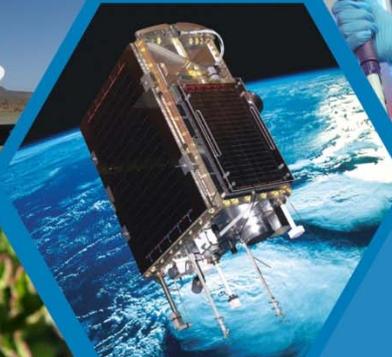


# 2016/17 Annual Report Presentation



**Dr Phil Mjwara**

**Date: 01 November 2017**

**Select Committee of  
Communication and Public Enterprises**



**science  
& technology**

Department:  
Science and Technology  
**REPUBLIC OF SOUTH AFRICA**



# Presentation outline

- ❑ **Purpose**
- ❑ **DST's Vision and Mission**
- ❑ **Alignment to National Priorities**
- ❑ **DST's Overall Performance**
- ❑ **Key 2016/17 Financial Year Achievements**
- ❑ **DST's Projects Across Provinces**
- ❑ **Financial Performance**
- ❑ **Conclusion**

# Purpose



- To present the **DST's Annual Report for the 2016/17 financial year to the Select Committee of Communication and Public Enterprises.**



# DST vision and mission

## Vision

Increased well-being and prosperity through science, technology and innovation.

## Mission

To provide leadership, an enabling environment, and resources for science, technology and innovation in support of South Africa's development.



# Alignment of the DST work to national priorities

**The Department contributes to the following government outcomes of the MTSF:**



***Outcome 2:*** A long and healthy life for all South Africans.



***Outcome 4:*** Decent employment through inclusive economic growth.



***Outcome 5:*** A skilled and capable workforce to support an inclusive growth path.



# Alignment of the DST work to national priorities

**The Department contributes to the following government outcomes of the MTSF:**



***Outcome 6:*** An efficient, competitive and responsive economic infrastructure network.



***Outcome 7:*** Vibrant, equitable and sustainable rural communities and food security for all.

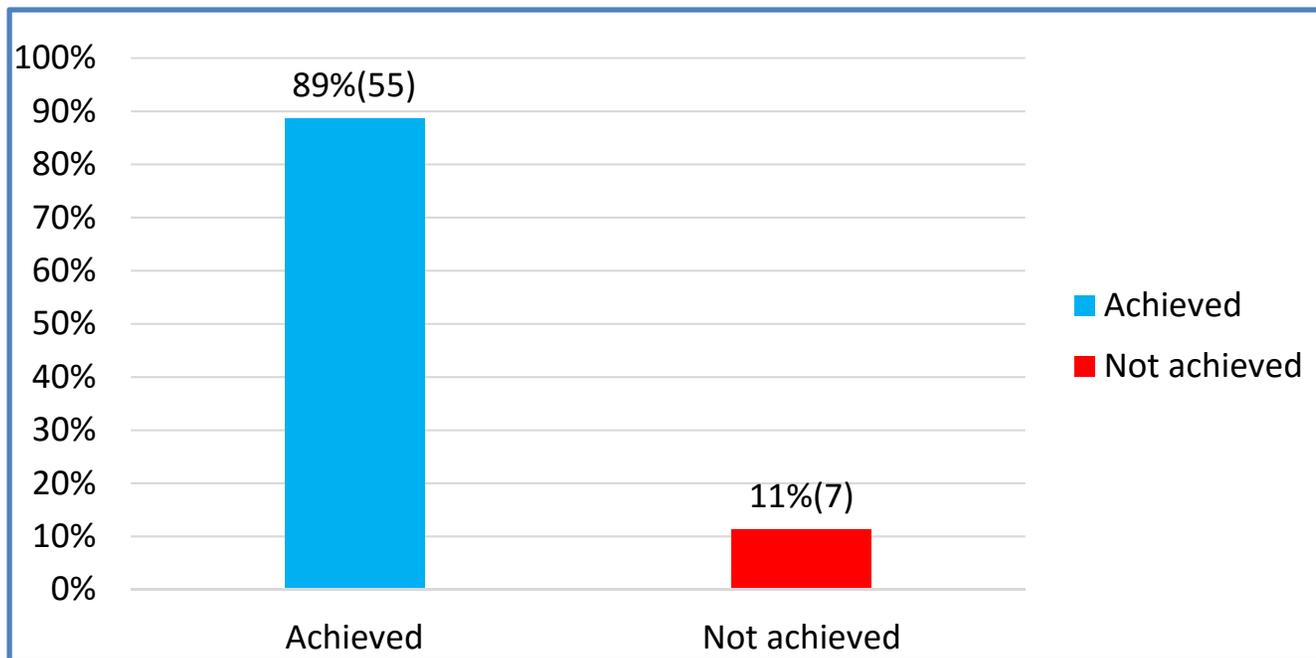


***Outcome 10:*** Environmental assets and natural resources that are well protected and continually enhanced.

# 2016/17 DST overall performance

- Based on the approved 2016/17 Annual Performance Plan (APP) output targets (total number of output targets  $n=62$ ), the Department achieved a total of 55 targets (89%) and 7 targets (11 %) were not achieved (Figure 1).

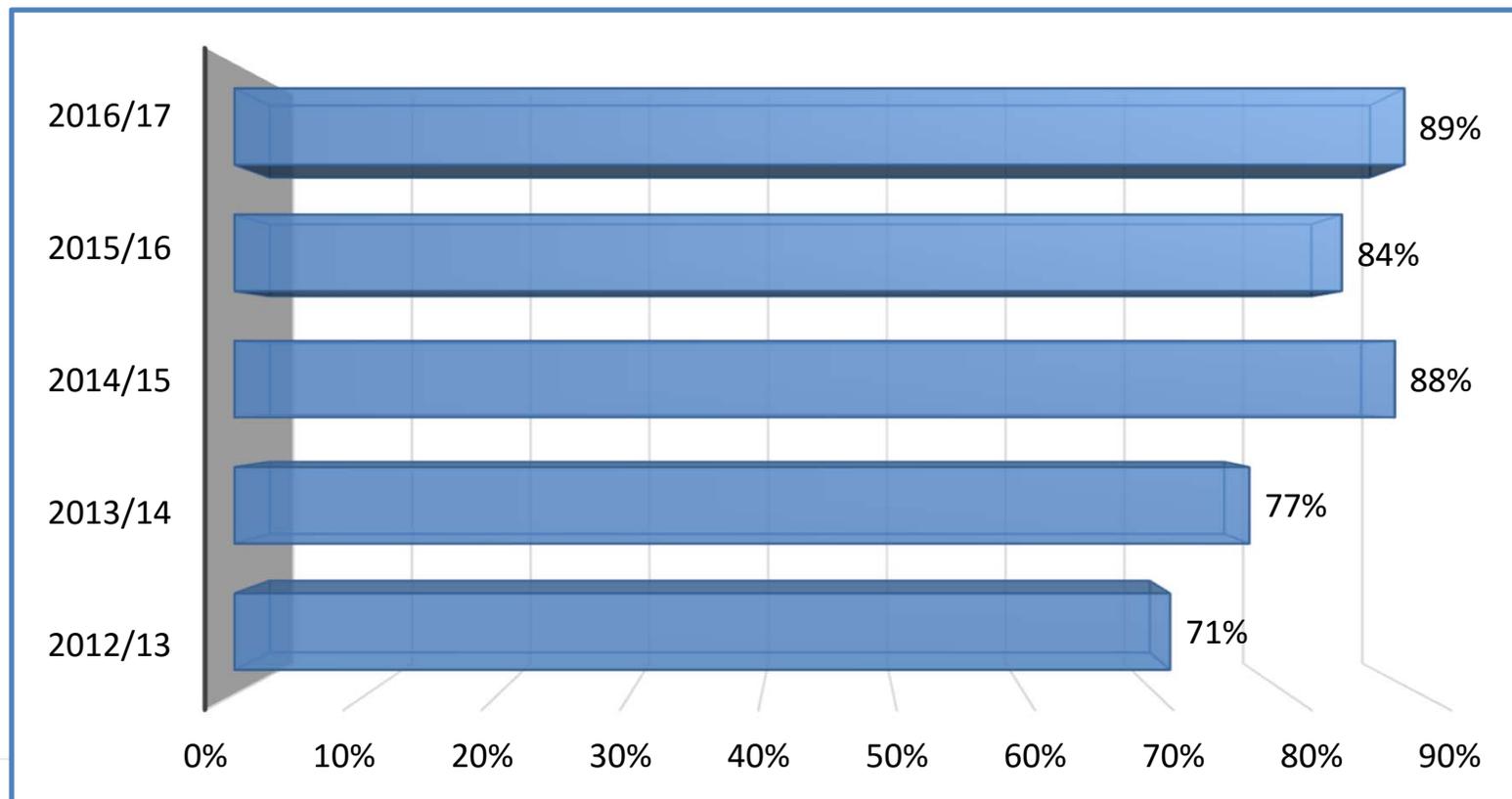
**Figure 1: 2016/17 DST's overall performance**



# DST overall performance

- The DST's performance trend against predetermined objectives has steadily improved over the last five financial years as illustrated in Figure 2 below.

**Figure 2: DST overall 5 year annual performance trend**





**KEY ACHIEVEMENTS PER DST STRATEGIC  
OUTCOME-ORIENTED GOALS**

10/20/2017





# Strategic Outcome-Oriented Goal I



**A responsive,  
coordinated  
and efficient  
NSI**



# Strategic Outcome-Oriented Goal I

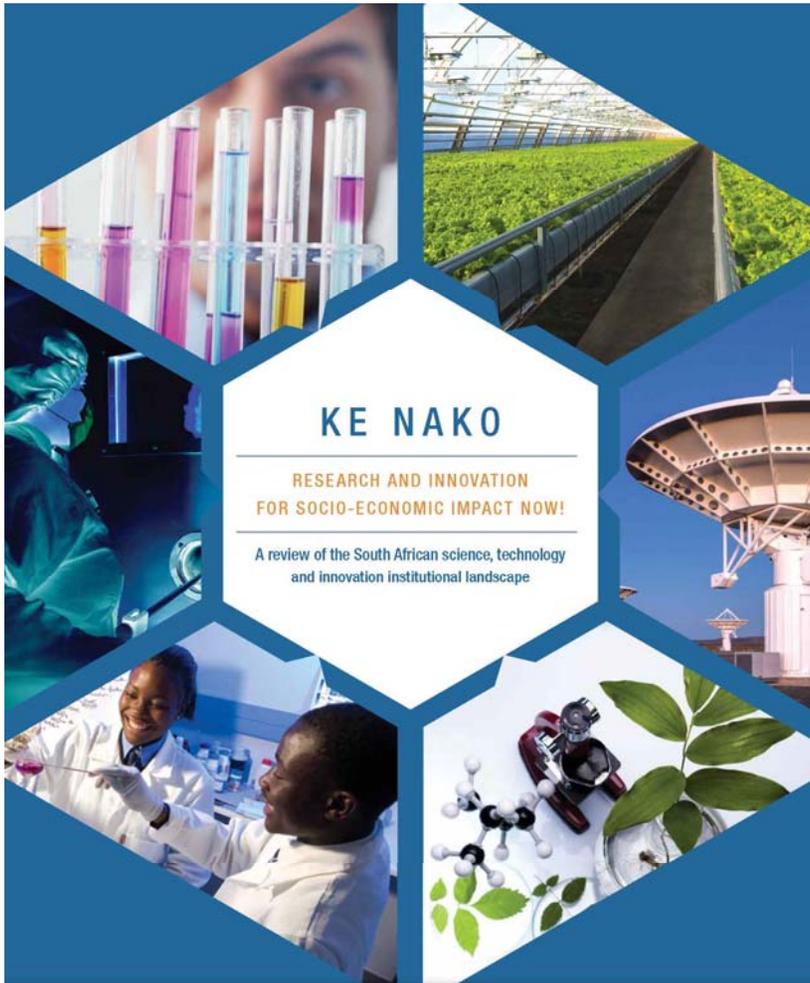
## **A responsive, coordinated and efficient NSI**

- ❑ The DST recognises that if South Africa's economy is to advance along the trajectory set out in the NDP, a strong, coherent and effective NSI is indispensable.

## **During the reporting period, the following can be commended:**

- ✓ The Minister of Science and Technology commissioned the National Advisory Council on Innovation (NACI) to review the 1996 White Paper on Science and Technology. NACI has provided a report to the Minister in this regard.
- ✓ The DST has drafted a new White Paper on STI. The draft document was presented and approved by ESEID Cluster for submission to Cabinet.
- ✓ NACI has been commissioned to produce a framework for a Decadal Plan.

# Strategic Outcome-Oriented Goal I



## A responsive, coordinated and efficient NSI

- ✓ Furthermore, in the period under review, a panel appointed by the Minister to review Science and Technology and Innovation Institutional Landscape (STIIL) submitted its final report to the Minister.
- ✓ The DST initiated a process to improve the coordination of publicly-funded R&D. Cabinet approved that the DST and National Treasury introduce an R&D budget coordination process.



## Strategic Outcome-Oriented Goal 2



**Increased  
knowledge  
generation**



## Strategic Outcome-Oriented Goal 2



### Increased knowledge generation

- ❑ The DST acknowledges that without research grants support, knowledge generation is not possible.
- ✓ During the reporting period, the Department in collaboration with the NRF continued to provide research support to researchers by awarding 4 520 research grants.

## Strategic Outcome-Oriented Goal 2



**CHPC Supercomputer, Cape Town**

### Increased knowledge generation

- ❑ **Provision of research equipment and infrastructure**
- ✓ The National Integrated Cyber Infrastructure System (NICIS) is an integration of the currently existing cyberinfrastructure components (CHPC, SANReN and DIRISA) implemented by the DST since 2016/17.
- ✓ NICIS integrates high performance computing and data management services with the national research network to support data-intensive research projects.



## Strategic Outcome-Oriented Goal 2

- ❑ During the 2016/17 financial year:
- ✓ The CHPC “Lengau” supercomputer was upgraded to a 1 petaflop; and
- ✓ The contracts for the implementation of the National e-Science Postgraduate Teaching and Training Platform and the Western Cape DIRISA Tier 2 Data Intensive Research Facility were signed.
- ✓ Tier 1 refers to national infrastructure, Tier 2 is regional infrastructure and Tier 3 is institutional infrastructure.

## Strategic Outcome-Oriented Goal 2



**MeerKAT, Northern Cape**

### Increased knowledge generation

- ❑ **Provision of research equipment and infrastructure**
- ✓ Furthermore, 62 pedestals were installed and 58 dishes lifted.
- ✓ The MeerKAT "first light" image of the radio sky produced with ARI showed more than 1 300 radio galaxies in the distant universe.
- ✓ These results demonstrate that the ARI MeerKAT is already the best radio telescope in the Southern Hemisphere, and confirm that, when completed, the MeerKAT would be the world's best telescope of its kind.

## Strategic Outcome-Oriented Goal 2



**Kutunse telescope, Ghana**



**President of Ghana Akufo-Addo and  
Minister Pandor at Kutunse**

### Increased knowledge generation

- ❑ **Provision of research equipment and infrastructure**
- ✓ As part of the African Very Long Baseline Interferometry Network initiative, the Kutunse telescope in Ghana was funded for refurbishment and it has produced its “first light” image which is a sign of readiness to collect data.
- ✓ This initiative was funded through the African Renaissance Fund of the Department of International Relations and Cooperation (DIRCO).

## Strategic Outcome-Oriented Goal 3



**Human capital  
development**



# Strategic Outcome-Oriented Goal 3

## Increased knowledge generation

- ✓ **Research grants:** During the 2016/17 financial year, the DST awarded 4 528 research grants: 35% went to black researchers; and 38% went to women.
- ✓ **Bilateral research chairs:** The SA-UK bilateral three research chairs were awarded to the universities of Nelson Mandela, Witwatersrand and the Western Cape.
- ✓ **Data Science:** The Data Science for Impact and Decision Enablement had a student intake of 51 in 2016/17. The students get exposure to the ever-changing field of data science through placement in mentor guided and learn-by-doing problem-solving of real world needs as presented by government, industry and other agencies. The students are selected through a competitive process, and get the exposure during vacations.



## Strategic Outcome-Oriented Goal 3

### Human capital development

- ✓ The Minister and Director-General led delegations to historically black higher education institutions to gain insight into the reality of research activities at the institutions.

### Among other things, the following actions were proposed:

- ✓ The DST needs to liaise with the Department of Higher Education and Training (DHET) on the deployment of the New Generation of Academics Programme (nGAP) to historically disadvantaged HEIs in order to build staff capacity.
- ✓ The DST should also engage the NRF on developing a new institutional research capacity.
- ✓ There is a need for a development programme for historically disadvantaged institutions, aligned with DHET's differentiation framework for the HEI sector.



## Strategic Outcome-Oriented Goal 3

### Human capital development

#### ***Bursaries awarded through NRF and DST programmes***

- ✓ During the reporting period, the DST made substantial investments through instruments aimed at boosting human capital development (HCD) in priority areas.
- ✓ 3 454 PhD students, and
- ✓ 10 268 pipeline postgraduate students (honours and master's students).

#### ***Other HCD initiatives***

- ✓ During the reporting period, the SKA SA celebrated its 10th anniversary of HCD programme achievements.
- ✓ More than 730 university academics, postdoctoral researchers, postgraduate and undergraduate students, as well as artisan trainees, were supported.
- ✓ In addition, 133 students from other countries in Africa were supported (91 students are from SKA partner countries).



## Strategic Outcome-Oriented Goal 3

### Human capital development

#### ***Interns supported***

- ✓ The DST-NRF Internship programme supports the government's initiative of addressing youth unemployment by placing students and graduates in STI working environments.
- ✓ A total of 1 178 graduates and students were placed in DST-funded work preparation programmes in SETI institutions.

#### ***Publications***

- ✓ 8 156 research articles published by DST funded researchers and cited in the Thomson Reuters (TR) Web of Science Citation Database.

#### ***Science engagements***

- ✓ A total of 2 066 134 participants were reached through the science awareness and engagement programmes of the DST, entities and science centres.



## Strategic Outcome-Oriented Goal 4



**Using knowledge  
for economic  
development**



## Strategic Outcome-Oriented Goal 4

### **Using knowledge for economic development**

- During the reporting period, the DST continued to encourage industry innovation partnerships as part of a broader government effort to support industry competitiveness.
- The DST's contribution towards creating decent work and skills for South Africans is beginning to yield benefits for the country.



## Strategic Outcome-Oriented Goal 4



**Nanomaterials Industrial Development Facility CSIR**

### **Nanomaterials Industrial Development Facility**

#### **CSIR**

- ✓ 6 industry partnerships established.
- ✓ Scaling up nano-based innovations to industrial and commercial levels.



## Strategic Outcome-Oriented Goal 4



**Photonics Prototyping Facility**

### □ Photonics Prototyping

#### Facility

- ✓ Photonics is an area under Emerging Research Areas.
- ✓ The Department has supported the development of photonics based prototypes through the CSIR.
- ✓ There has been a promising pipeline with applications in healthcare, defence, security and communications developed.

## Strategic Outcome-Oriented Goal 4



**Biomanufacturing Industry Development  
Centre, CSIR**

### □ **Biomanufacturing Industry Development Centre (BIDC)**

- ✓ During the 2016/17 financial year, the DST and the CSIR launched the BIDC, a hub for innovation in the biomanufacturing sector aimed at supporting small and medium enterprises (SMEs) involved in biomanufacturing.

## Strategic Outcome-Oriented Goal 4



**Heliolab Stellenbosch, NMU, Western Cape**

### Using knowledge for economic development

#### ❑ Helio 100

- ✓ A 100% South African heliostat technology is being developed for the fast growing Concentrating Solar Power industry.
- ✓ Heliolab was set up by Stellenbosch as university spin out to commercialise Helio 100 technology.
- ✓ To date progress has been slow as Heliolab has been unable to source funding for demonstrations with commercial partners.



## Strategic Outcome-Oriented Goal 4



**Coalgae initiative, NMU, Eastern Cape**

### Using knowledge for economic development

#### ❑ **Coalgae-Coal as a part of South Africa's sustainable future**

- ✓ To support South Africa's transition to a low carbon economy as well as to support the Biofuels Industrial Strategy for South Africa, the DST supported a Biofuels Technology Demonstration Programme at the Nelson Mandela University (NMU) which led to Coalgae.
- ✓ Coalgae is a mixture of coal dust and algae biomass.



## Strategic Outcome-Oriented Goal 4



**Coalgae Charcoal**

### Using knowledge for economic development

- ❑ **Coalgae-Coal as a part of South Africa's sustainable future**
  - ✓ To date, the NMU has filed a patent application for Coalgae and NMU was granted a trademark for Coalgae as well.
  - ✓ Recently Eskom Research Testing and Development Unit finalised independent tests of Coalgae.

## Strategic Outcome-Oriented Goal 4



**New manufacturing processes from additive manufacturing**



**Aerospace Industry Support Initiative**

### **Using knowledge for economic development**

#### **❑ Aeroswift industrialisation and commercialisation**

- ✓ A significant milestone was reached in December 2016, with the manufacturing of the first real component (a throttle handle for the locally developed Advanced High-Performance Reconnaissance Light Aircraft (AHRLAC)).

## Strategic Outcome-Oriented Goal 4



### Using knowledge for economic development

#### ❑ Aeroswift industrialisation and commercialisation

- ✓ Aeroswift is a collaborative partnership, funded by the DST, between the National Laser Centre at the CSIR, and the Aerosud Innovation and Training Centre.
- ✓ The development of the Aeroswift machine is currently in the second phase of development, namely process evaluation and optimisation.



## Strategic Outcome-Oriented Goal 4

### Using knowledge for economic development

#### ❑ Supported small-scale agro-processing enterprises

As part of the DST's contribution to food security, during the reporting period the following initiatives can be commended:

- ✓ In partnership with amongst others, the ARC, the University of Venda and the Limpopo Department of Agriculture, the DST has funded the development of a new community-based agro-processing facility based on indigenous crops at Makonde village, in Thohoyandou.
- ✓ A wheat-breeding platform was established and funded. It is being developed in partnership with GrainSA and co-funded by the Winter Cereal Trust.



## Strategic Outcome-Oriented Goal 4

### Using knowledge for economic development

#### ❑ Supported small-scale agro-processing enterprises

- ✓ The initiative will support the local cultivation of wheat, the bulk of which is currently being imported.
- ✓ Furthermore, the DST funded the Soybean Improvement Programme which focuses on the development of appropriate technologies on the increased palatability of soybean as an alternative food source.
- ✓ The direct outputs are development and training of entry-level soya entrepreneurs by supporting economic growth for emerging farmers.



## Strategic Outcome-Oriented Goal 5



**Knowledge  
utilisation for  
inclusive  
development**



## Strategic Outcome-Oriented Goal 5

### Knowledge utilisation for inclusive development

#### *Innovation towards a decent standard of living*

- ✓ The Strategic Health Innovation Partnerships (SHIP) is the DST's flagship programme aimed at facilitating the research and development of medicines.
- ✓ During the 2016/17 financial year, and building on work from the previous financial years, the programme led to the development of an additional anti-malaria candidate with a potential for both treating and preventing malaria.
- ✓ This discovery has the potential to block transmission of the parasite from person to person and could therefore contribute to the eradication of malaria.
- ✓ The next phase of the project would include validation studies in humans, since there is a high malaria burden.



## Strategic Outcome-Oriented Goal 5

### Knowledge utilisation for inclusive development

#### *Innovation towards a decent standard of living*

- ✓ Another groundbreaking initiative for using knowledge and innovation for inclusive development is a Multi-African States Foot-and Mouth Disease Rapid Response.
- ✓ This programme focuses on livestock disease management through the development of diagnostics and technologies that will support and inform policies to assist in managing notifiable diseases such as foot-and mouth disease.

# Strategic Outcome-Oriented Goal 5



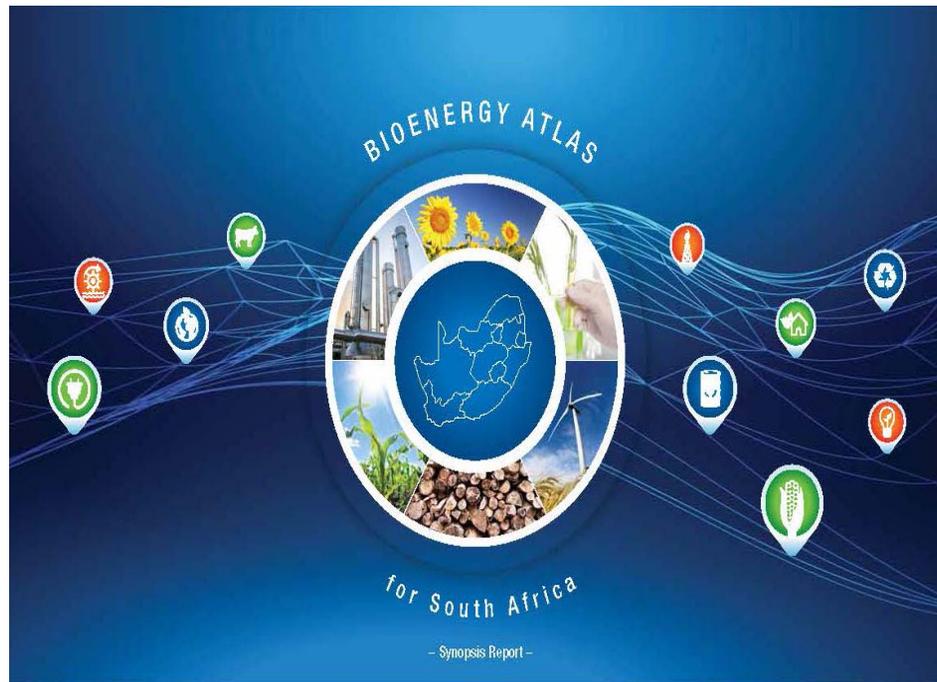
Hysa initiative, Cofimvaba, Eastern Cape

## Knowledge utilisation for inclusive development

- ❑ *Targeted decision support*
- ✓ The Department continued to lead the demonstration of targeted decision support through innovative technology solutions to improve the delivery of basic services in distressed rural municipalities.

# Strategic Outcome-Oriented Goal 5

## Knowledge utilisation for inclusive development



- ✓ The DST developed the Bioenergy Atlas for South Africa to facilitate the transition towards a cleaner, inclusive and sustainable energy system.
- ✓ The Bioenergy Atlas is a web-based decision-making support tool that is targeting both energy policy makers and the potential investors in the energy sector.



## Strategic Outcome-Oriented Goal 5

### Knowledge utilisation for inclusive development

#### *Targeted decision support*

- ✓ The DST's investment in ICT RDI has grown significantly and is aligned to the national priorities.
- ✓ The notable DST investment in this area is the expansion of the mLab (mobile laboratory) initiative beyond Gauteng and the Western Cape to include the provinces of Limpopo, Northern Cape and KwaZulu-Natal.
- ✓ The initiative began a start-up incubator for mobile application developers including coding skills academies, lean innovation and co-creation programmes for students and industry.
- ✓ Signs of mobile applications have emerged from these companies, addressing socio-economic challenges in areas such as transport, health, education, tourism and gaming.



# OVERVIEW OF PERFORMANCE PER PROGRAMME

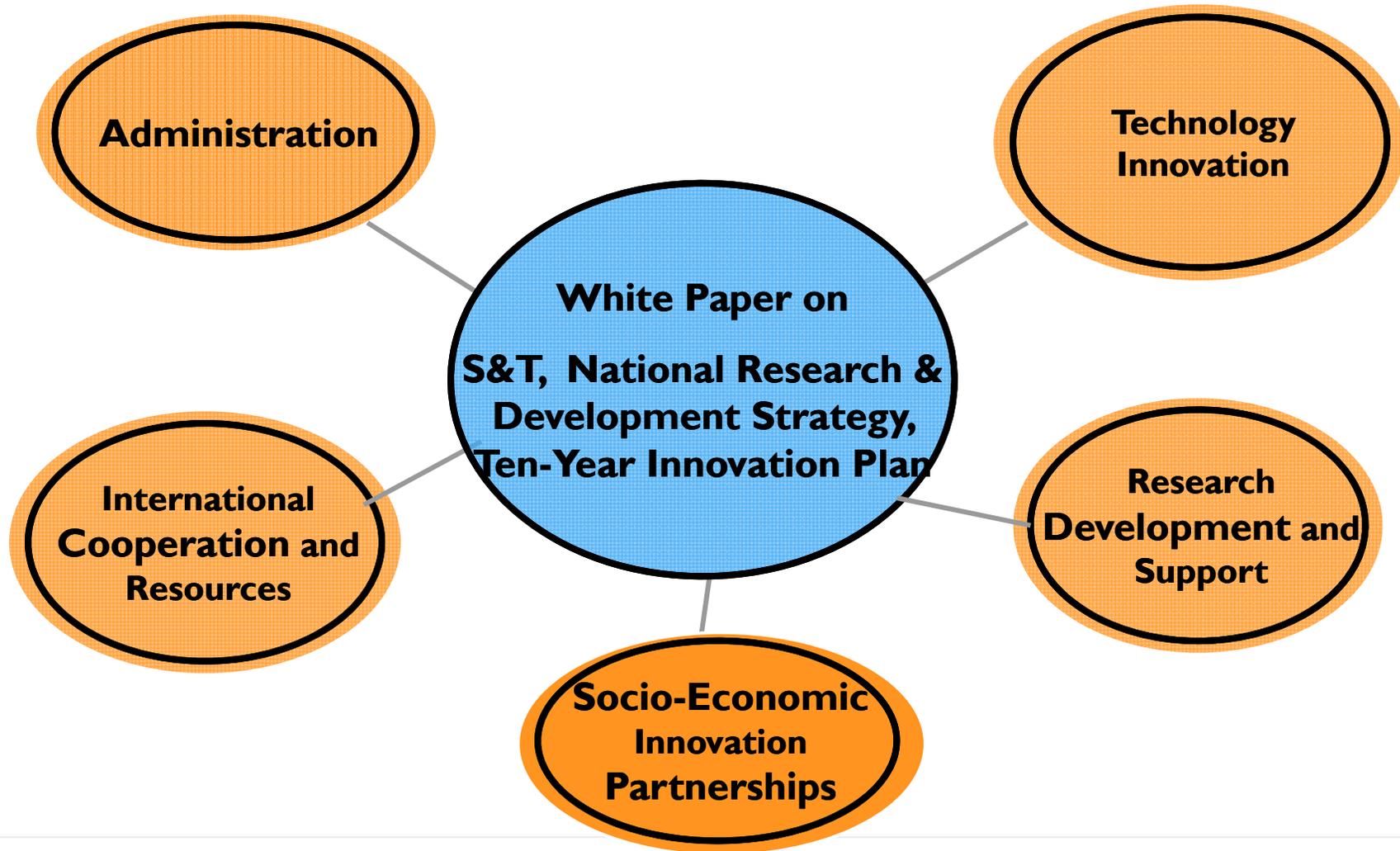


## PROGRAMME PERFORMANCE OVERVIEW

10/20/2017



# DST's Programmes





# Annual DST's Performance per Programme

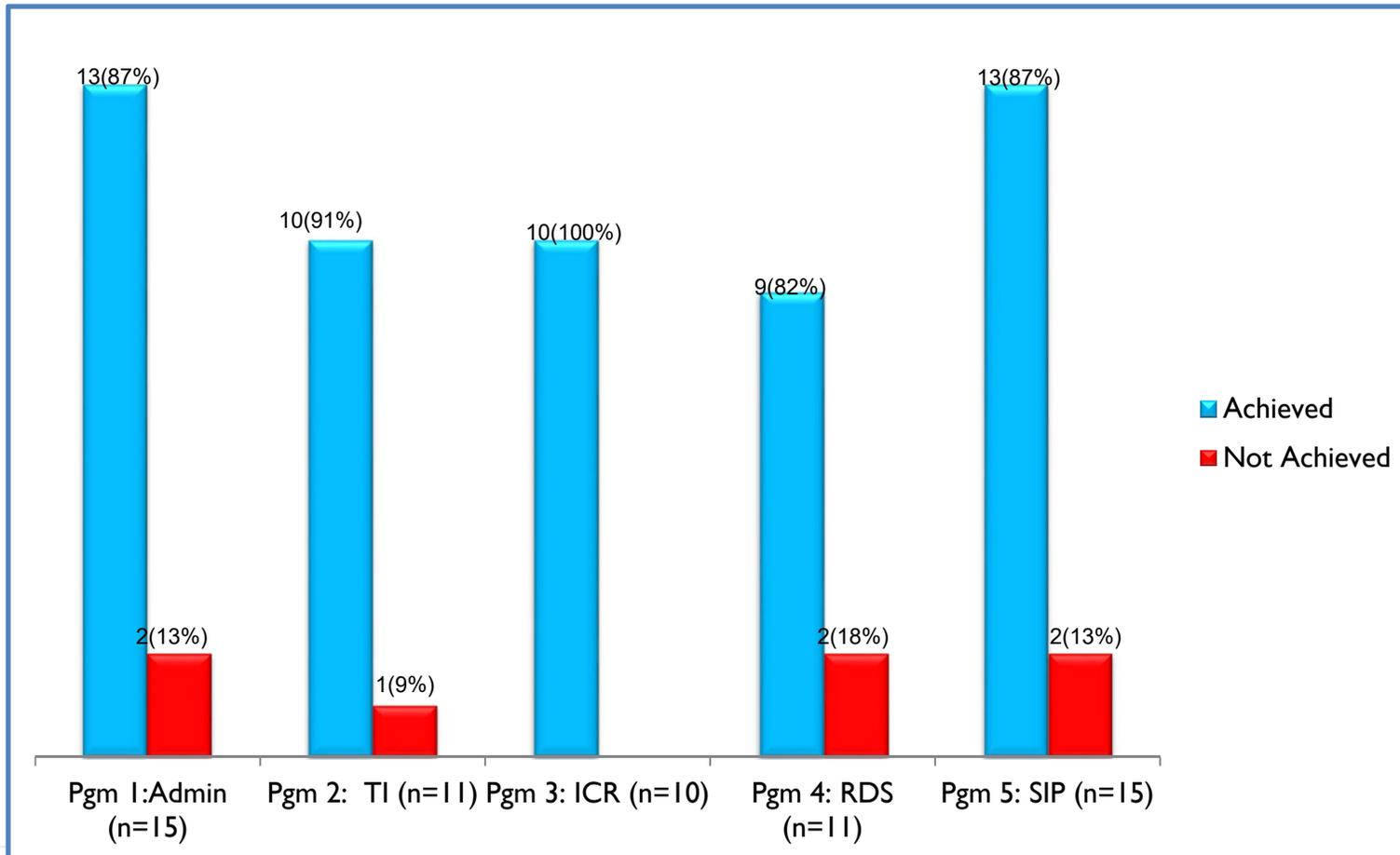
Figure 3 below illustrates the annual performance of the Department per Programme.

- ❑ Programme 1 achieved 87% of its targets and 13% of its targets were not achieved.
- ❑ Programme 2 achieved 91% of its targets and 9% of its targets were not achieved
- ❑ Programme 3 achieved 100% of its targets and there were no unachieved targets.
- ❑ Programme 4 achieved 82% of its targets and 18% of its targets were not achieved.
- ❑ Programme 5 achieved 87% of its targets and 13% of its targets were not achieved.

***N.B For the purpose of the presentation, the annual Programme's performance achievements were sampled in the tables below. The detailed information thereof is in the Annual Report.***

# Annual DST's Performance per Programme

Figure 3 : The DST's performance per Programme



# DST Programmes

## Purpose of the Programme (I)

### □ Programme I: Administration

To conduct the overall management and administration of the Department.



AUDITOR - GENERAL  
SOUTH AFRICA

*Auditing to build public confidence*



# Sampled Programme I Performance

## 2016/17 annual achievements - Programme I : Administration

Annual Target	Actual Achievement	Status
Minimum of 90% alignment of DST planning documents for 2017/18 (APP aligned to Strategic Plan) submitted to Parliament by 31 March 2017	Minimum of 90% alignment of DST planning documents for 2017/18 (APP aligned to Strategic Plan) submitted to Parliament by 31 March 2017	Achieved
90% alignment Between 2016 DST ENE and 2016/17 APP by 31 March 2017	90% alignment in DST strategic priorities and entities' APPs by 31 March 2017	Achieved
DST public entities' 2017/18 strategic and annual performance plans approved by the Minister and shareholder compacts signed by the Minister and chairpersons of the boards by 31 March 2017	DST's public entities' 2017/18 strategic and annual Performance plans approved by the Minister and shareholder compacts signed by the Minister and chairpersons of the boards by 31 March 2017	Achieved



# Sampled Programme I Performance

## 2016/17 annual achievements - Programme I : Administration

Annual Target	Actual Achievement	Status
90% alignment in DST strategic priorities and entities' APPs by 31 March 2017	Assessment reports (i.e. feedback reports) on level of 90% alignment were analysed and feedback provided by 28 March 2017	Achieved
Four DST 2016/17 quarterly performance reports approved by Exco and signed by the DG 60 days after the end of each quarter	Four DST 2016/17 quarterly Performance reports approved by Exco and signed by the DG 60 days after the end of each quarter	Achieved
One DST 2015/16 annual performance report approved by Exco and signed by the DG by 31 May 2016	One DST 2015/16 Annual Performance report approved by Exco and signed by the DG 31 May 2016	Achieved

## Purpose of the Programme (2)

### □ Programme 2: Technology Innovation

To enable research and development in strategic and emerging focus areas to promote the realisation of commercial products, processes and services from R&D outputs; through the implementation of enabling policy instruments.





# Sampled Programme 2 Performance

## 2016/17 annual achievements - Programme 2 :Technology Innovation

Annual Target	Actual Achievement	Status
25 instruments funded in support of knowledge utilisation by 31 March 2017	25 instruments funded in support of knowledge utilisation by 31 March 2017	Achieved
119 knowledge products generated by 31 March 2017	168 knowledge products generated by 31 March 2017	Achieved
12 evaluation and assessment reports developed and approved by Exco by 31 March 2017	12 evaluation and assessment reports developed and approved by Exco by 31 March 2017	Achieved



# Sampled Programme 2 Performance

## 2016/17 annual achievements - Programme 2 :Technology Innovation

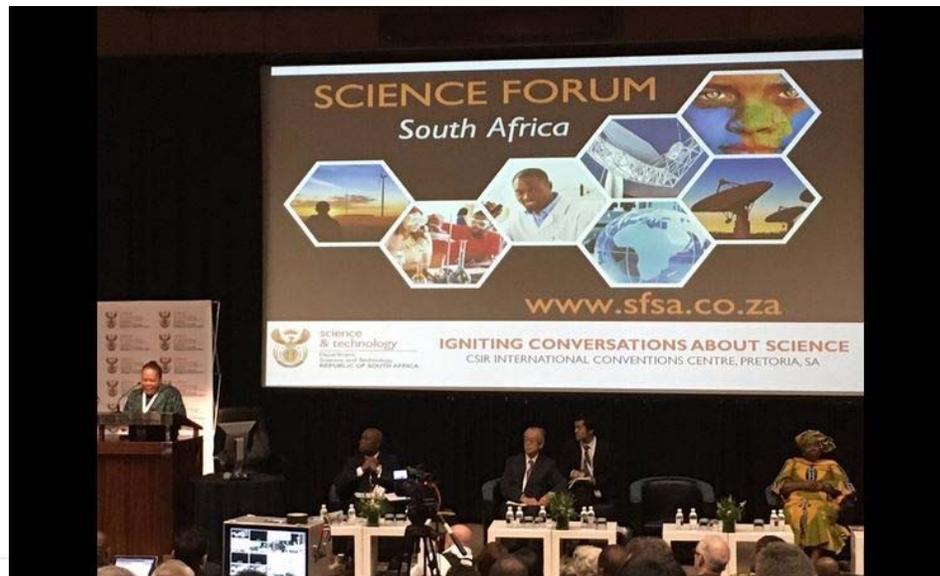
Annual Target	Actual Achievement	Status
27 regulatory recommendations for decision support by government by 31 March 2017	27 regulatory recommendations for decision support by government by 31 March 2017	Achieved
Two decision support interventions maintained by 31 March 2017	Three decision support Interventions maintained by 31 March 2017	Achieved
Five technology development and innovation policy directives developed and adopted by government by 31 March 2017	Seven technology development and innovation policy directives developed and adopted by government	Achieved

# DST Programme

## Purpose of the Programme (3)

### □ Programme 3: International Cooperation and Resources

This Programme aims to strategically develop, promote and manage international relationships, opportunities and S&T agreements that strengthen the NSI and enable an exchange of knowledge, capacity and resources between South Africa and its regional and international partners.





# Sampled Programme 3 Performance

## 2016/17 annual achievements - Programme 3: International Cooperation and Resources

Annual Target	Actual Achievement	Status
R400 million in International funds directly invested in research, innovation and STI HCD programmes as well as research Infrastructure investments in South Africa accounted for as part of cooperation initiatives implemented by the DST by 31 March 2017	R689 million in international funds directly invested in research, innovation and STI HCD programmes including research infrastructure investment in South Africa as part of cooperation initiatives implemented by the DST by 31 March 2017	Achieved



# Sampled Programme 3 Performance

## 2016/17 annual achievements - Programme 3: International Cooperation and Resources

Annual Target	Actual Achievement	Status
R230 million invested by International partners in their own organisations and initiatives, but targeted at cooperation in research, innovation and STI HCD with South African partners as part of cooperation Initiatives implemented by the DST by 31 March 2017	Total of R1,253 billion invested by international partners in their own organisations and initiatives but targeted at cooperation in research, innovation and STI HCD with South African partners as part of cooperation initiatives implemented by the DST by 31 March 2017	Achieved

# Sampled Programme 3 Performance

## 2016/17 annual achievements - Programme 3: International Cooperation and Resources

Annual Target	Actual Achievement	Status
150 South African students participating in international training Programmes offering a Postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 Mar. 2017	210 South African students participating in international training Programmes offering a Postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 March 2017	Achieved
450 international partner organisations (i.e. legal entities) collaborating with South African partners within the framework of formalised collaborative research, innovation or STI HCD projects as part of cooperation initiatives facilitated by the DST by 31 March 2017	668 international partner Organisations collaborating with South African partners within the formalised framework of collaborative research innovation or STI HCD projects a part of cooperation initiatives facilitated by the DST by 31 March 2017	Achieved

# Sampled Programme 3 Performance

## 2016/17 annual achievements - Programme 3: International Cooperation and Resources

Annual Target	Actual Achievement	Status
30 research, Innovation and STI HCD cooperation projects co-funded or supported in kind by DST and at least one other African government by 31 March 2017	54 research, innovation and STI HCD cooperation projects co-funded or supported in kind by the DST DST and at least one other African government	Achieved
R70 million in international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DST facilitation by 31 March 2017	R388 million in international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DST facilitation by 31 March 2017	Achieved

# DST Programmes

## Purpose of the Programme (4)

### □ Programme 4: Research Development and Support

Provide an enabling environment for research and knowledge production that promotes strategic development of basic sciences and priority science areas, through science promotion, human capital development, the provision of research infrastructure and relevant research support in pursuit of South Africa's transition to a knowledge economy.





# Sampled Programme 4 Performance

## 2016/17 annual achievements - Programme 4: Research Development and Support

Annual Target	Actual Achievement	Status
3 136 PhD students awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2017	3 454 PhD students awarded bursaries as reflected from the NRF through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2017	<b>Achieved</b>
840 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2017	962 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2017	<b>Achieved</b>



# Sampled Programme 4 Performance

## 2016/17 annual achievements - Programme 4: Research Development and Support

Annual Target	Actual Achievement	Status
70 research infrastructure grants awarded as per award letters by 31 March 2017	72 research infrastructure grants awarded as per award letters by 31 March 2017	Achieved
3 500 Mbps average bandwidth available per SANReN site by 31 March 2017	3 537 Mbps average bandwidth available per SANReN site by 31 March 2017	Achieved



# Sampled Programme 4 Performance

## 2016/17 annual achievements - Programme 4: Research Development and Support

Annual Target	Actual Achievement	Status
7 000 research articles published by NRF-funded researchers and cited in the TR database as reflected in the NRF project reports by 31 March 2017	8 156 research articles published by NRF-funded Researchers and cited in the Thomson Reuters (TR) Web of Science Citation Database as reflected in the NRF project reports by 31 March 2017	Achieved



# Sampled Programme 4 Performance

## 2016/17 annual achievements - Programme 4: Research Development and Support

Annual Target	Actual Achievement	Status
Submission to the DDG of a report on existing climate change research initiatives and networks by 31 March 2017	A report on existing climate change research networks was submitted to the DDG by 31 March 2017	Achieved
One (first biennial) report on the state of climate change S&T in South Africa finalised and submitted for Cabinet approval by 31 March 2017	One (first biennial report) on the state of climate change S&T in South Africa was approved by Cabinet by 31 March 2017	Achieved

# DST Programme 5

## Purpose of the Programme (5)

### □ Programme 5: Socio-Economic Innovation Partnerships

This Programme enhances the growth and development priorities of government through targeted S&T-based innovation interventions and the development of strategic partnerships with other government departments, industry, research institutions and communities.





# Sampled Programme 5 Performance

## 2016/17 annual achievements - Programme 5: Socio-Economic Innovation Partnership

Annual Target	Actual Achievement	Status
Four knowledge products (two case studies) were completed and published on the DST website by 31 March 2017	Five knowledge products were completed and published on the DST website by 31 March 2017	Achieved
Seven decision support systems maintained and improved by 31 March 2017	Seven decision support system maintained and improved throughout the year	Achieved
Nine learning interventions (seminars) generated by 31 March 2017	Ten learning interventions generated by 31 March 2017	Achieved



# Sampled Programme 5 Performance

## 2016/17 annual achievements - Programme 5: Socio-Economic Innovation Partnership

Annual Target	Actual Achievement	Status
55 honours, master's and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2017	102 honours, master's and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2017	Achieved
Four knowledge and innovation products (patents, prototypes, technology Demonstrators and technology transfer packages) added to the IP portfolio through fully funded or ofunded research by 31 March 2017	Four knowledge and innovation products added to the IP portfolio	Achieved



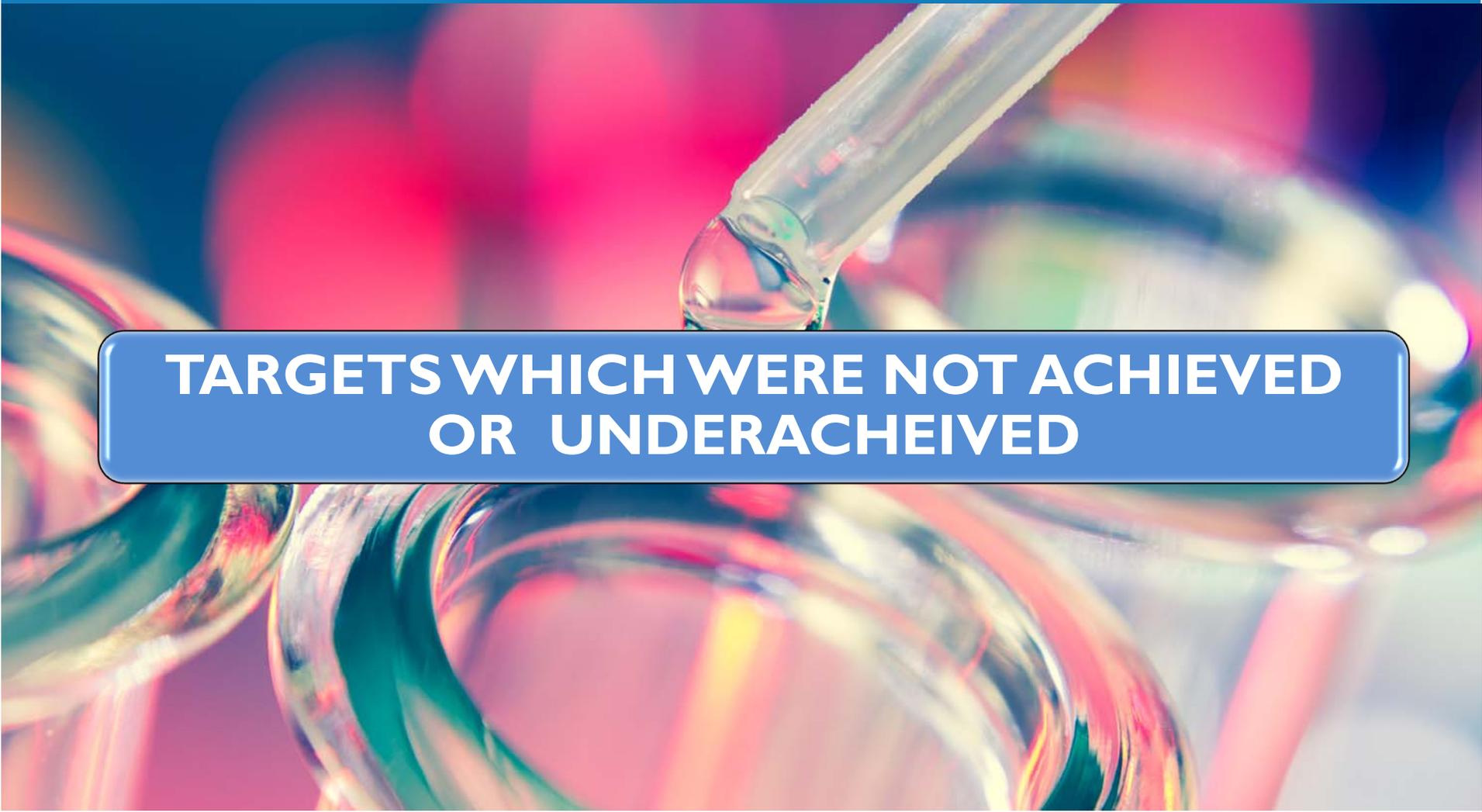
# Sampled Programme 5 Performance

## 2016/17 annual achievements - Programme 5: Socio-Economic Innovation Partnership

Annual Target	Actual Achievement	Status
290 master's and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs and SIFS) by 31 March 2017	334 master's and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs and sector innovation funds) by 31 March 2017	Achieved
200 interns fully funded or co-funded in R&D related to design, manufacturing and product development by 31 March 2017	216 interns fully funded or co-funded in R&D related to design, Manufacturing and product development by 31 March 2017	Achieved



# PERFORMANCE OVERVIEW



**TARGETS WHICH WERE NOT ACHIEVED  
OR UNDERACHEIVED**





# Classification of reasons for variances due to non / under achievement

- ❑ **Process delays** – refers to under/non-achievement due to factors which are not within the control of the DST and therefore the achievement of such targets is mainly dependent on outside stakeholders.
  - ✓ Such targets require the department to better manage the inter-dependent nature of the deliverables which, in turn, affect the DST deliverables.
- ❑ **Ineffectiveness of implementers** – refers to non-achievement due to deficiencies during the implementation phase.
  - ✓ Such targets require the department to better manage the planning of its targets to be aligned to the entities' targets to ensure that they are working towards achieving a common goal.
- ❑ **Target formulation deficiencies** – refers to under/non-achievement due to variables which were not foreseen during the target formulation phase.
  - ✓ These gaps can be addressed during the strategic planning processes of the following financial year as part of the lessons learnt.

# Unachieved Targets

## 2016/17 annual targets which were not achieved

Annual Target	Actual Achievement	Reasons for non-achievement	Status	Variance Classification
90 days to fill vacancy after date of advertisement by 31 March 2017	No vacancies were filled	Implementation of public service wage bill containment measures	Not achieved	Process delays
Vacancy rate retained at 6% by 31 March 2017	Vacancy rate not retained at 6%	Implementation of public service wage bill containment measures	Not achieved	Process delays
275 new disclosures reported by publicly funded institutions by 31 March 2017	251 new disclosures reported by publicly-funded institutions by 31 March 2017 bringing the annual total to 251 disclosures	A growing level of discernment of what constitutes a disclosure as well as “fees must fall” have impacted on the number of disclosures received from researchers by OTTs	Not achieved	Process delays

# Unachieved Targets

## 2016/17 Targets which were not achieved

Annual Target	Actual Achievement	Reasons for non-achievement	Status	Variance Classification
10 996 pipeline postgraduate Students awarded bursaries through NRF and DST managed programmes as reflected in the NRF and DST project reports by 31 March 2017	10 268 Pipeline postgraduate students awarded bursaries through NRF and DST Managed Programmes as reflected in the NRF and DST project reports by 31 March 2017	The target was missed. The target cannot be set with greater accuracy because it depends on the pool of applicants, which cannot be predicted perfectly. The over allocation of PhD bursaries by just over 300 may also have affected the available funding for honours and master's students	Not achieved	Ineffectiveness of implementers



# Partially Achieved Targets

## 2016/17 Targets which were partially achieved

Annual Target	Actual Achievement	Reasons for underachievement	Status	Variance Classification
4 539 researchers Awarded research grants through NRF-managed programmes as reflected in the NRF project reports by 31 March 2017	4 520 researchers awarded research grants through NRF-managed programmes as reflected by the NRF project reports	The target was missed. The target cannot be set with more accuracy because it depends on the pool of applicants and grant values, which cannot be predicted perfectly	Not achieved	Ineffectiveness of implementers



# Partially Achieved Targets

## 2016/17 Targets which were partially achieved

Annual Target	Actual Achievement	Reasons for underachievement	Status	Variance Classification
Fieldwork for the 2016 Business Innovation Survey (2013-2015 data) begun by March 2017	Fieldwork still to commence	Commencement of survey fieldwork postponed. Fieldwork will commence upon finalisation of survey planning/methodology documents and sampling	Not achieved	Process delays

# Partially Achieved Targets

## 2016/17 Targets which were partially achieved

Annual Target	Actual Achievement	Reasons for underachievement	Status	Variance Classification
Preapproval decisions provided within 120 days of date of receipt of application for the R&D tax incentive by 31 March 2017	By 31 March 2017, only 13 applications had received decision letters within 120 days. The average number of days for providing decisions was reduced from 266 days (applications received in 2015) to 147 days (applications received in 2016)	Continued to face capacity challenges. Available capacity was used largely for clearing the backlog, which was more time-consuming than initially anticipated due to the complexity of the applications	Not achieved	Process delays



**SELECTED DST'S PROJECTS ACROSS THE PROVINCES AS REPORTED IN THE ANNUAL REPORT**

10/20/2017



Name of the Province	Name of the Project	Project in Brief
Gauteng, Eastern Cape and Limpopo	IKS-Based Nutraceuticals.	Four Cooperatives for indigenous vegetable-based nutraceuticals, functional food and ingredients development registered. Nutri-Veg superfood drink being commercialized A pre-processing plant being constructed in Limpopo.
Gauteng, Eastern Cape, Mpumalanga and Northern Cape	IKS-Based Cosmeceuticals.	Platform in the process of land acquisition from local municipality for plant propagation and local pre-processing.
Western Cape, Eastern Cape, Mpumalanga, North West and Limpopo	Health-Beverages.	Three SMMEs registered, and three pre-processing plants being constructed. SMMEs commercializing value-added raw materials for Honeybush. Six health infusions (teas) tested and branded for commercialisation.
Limpopo, Gauteng and Kwazulu-Natal	Moringa.	Pre-processing plant completed in Limpopo, and one being constructed in Hammanskraal.
Free State, Gauteng, Limpopo, Kwazulu-Natal and Eastern Cape	African Traditional Medicines.	Two immune modulators branded and ready for commercialisation. Five SMMEs trained, branded and supported for commercialisation through health research and standardisation
Limpopo (Tzaneen)	Infectious disease early warning system incorporating climate predictions (IDEWS).	A joint project between South Africa and Japan, where an early warning system is being developed for the Limpopo Province in partnership with the National and Provincial Departments of Health, for malaria, pneumonia and diarrhoea.

## Annexure A: Detailed list of DST projects in the Provinces.

The background of the slide is a collage of financial-related images. It includes a blue header with a white hexagonal pattern, a calculator, a blue pen, a magnifying glass over a document with numbers, and various line and bar charts. The text 'FINANCIAL PERFORMANCE AND CONCLUSION' is centered in a blue rounded rectangle.

# FINANCIAL PERFORMANCE AND CONCLUSION

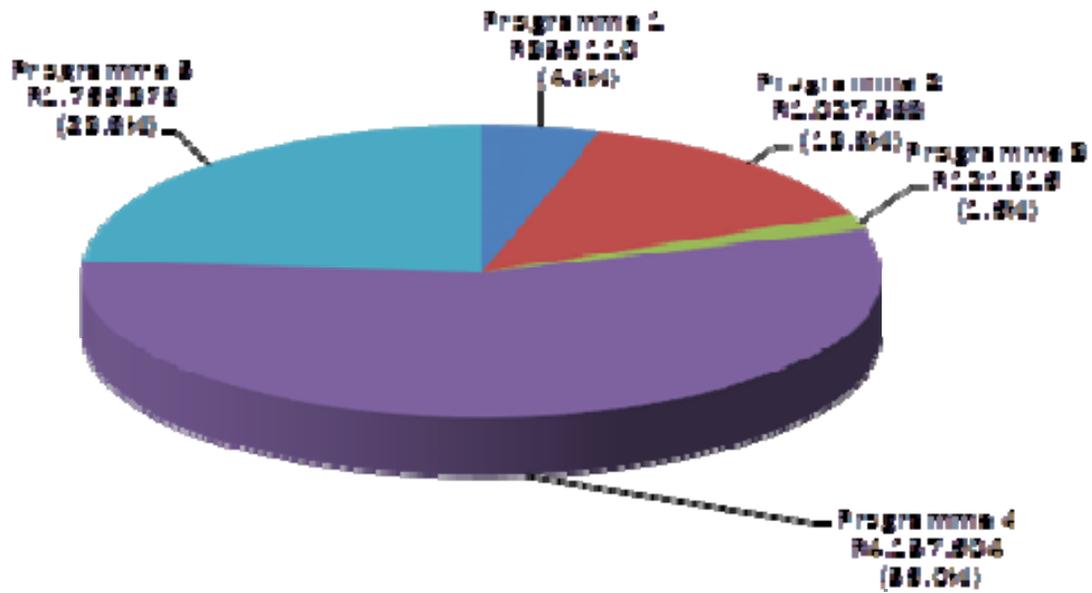
10/20/2017





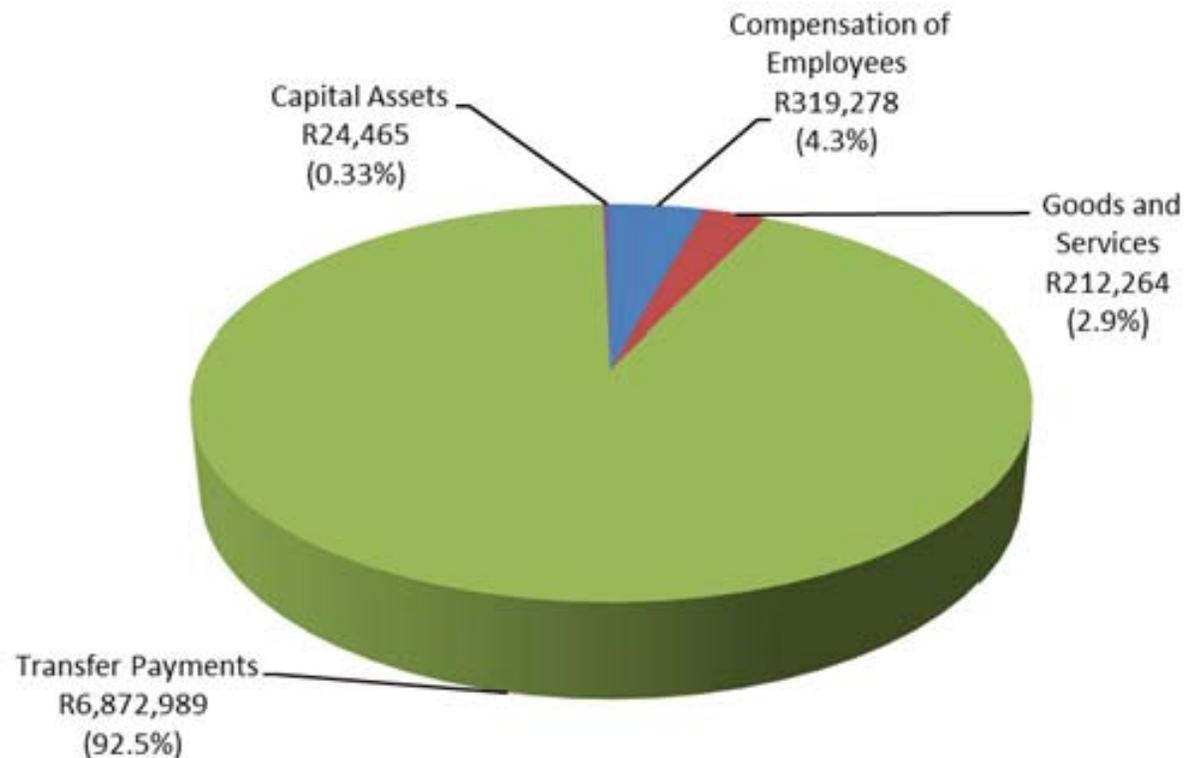
# BUDGET SPLIT – BY PROGRAMME

## BUDGET SPLIT – BY PROGRAMME



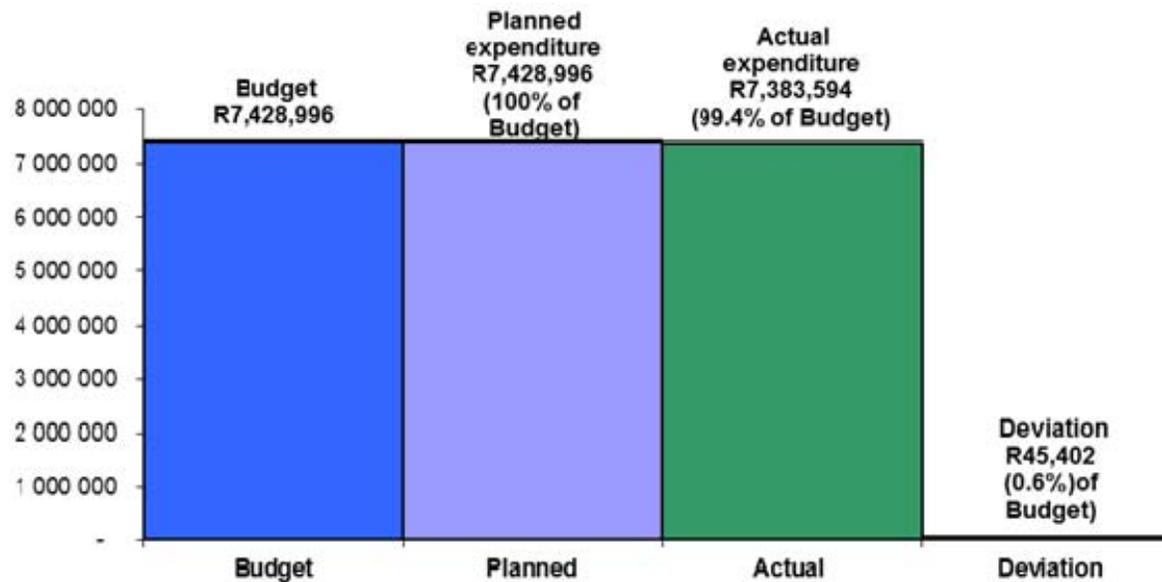
# BUDGET SPLIT BY ECONOMIC CLASSIFICATION

## BUDGET SPLIT – BY ECONOMIC CLASSIFICATION



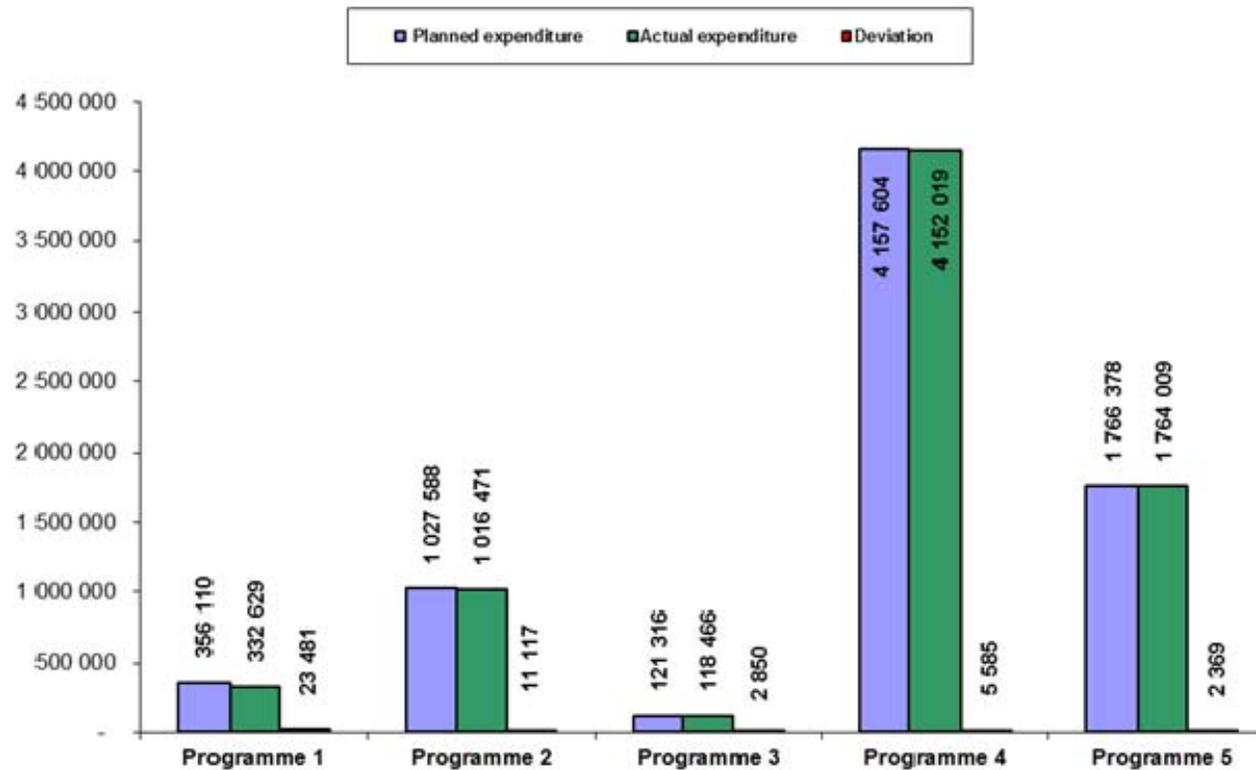
# FINANCIAL PERFORMANCE - SUMMARY

## FINANCIAL PERFORMANCE - SUMMARY

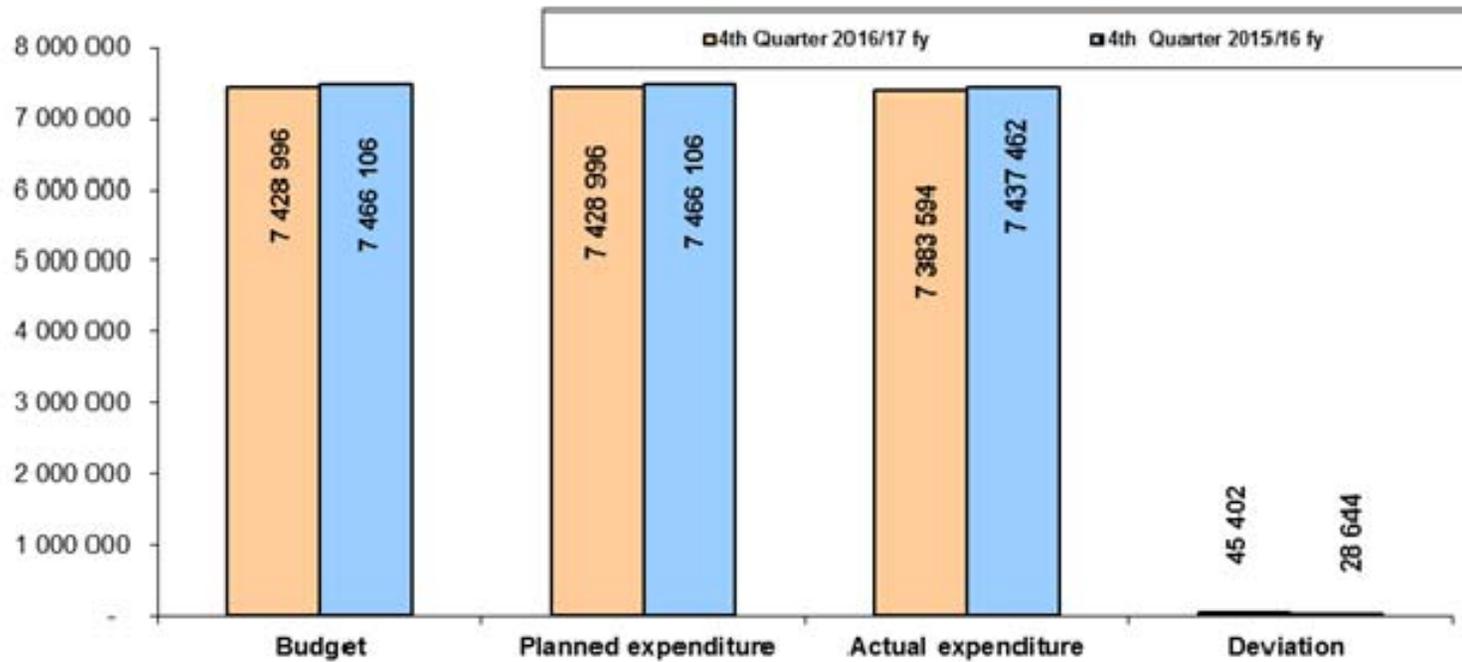


# FINANCIAL PERFORMANCE PER PROGRAMME

## EXPENDITURE BY DST PROGRAMME



# Year-on-year comparison of budget vs expenditure





# Conclusion

- ❑ The DST recognises that if South Africa's economy is to advance along the trajectory set out in the NDP, it will require a strong, coherent and effective NSI which is working in a coordinated manner to achieve the national priorities.
  
- ❑ The DST continued to encourage and strengthen industry innovation partnerships as part of broader government effort, to create decent work and skills for South Africans by supporting industry competitiveness to reduce poverty, unemployment and inequality.
  
- ❑ Sustainable growth in South Africa will require a transformed and fully utilized human capital base:
  - ✓ To this endeavor, the Department supported a total of 13 722 (5 938 male and 7 784 female) postgraduate students.
  
- ❑ The Department is committed to maintaining the highest standards of corporate governance, which are crucial for the management of scarce public finances and resources.





**Dankie  
Enkosi  
Ha khensa  
Re a leboga  
Ro livhuwa  
Siyabonga  
Siyathokoza  
Thank you**



## **ANNEXURE A: DETAILED LIST OF DST PROJECTS IN THE PROVINCES**

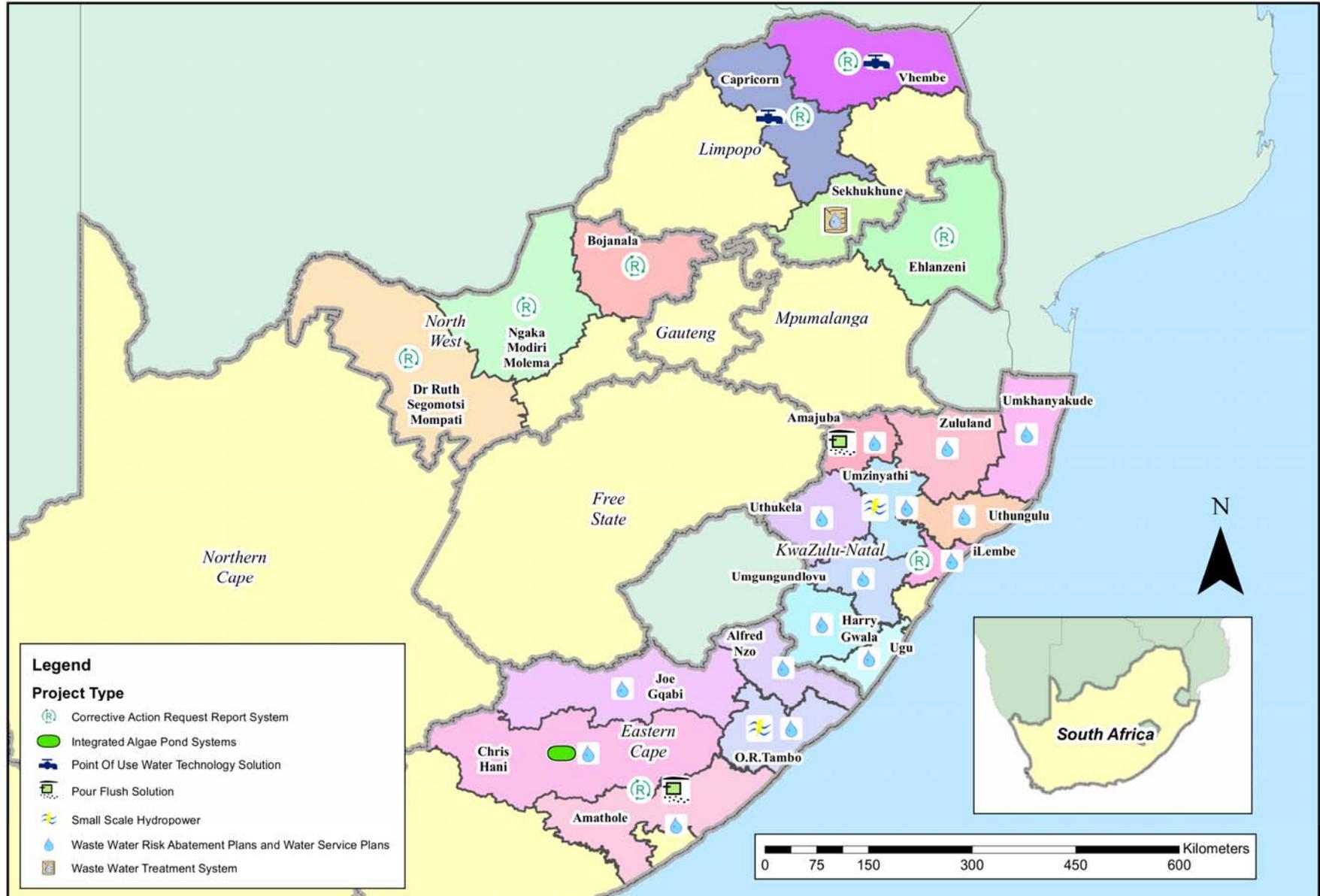
10/20/2017



Name of the Province	Name of the Project	Project in Brief
Eastern Cape (Fort Hare University) and Limpopo (Universities of Limpopo and Venda)	French South Africa capacity development initiative in Agriculture (FSAGRI).	A joint project between South Africa and France, to introduce interventions that address the challenges of increased number of people with high level skills in agriculture (master's and PhD levels), and the exploitation of knowledge into new agribusinesses for innovation outcomes. This initiative is implemented in partnership with the Department of Agriculture, Fisheries and Forestry.
North West  Limpopo	Bachelor of Indigenous Knowledge System (BIKS).	<p>Rolling out the BIKS degree at the North West University – the first cohort to graduate in May 2017.</p> <p>Rolling our the BIKS degree at the University of Venda – the first cohort to graduate in 2018.</p>
Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Northern Cape, North West, Western Cape, Gauteng and Mpumalanga	The National Recordal System (NRS) Initiative.	<p>Overall purpose: A mechanism that records, documents, preserves, protects, and promotes IK, and pro-actively secures knowledge holders rights from unauthorised access to data from commercial exploitation, misappropriation and misrepresentation.</p> <p>The project is implemented through the Indigenous Knowledge Documentation Centres (IKSDCs) in nine provinces.</p> <ul style="list-style-type: none"> <li>• University of Fort Hare- hosts the Eastern Cape.</li> <li>• Bakgatla-Ba-Kgafela Traditional Authority hosts the North West IKSDC.</li> <li>• University of Free State- hosts the Free State IKSDC.</li> <li>• University of Venda- hosts the Limpopo IKSDC</li> <li>• University of Zululand and University of KwaZulu-Natal -hosts the two IKSDCs at KZN.</li> <li>• South African San Institute- hosts the Northern Cape IKSDC.</li> <li>• Resonance Bazaar- hosts the Western Cape IKSDC.</li> </ul>

Name of the Province	Name of the Project	Project in Brief
Limpopo	Waste Water Treatment Works.	To demonstrate the ability of the Algae species in treating waste water.
Kwazulu-Natal and Eastern Cape	Waste Water Risk Abatement Plan & Water Service Plan.	To develop and provide a guideline tool and system that will improve the development of waste water and water quality management plans in the municipalities.
Eastern Cape, Limpopo, North West and Mpumalanga	Corrective Action Report Request System (CARRS).	Improved service delivery incident management by the municipality.
Eastern Cape, Mpumalanga, Northern Cape and Kwazulu-Natal	Low Pour Flush Sanitation.	<p>To pilot and evaluate the suitability of an innovative technology solution that addresses the sanitation challenges and needs.</p> <p>To obtain practical knowledge on the performance of the low pour flush and its potential for mass roll out in rural communities.</p>
Limpopo and Eastern Cape	Point of Use.	To demonstrate a South African designed water filter membrane for treating and cleaning water at a rural household level.
Mpumalanga	Integrated Algal Ponding System.	To pilot and demonstrate the ability of Algal system to improve the waste water treatment plants.
Kwazulu-Natal, Eastern Cape, Limpopo, Mpumalanga, and North West	Science and Technology Youth Journalism Programme.	To improve science and technology awareness and stimulate interest amongst youth on science and technology.

## Location of Science and Technology for Human Settlements Projects



Name of the Province	Name of the Project	Project in Brief
Gauteng, Western Cape	mLab Southern Africa (SA).	<p>Mlab has presence in Gauteng (Pretoria) and the Western Cape (Cape Town). They also run coding academies in places such Alexandra, Tembisa and Soweto. DST is supporting the regional expansion of mLab to other provinces. Good progress has been made and commitments for Co-funding have been made with Limpopo and the Northern Cape.</p> <p><a href="http://www.mlab.co.za">www.mlab.co.za</a></p>
Eastern Cape	Nelson Mandela Bay Regional Innovation Forum.	<p>The RIF has been instrumental in the establishment of the Propella Incubator and Composites Cluster in the region.</p> <p><a href="http://www.innovationeasterncape.co.za">www.innovationeasterncape.co.za</a></p>
Eastern Cape, Kwazulu Natal, North West, Limpopo, Mpumalanga and Northern Cape	Rural Innovation Assessment Tool (RIAT).	<p>RIAT is a set of tools applied at 17 local municipalities, with the support of the HSRC and universities, that enables municipalities to locate innovations and innovators in rural communities and identify innovations that have the potential to be massified to create rural industries that generate jobs.</p>
Limpopo, Northern Cape and Eastern Cape	Rose Geranium Essential Oils: Limpopo (Giyani); Northern Cape (Onseepkans) and Eastern Cape (Zalaze).	<p>An agricultural production hub located in Giyani positioned as a catalyst and scientific knowledge hub to stimulate Rose Geranium production in the area. It is one of several hubs that make up a network of rural-based Rose Geranium producers in South Africa. These hubs create direct and indirect jobs in their areas.</p>



# TSP National Foot-Print

