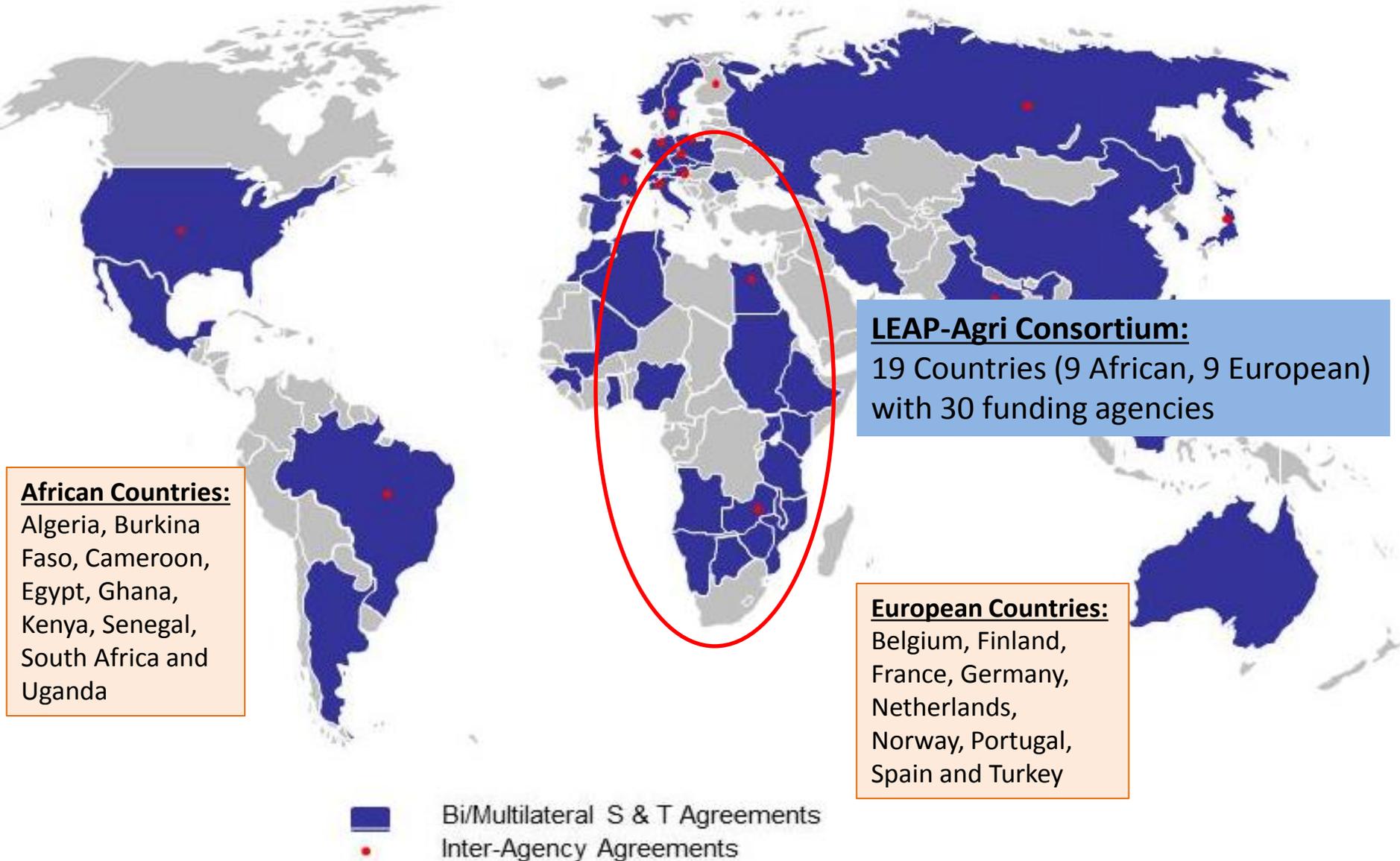
1. AVN

The Africa VLBI Network (AVN) includes 9 African partner countries. SKA SA has:

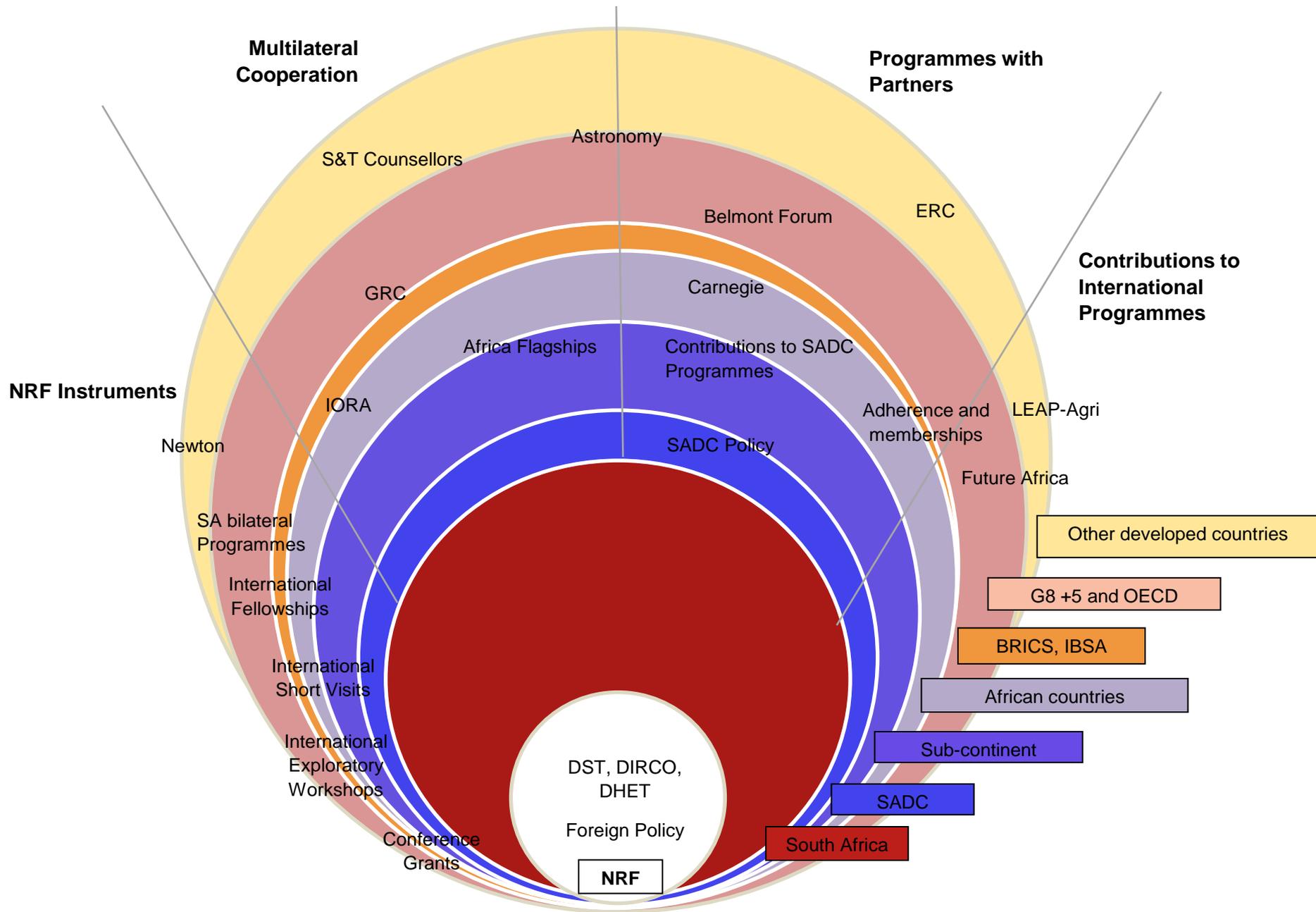
- Awarded 86 bursaries and scholarships to students from the continent (excl SA) of which:
- Trained 18 engineers, 5 of whom were from African partner countries;
- Trained observatory staff:
 - 8 from Ghana
 - 16 from Kenya
 - 13 from Mauritius
 - 1 from Namibia
 - 5 Interns from Partner Countries



2. Theme-based/ multi-country funding (beyond bilaterals, e.g. LEAP-Agri)



Strategic Partnership Matrix



Funding Modalities for PhD Scholarship and Excellence



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NRF Broad Investment Areas

Broad Investment Areas	% of budget
Emerging Researchers	23%
Established Researchers	18%
Strategic Investment Programmes	23%
Strategic Platforms (Including research at the National Research Facilities)	11%
International Initiatives	11%
Applied & Industrial Research & Innovation	14%
TOTAL	100%

Types of Student Funding

Grantholder-linked

Nominated for an award linked to the grantholder's NRF-funded research project

Freestanding

Student individually apply and obtain funding

Block Grants

Funds given as a lump sum to the grantholder/ institution who distributes according to set NRF guidelines



Free-standing Grants

- Innovation Fund Scholarships
- Scarce Skills Scholarships
- NRF Free-standing Scholarships
- DAAD-NRF In-Country Master's and Doctoral Scholarships
- Renewable & Sustainable Energy Fellowships
- Desmond Tutu Doctoral Scholarships
- Green Economy Doctoral & Post-Doctoral
- The World Academy of Sciences (TWAS) Programme
- Early Career Researchers from the UK
- Research Career Awards (RCA)
- SANCOR
- Waste RDI
- Part-time Doctoral Scholarships
- Extension Scholarships for Master's and Doctoral
- Travel Grants

Block Grants

- Honours and Master's Block Grants
- Collaborative Postgraduate Training Programme

Staff Development Grants

- Thuthuka
- nGAP
- Sabbatical Grants

Funding Modalities for PhD Scholarship and Excellence



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PhD Scholarship – international engagement

- Discovery
 - New models
 - Learning
 - Exposure
 - Soft skills
 - Networking
 - Advancing excellence
-
- Affordability
 - Co-creation
 - Co-learning

New Frameworks/ Models

- Global Knowledge Partnerships
- Career Pathways
- Postgraduate Student Funding Framework
- NRF Transformation Framework
 - Slow rate of progress
 - Resources
- Excellence and inclusivity
- National coordination of other international bursaries (DHET)
- *Strategic alignment and coordination*
- *Strong focus on the emerging research cohort*

Selected examples

- NRF-FRF Sabbatical Grants
- DAAD-NRF In-Country Scholarships
- Fulbright-NRF
- SASAC
- SARChI and CoEs
- Large-scale country engagements
 - DAAD Africa CoEs
 - ARUA CoEs
 - OR Tambo Africa Research Chairs
 - Switzerland, Germany, USA

Conclusion

- High premium on PhD scholarship and production
- Strength is in the partnership
- Innovative models of support
 - Leverage funding
- University networks *with* national funding agencies
 - ecosystems of university-led development
- Commitment by government from a policy perspective is key and critical
- Return on investment in various forms
- Strong leadership
 - Shared leadership vision/ organisational culture

Thank you



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