

2018/19 Annual Report Presentation



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DST Annual Report Presentation:
Select Committee of Education and
Technology, Sports, Arts and Culture



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

2019/20

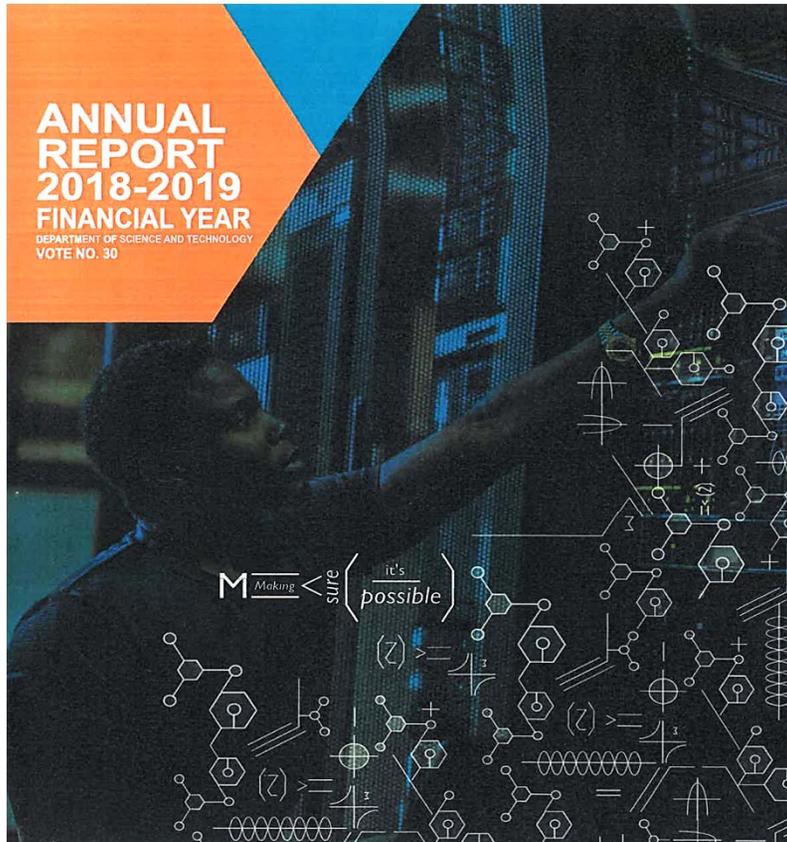


Presentation outline

- ❑ **Purpose**
- ❑ **DST's Vision and Mission**
- ❑ **Alignment to National Priorities**
- ❑ **DST's overall performance**
- ❑ **Key 2018/19 Financial Year Achievements**
- ❑ **Programme Performance Overview**
- ❑ **Conclusion**
- ❑ **DST's Projects Across Provinces**



Purpose



To present the **DST's Annual Report for the 2018/19 financial year.**



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.



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.



DST Overall Performance

2019/10/25



2018/19 DST Performance Overview

DST audit trends for 2017 to 2018 by the Auditor General of South Africa (AGSA).



AUDITOR - GENERAL
SOUTH AFRICA

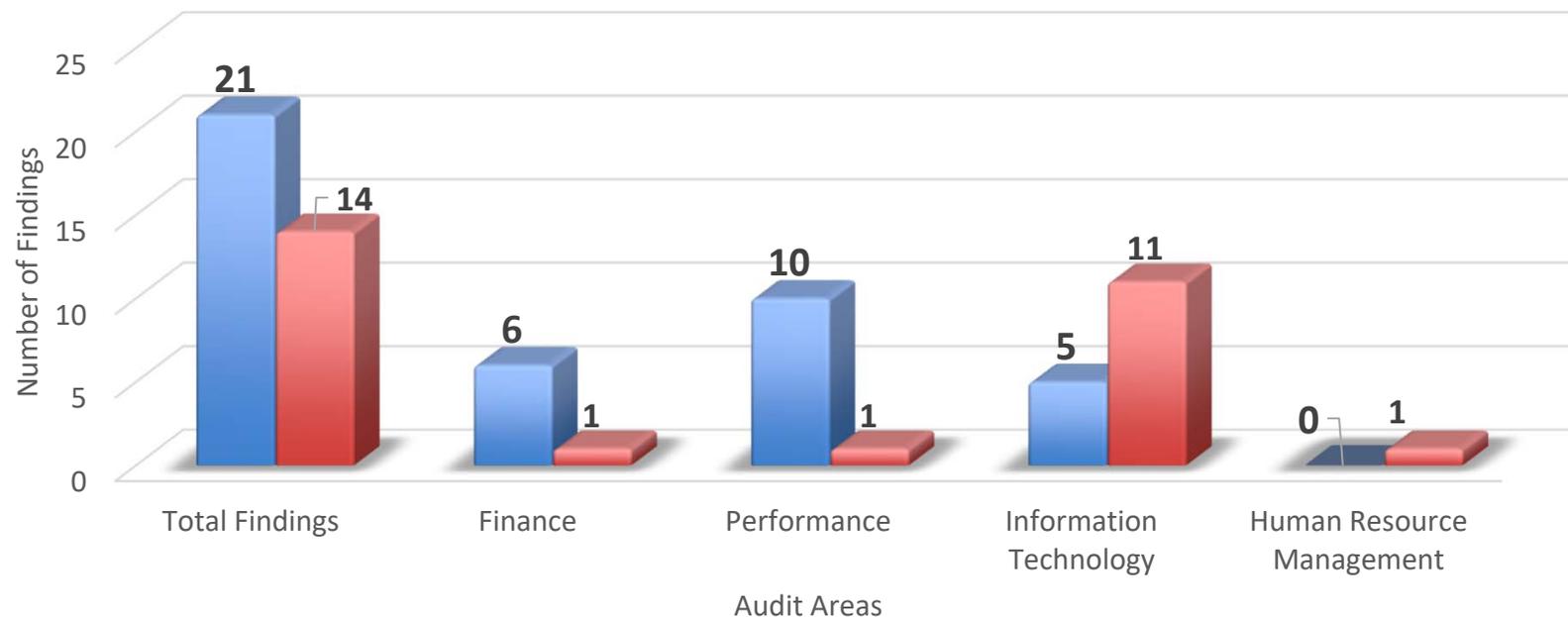
Auditing to build public confidence



DST Overall Performance

- As per the PFMA and National Treasury prescripts, the DST was involved in the audit process for the 2018-19 financial year in the period under review. Figure I below depicts the summary of AGSA findings:

Figure I: Summary of Audit Findings



■ 2017/18 ■ 2018/19



2018/19 DST Audit Outcomes

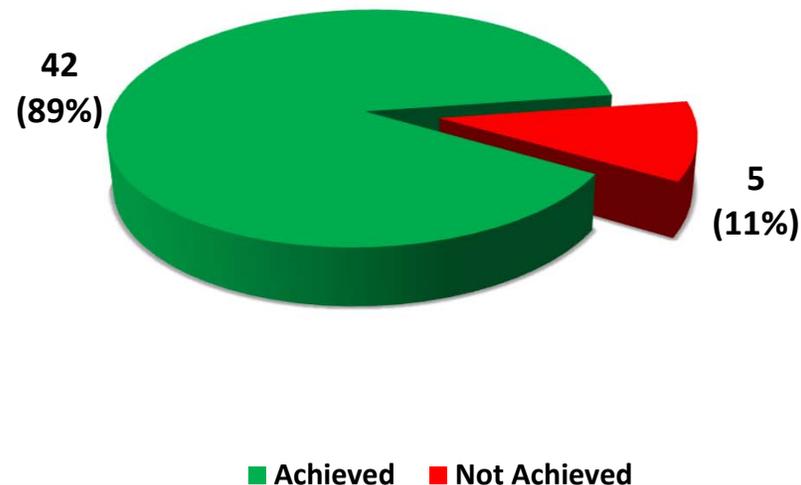
- ❑ The DST received an unqualified audit opinion in the period under review.
- ❑ Overall Figure 1 shows a drastic reduction of the issues raised by AG in 2018/19 financial year.
- ❑ Comparatively, audit findings in the areas of Finance and Performance have significantly been reduced by 80% and 90% respectively.
- ❑ It shows that Finance and Performance have improved and this reveals that the department is fully compliant with the prescripts and does things SMARTLY.
- ❑ However, the audit finding in the area of IT has increased by 120% and poses a risk to the organization.



2018/19 DST Performance Overview

- ❑ Based on the approved 2018/19 Annual Performance Plan (APP) output targets (Total number of output targets $n=47$), the department achieved a total of 42 targets (91%) and 5 targets (9%) were not achieved (Figure 1).
- ❑ This performance was subjected to the audit by AGSA and see Figure 2 below.

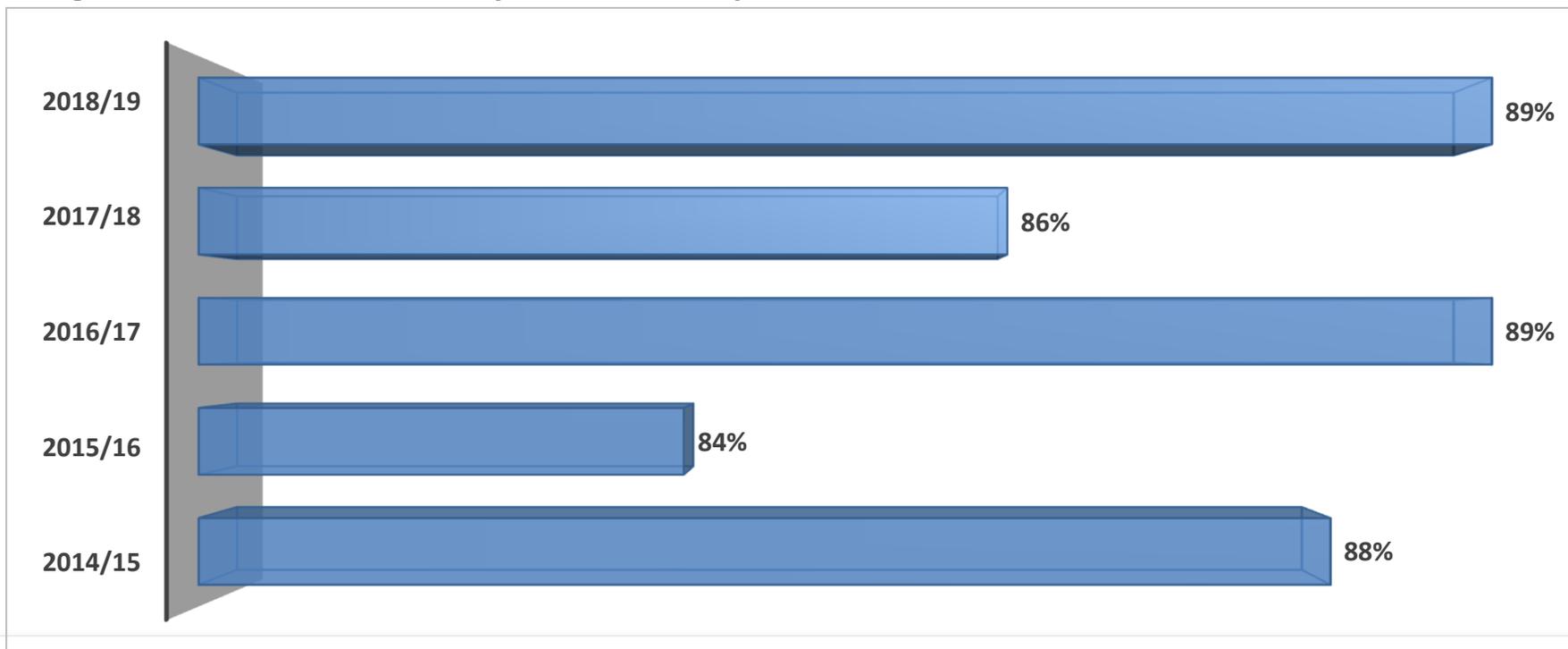
Figure 2: Overall Performance



DST Overall Performance

- The DST's performance trend against predetermined objectives has relatively remained above 80% over the last five financial years as illustrated in Figure 3 below.

Figure 3: DST overall 5 year annual performance trend





Sample of DST Projects during the year under review (a full set of projects from slide 100)





Sample List of DST Projects

Name of the Province	Name of the Project	Project in Brief/Update
Limpopo Gauteng Eastern Cape	IK-Based Nutraceuticals	<ul style="list-style-type: none"> • Innovation and technology transfer on 5 indigenous crops including Moringa. • Three pre-processing facilities being constructed. • One extraction patented registers. • Five SMMEs registered, incubated and trained in IK-based bio-entrepreneurship.
Kwazulu-Natal Free State Limpopo Eastern Cape	African Natural Medicine and Medical Cannabis	<p>An HIV Immune-Modulation (3) and latency (1) on an African Medicine. Preclinical studies completed with Preclinical studies ongoing with Canadian partners.</p> <p>Preclinical studies completed for diabetes, and commercial product formulation ongoing.</p> <p>Research permit granted to University of the Free State (UFS), and preliminary studies completed.</p> <p>Pre-clinical studies on cancers, diabetes, hypertension, and mental diseases initiated. Healer organisations trained in entrepreneurship.</p>



Sample List of DST Projects

Name of the Province	Name of the Project	Project in Brief/Update
Eastern Cape Western Cape North West	IK-Based Health Infusions	Technology transfer ongoing on 10 health infusions, e.g. Honeybush tea. 10 SMMEs registered and trained in entrepreneurship and agro-processing.
Gauteng Eastern Cape Mpumalanga	IK-Based Cosmeceuticals	Innovation and technology transfer on IK-based cosmeceuticals for hyper-pigments, cancers, acne, eczema. Eight patents registered and two pre-processing facilities being constructed. Two SMMEs registered and trained in entrepreneurship.



Sample List of DST Projects

Name of the Province	Name of the Project	Project in Brief /Update
Countrywide IK-Holder Participants	Tech Transfer, Incubation, Entrepreneurship and Commercialisation	Pre-incubation, incubation, technology transfer, entrepreneurship training and commercialisation initiatives ongoing at SABS, CSIR, ARC, Innovation Hub, BioPark and several universities for IK Holder-owned SMMEs.
Northern Cape	Square Kilometre Array (SKA) and Southern Africa Large Telescope (SALT) telescopes	<p>The telescopes contribute to the following aspects:</p> <ol style="list-style-type: none"> 1. Scientific returns - growth in scientific outputs. 2. Technological returns - reviving local manufacturing industry and big data. 3. HCD and skills development - 1161 grants/bursaries awarded in total to create a pipeline of requisite skills. 4. Socio-economic returns - educational improvements, job creation to communities and growth of SMMEs. 5. African development - strengthening institutional capacities. 6. International partnerships - attracting foreign direct investment, skills transfer and technology exchange.



Sample List of DST Projects

Name of the Province	Name of the Project	Project in Brief/Update
Limpopo (University of Venda); Western Cape (Cape Peninsular University of Technology); Gauteng (University of Johannesburg and University of South Africa)	Artificial Constructed Wetland Bioremediation Consortium	The bioremediation research consortium will consist of UNISA as a lead institution together with CPUT, UJ and UNIVEN. The consortium will undertake various RDI activities targeted at the technology demonstration and upscaling of the artificial constructed wetlands bioremediation technology.
Durban, KwaZulu-Natal	Reinforced Material and Plastics Technology Stations (RMPTS)	Technology Transfer conduct for product design, testing and simulation, advanced material and manufacturing of composites and plastic products.

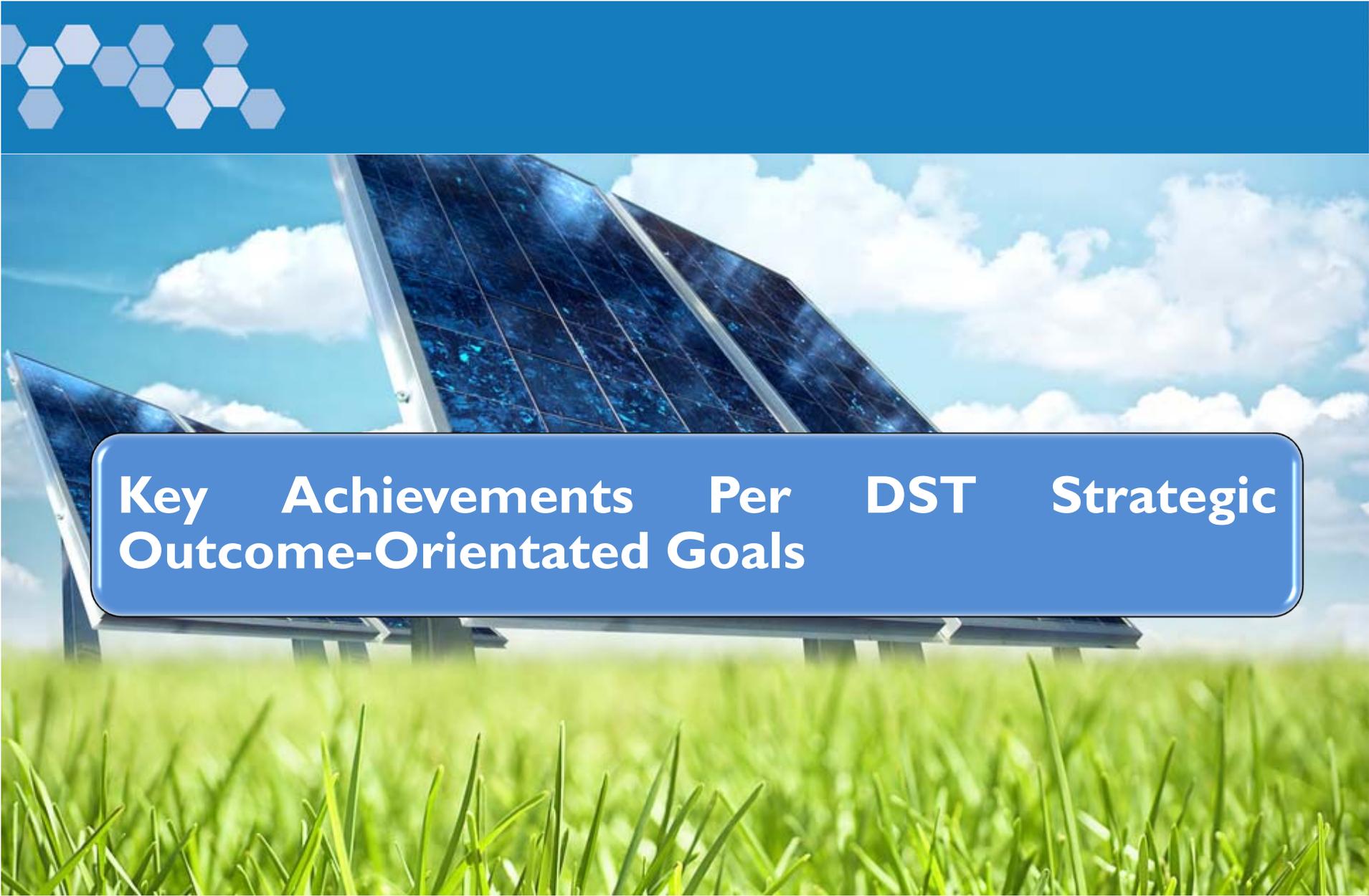


2018/19 DST Performance Overview

- The Department of Science and Technology continued to support the National Priorities by implementing its Five (5) Strategic Outcome-Orientated Goals (SOOG's) during the period under review.

These SOOG's are as follows:

- a responsive, coordinated and efficient national system of innovation (NSI),
- increased knowledge generation,
- using knowledge for economic development,
- human capital development (HCD),
- and using knowledge for inclusive development.



**Key Achievements Per DST Strategic
Outcome-Orientated Goals**





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 crucial.

During the reporting period, the following can be commended:

- ❑ Cabinet approved the 2019 White Paper on Science, Technology and Innovation in March 2019.
- ❑ The White Paper on STI represents a number of shifts in South African STI policy, such as:
 - ✓ A deliberate focus on inclusion e.g. involving civil society and industry in planning.
 - ✓ Elevating STI consultation to the level of the Presidency to support strategic sectors.
 - ✓ The utilisation of publicly funded R&D and support for grassroots innovation to transform ownership of SA economy.
 - ✓ Institutionalised prioritisation to support strategic research.
 - ✓ Institutionalised budget coordination for public STI.
 - ✓ Targeted internationalisation efforts to support innovation and commercialisation.



Strategic Outcome-Oriented Goal I

A responsive, coordinated and efficient NSI

❑ The White Paper aims to:

- ✓ Ensure a whole-of-government approach to innovation through an Innovation Compact to drive coherence and coordination.
- ✓ Elevate STI planning to the highest levels of government.
- ✓ Increase the spatial footprint of innovation to develop provincial and local innovation systems.
- ✓ Expand and transform the research system, including knowledge infrastructure.
- ✓ Expand and transform human capabilities for STI, including a focus on technical and new skills for the future.
- ✓ Increase the financing of the national system of innovation.
- ✓ Institutionalise systemic STI monitoring, evaluation and policy learning.

Strategic Outcome-Oriented Goal 2



Increased knowledge generation

- ❑ The DST acknowledges that without research grants support, knowledge generation is not possible.
- ❑ **Research grants:**
 - ✓ During the 2018/19 financial year, the DST awarded 4 633 research grants: 40% went to black researchers and 39% went to women.



Strategic Outcome-Oriented Goal 2

Increased knowledge generation

☐ Publications:

- ✓ 9 159 peer-reviewed research articles were published by DST funded researchers in the Thomson Reuters (TR) Web of Science Citation Database. While the number of publications shows the quantity of the publications, the citations shows impact that the publications have.
- ✓ These have significantly contributed to the country's citation impact of 1.31, higher than the global impact of 0.97.
- ✓ Research outputs provides a basis for continuous generation of new knowledge and innovation to improve the country socio-economic status and global competitiveness.



Strategic Outcome-Oriented Goal 2

Increased knowledge generation

❑ Research infrastructure grants:

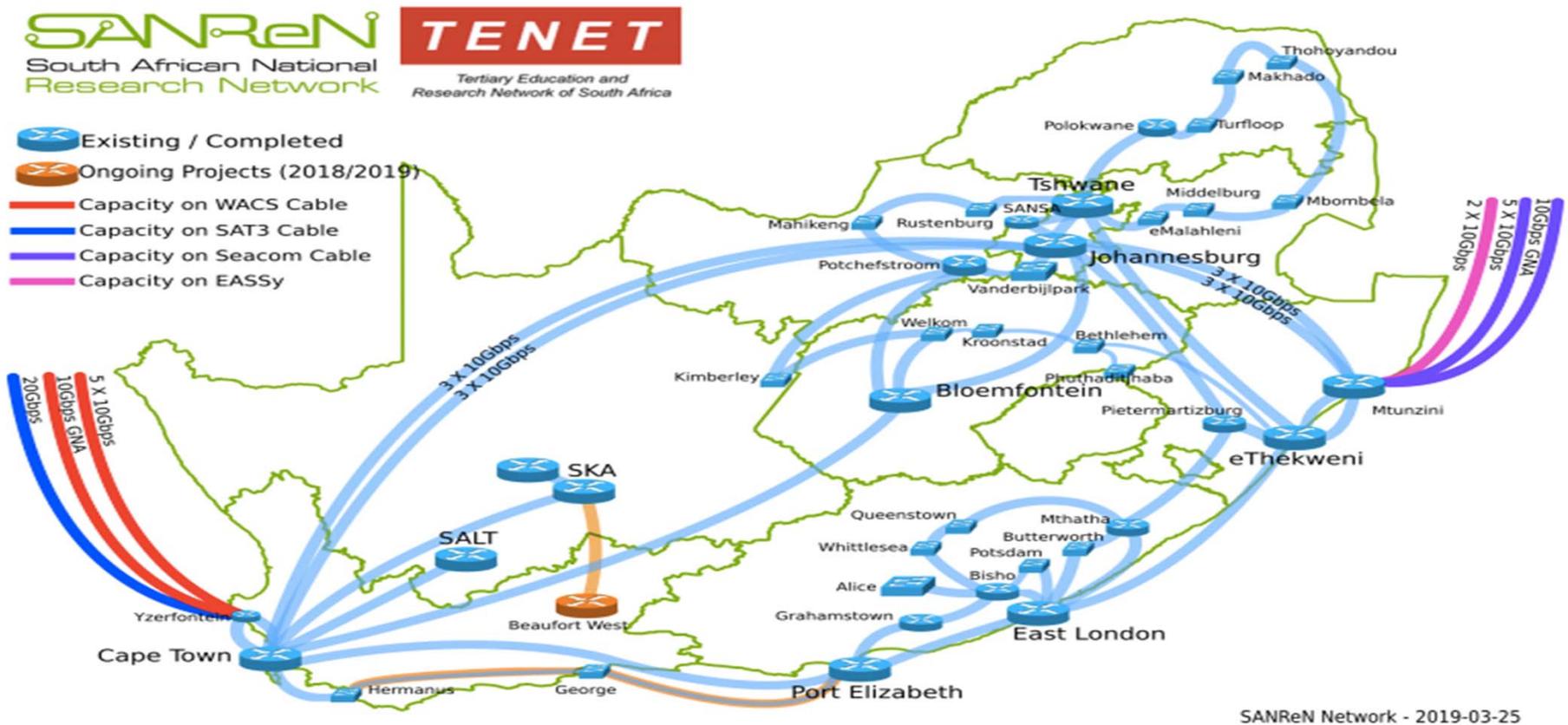
- ✓ The Department, through the NRF and internally driven processes awarded 35 research equipment and infrastructure grants totaling R703,015 million to universities, science councils, museums, national facilities and other public research performing entities.
- ✓ This investment includes the establishment of large research infrastructures as part of the implementation of the South African Research Infrastructure Roadmap (SARIR).

❑ Recent SANReN Network Connectivity Developments

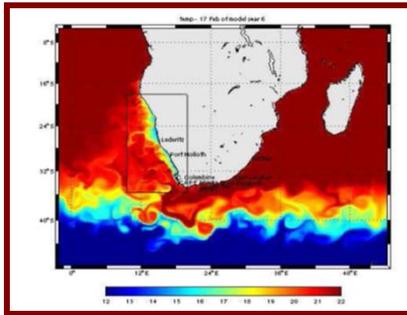
- ✓ Total Available Broadband Capacity (TABC) provided by 31 March 2019 exceeded 3500 Gbps (as per the map below).

Strategic Outcome-Oriented Goal 2

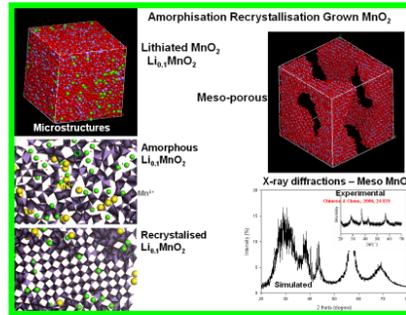
- During the 2018/19 financial year:
- Provision of research equipment and infrastructure



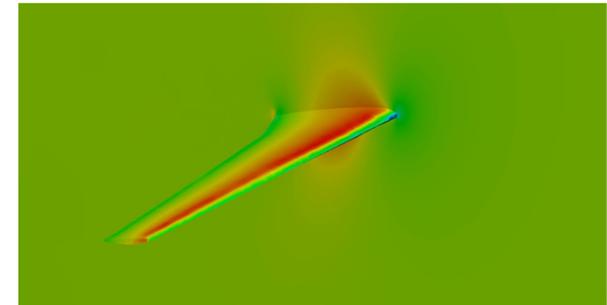
Strategic Outcome-Oriented Goal 2



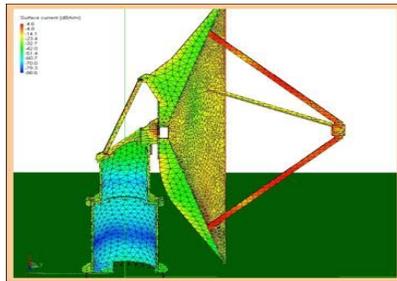
Climate Change (IPCC)
Weather Forecasting (SAWS)



Battery
Manufacturing
Mineral Beneficiation
Drug discovery



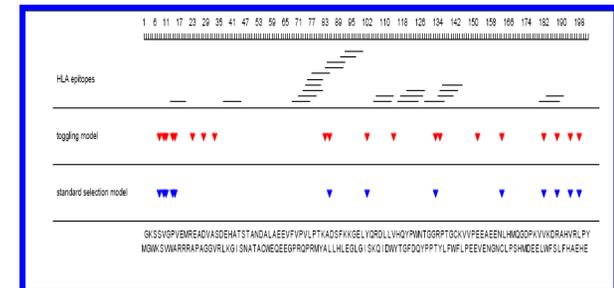
Engineering



SKA and MeerKAT
Tier 2 CERN Site



Animation industry – New SMMEs
SOEs
Large Corporates



HIV Mutation
Brain Imaging improved
Cardio-Vascular studies
Bioinformatics

Strategic Outcome-Oriented Goal 2



MeerKAT, Northern Cape

Increased knowledge generation

- ❑ **Provision of research equipment and infrastructure**
- ✓ The 64-Antenna MeerKAT radio telescope was completed and commissioned for science operations during the reporting period, launched by the Deputy President on 13 July 2018.
- ✓ At the launch, a panorama obtained with the new telescope was unveiled, proving the SA MeerKAT to be one of the best scientific instruments in the world.

Strategic Outcome-Oriented Goal 2



Increased knowledge generation

- ❑ **Provision of research equipment and infrastructure**
- ✓ The Department also launched the MeerLICHT optical telescope.
- ✓ The telescope is a collaboration between research institutions in the Netherlands, South Africa and the United Kingdom.
- ✓ The MeerLICHT will complement the MeerKAT by conducting simultaneous observations in the optical spectrum.



Strategic Outcome-Oriented Goal 2

Increased knowledge generation

□ Provision of research equipment and infrastructure

- ✓ The DST provided funds to North-West University to build a dome for their newly established Mahikeng Astronomical Observatory, which houses a 16-inch Meade LX200GPS optical telescope.
- ✓ This telescope is going to be used for research by students as well as for outreach to local schools and the community.
- ✓ Furthermore, as part of spacecraft development efforts, ZACube-2 was launched into space on 27 December 2018.

Strategic Outcome-Oriented Goal 3



**Human capital
development**



Strategic Outcome-Oriented Goal 3

❑ **Human capital development:**

- ✓ The DST acknowledges that investment in the development of skills and knowledge that can be used to create economic value for the country is vital.
- ✓ Skills acquisition is the greatest equaliser in reducing, inequality, poverty and unemployment.

During the reporting period, the following can be commended:

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

- ✓ Through the NRF, the Department funded or co-funded a total of 13 154 students, of which the breakdown is as follows:
- ✓ 4 572 honours, 5 202 masters and 3 380 doctoral students.



Strategic Outcome-Oriented Goal 3

- ❑ **Human capital development:**
- ❑ **Bursaries awarded through NRF and DST programmes**
- ✓ The demographic targets for black (80%) and women (55%) students supported were exceeded at honours and master's level, but at doctoral level more needs to be done to achieve equity in the distribution of bursaries, scholarships and fellowships.
- ❑ ***The upcoming slides 33 – 35 illustrates the trends.***



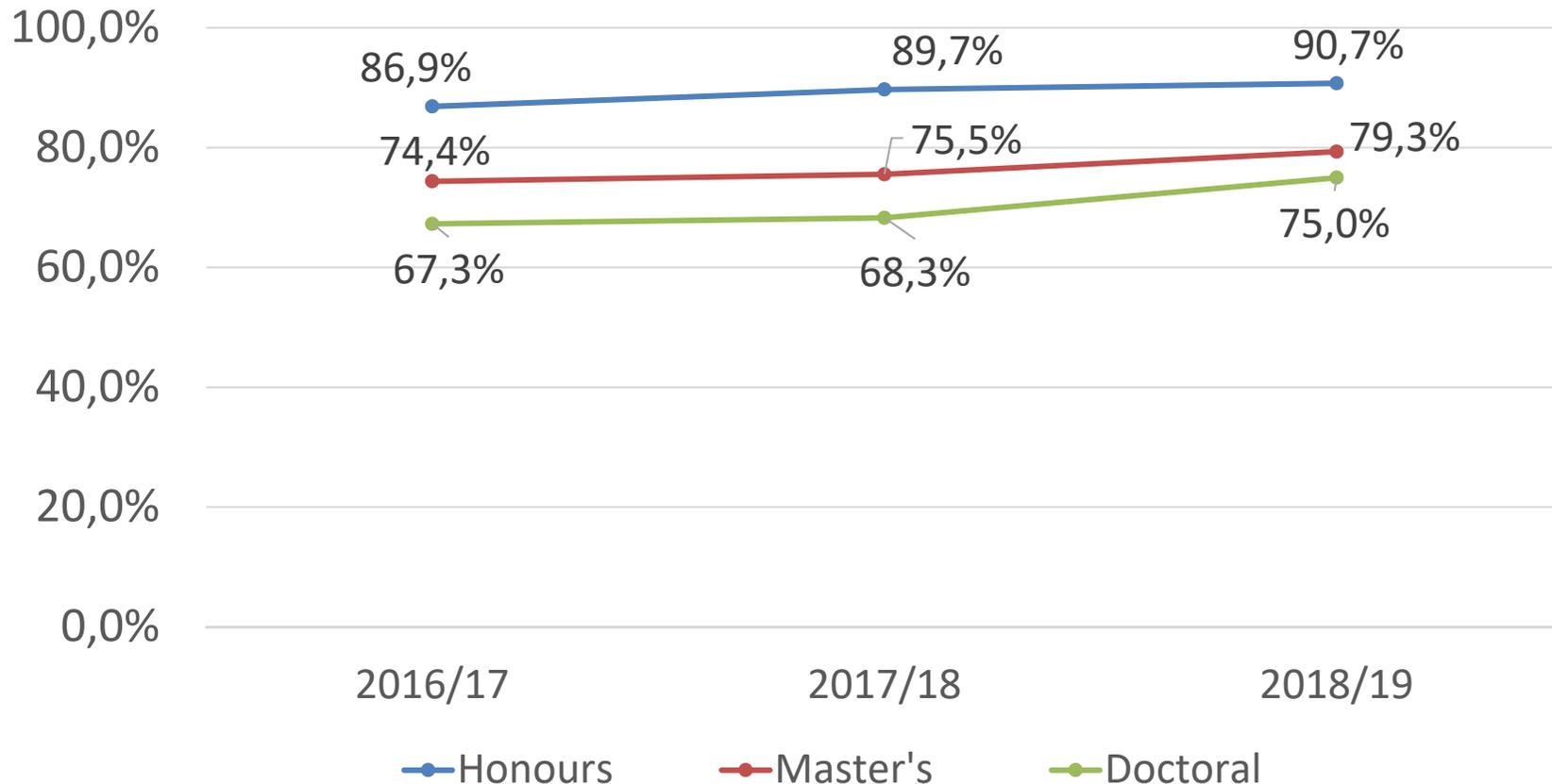
Strategic Outcome-Oriented Goal 3

- ❑ **Human capital development:**
- ❑ **The following depicts student funding trends**

Study Level	2016/17	2017/18	2018/19
Honours	5 083	4 956	4 572
Masters	5 185	5 645	5 202
Doctoral	3 453	3 621	3 380
Total	13 721	14 222	13 154

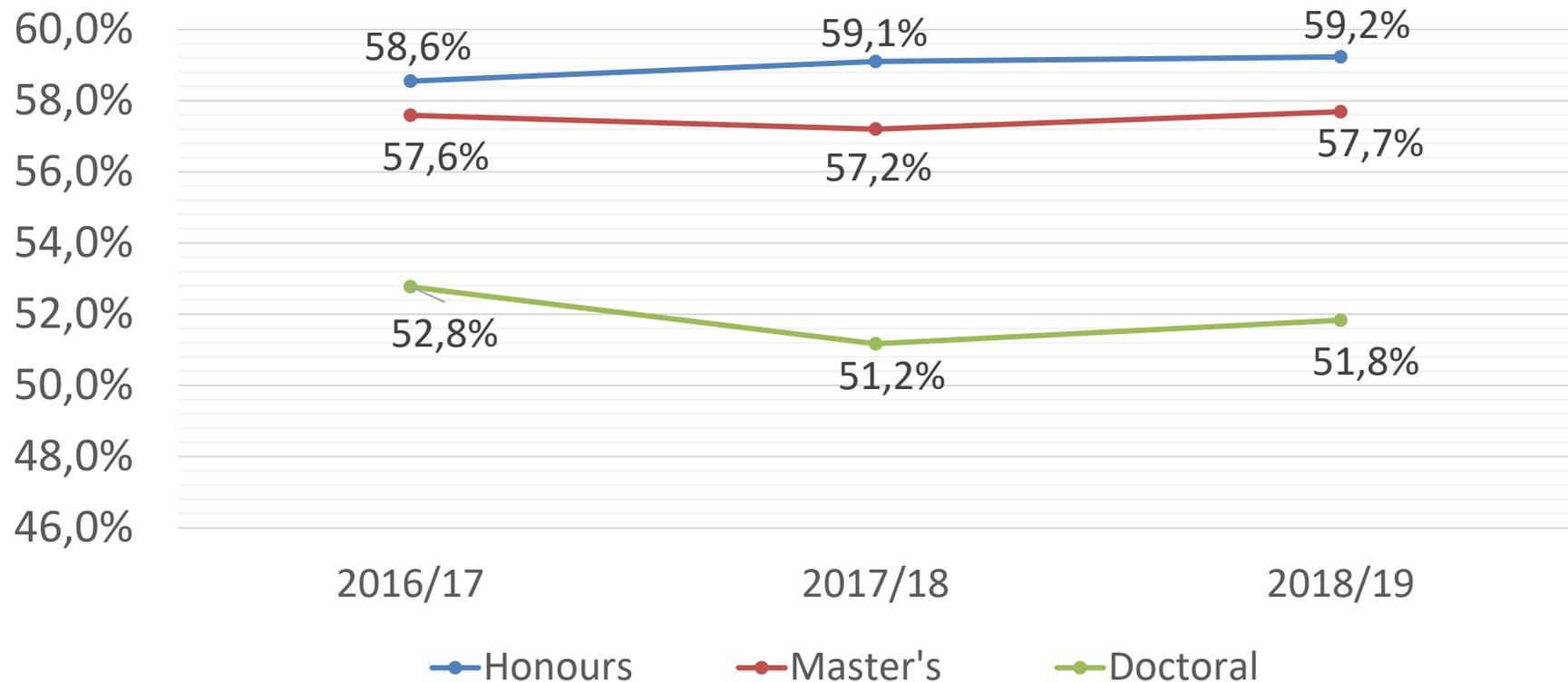
Strategic Outcome-Oriented Goal 3

□ The following depicts student funding trends against the demographic target for black at 80%, as per Ministerial Guideline



Strategic Outcome-Oriented Goal 3

□ The following depicts student funding trends against the target set at 55% for women





Strategic Outcome-Oriented Goal 3

Other HCD initiatives

☐ *Interns supported*

- ✓ A total of 1 052 graduates and students were placed in DST-funded work preparation programmes in SETI institutions.
- ✓ The programme makes a significant contribution to the absorption of postgraduate students in the job market, while also attracting them to research careers, thereby contributing to the reduction of unemployment and inequality.

☐ *Science engagement*

- ✓ A total of 29 418 913 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

- ❑ **Support for Technology Stations:** The DST provides funding for technology stations to render technology support to small and medium enterprises to develop their technology capabilities to enable them to leverage procurement opportunities under the infrastructure build programmes of the state-owned enterprises.

- ✓ Currently the DST has 18 Technology Stations at universities - R100.5 million was distributed.
- ✓ 3182 SMMEs received technology support, of which 2439 (74%) are PDI-owned.
- ✓ **33 knowledge and innovation products:**
 - 24 prototypes - An early sample or market sample of the product
 - 6 technology demonstrators - a proof of concept with the primary aim of showcasing the possible applications, feasibility. 6 SMMEs benefitted.
 - 5 technology transfer packages. Technology is packaged in a tangible output (e.g. product/ process/ data pack/ software) so that the recipient can use it without any additional development work. 5 SMMEs benefitted.



Strategic Outcome-Oriented Goal 4

❑ Support for Technology Stations

- ✓ 51 small enterprises secured business contracts, which could result in the retention and creation of jobs.
- ✓ 55 people living with disabilities were beneficiaries of technology support
- ✓ 1 380 young people received support from technology stations.
- ✓ 124 students were afforded the opportunity to work on industry projects at technology stations in the manufacturing and agro-processing sectors because of leveraged direct income.
- ✓ R62.3 million additional income into Technology Stations recognised.



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

❑ Support for Technology Localisation

- ✓ During the FY 2018/19, the Technology Localization Implementing Unit (TLIU) implemented Firm-level Technology Assistance Packages (FTAPs) interventions at 63 companies.
- ✓ Gibela Rail provided a co-funding of R5 million to develop a total of 14 companies
- ✓ Currently there are more than 6900 companies profiled/registered in the TLIU database, of which more than 800 firms have been benchmarked against industry standards (in original equipment manufacturing)



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

- ✓ Through Sector Innovation Fund (SIF) the DST has supported a portfolio of industries, namely horticulture, post-harvest innovation, viticulture, forestry, paper manufacturing, and agroprocessing.
- ✓ To address some of the challenges of the agricultural bioeconomy, the DST, in collaboration with the Technology Innovation Agency, supports the Agricultural Bioeconomy Innovation Partnership Programme (ABIPP).
- ✓ Below are examples of ABIPP funded existing and new initiatives:
 - The Wheat Breeding Platform; the Maize Breeding Programme; the Crop Protection Consortium; the Soybean Food and Nutrition Project; the Bioinnovation Aquaculture Programme and; Agroprocessing for niche commodities.



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

- ✓ Furthermore, the ABIPP supported the Multi-African States Foot-and-Mouth Disease Rapid Response programme.
- ✓ This programme focuses on livestock disease management through the development of diagnostics and technologies to support and inform policies that will assist in managing notifiable diseases such as foot-and-mouth disease
- ✓ During the reporting period Fifteen (15) community-based initiatives were supported through the construction and equipping of pilot pre-processing facilities and agri-businesses.
- ✓ The Innovation Hub (BioPark) incubated 14 SMMEs, supporting business development and entrepreneurship in RDI-based natural products.



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

- ✓ Furthermore, the DST supported the development of protein and enzyme reagent processes and products for commercialisation through the ReagEnz Max initiative.
- ✓ The initiative seeks to develop and commercialise market-ready technologies for the recombinant production of protein and enzyme reagents in response to market needs.
- ✓ As a result, the CapeBio start-up has been registered as a Level I BBBEE company and has already raised initial start-up funding and incubation support from the Allan Gray Orbis Foundation.



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

- ❑ Renewable energy has become an integral part of the country's energy agenda.
- ❑ South Africa's plentiful manganese and other mineral resources suitable for energy use in stationary and mobility applications give the country a comparative advantage in energy storage.
- ❑ The DST and its partners understand that innovation is needed to revolutionise batteries to strengthen clean energy research capabilities, which can also create employment.
- ✓ During the reporting period, a multilateral agreement between Germany and South African partners was put in place to develop a low-cost nickel-iron battery.
- ✓ The partnership includes the University of the Western Cape, Eskom and the Fraunhofer Society, as well as one German and two South African SMMEs.



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

- ❑ In support of technology commercialisation and getting hydrogen fuel cell technology into the global value chain, HyPlat, a spin-off of the HySA Catalysis Centre of Competence had its membrane electrode assemblies (MEAs) evaluated by a global original equipment manufacturer.
- ❑ **Other achievements include:**
 - ✓ Three electric scooters with a fuel cell range extender and supporting hydrogen refueling infrastructure were completed in collaboration with the South African Post Office (SAPO) as demonstrators. The scooters will be used to promote effective mail delivery by SAPO in the future.
 - ✓ In April 2018, a 2,5kW fuel cell unit developed through the HySA programme was launched at Poelano Secondary School near Ventersdorp.
 - ✓ The unit, combined with 17 kW installed capacity of solar panels and 28,8 kWh of battery storage, on-site hydrogen production and storage, is providing renewable electricity for lights and ICT equipment for the benefit of more than 400 learners at the school.

Strategic Outcome-Oriented Goal 4



Using knowledge for economic development

- ✓ The DST-funded solar energy programme, SolarTurtle, a spin-out company of the Renewable Energy Hub-and-Spokes Programme deployed at Stellenbosch University, 10 SolarTurtle energy kiosks in Lesotho to support rural women in their business initiatives and also used for mobile banking.



Strategic Outcome-Oriented Goal 4

Using knowledge for economic development

❑ **Aeroswift industrialisation and commercialisation**

- ✓ Progress was made with regards to the flagship Aeroswift additive manufacturing project.
- ✓ Once industrialised, the Aeroswift has the potential to create a new manufacturing segment in South Africa.
- ✓ A number of demonstration components have been completed, and some are already employed in a flying aircraft.
- ✓ International interest in using the specific capabilities of this novel, locally developed additive manufacturing machine continues to increase.



Strategic Outcome-Oriented Goal 5



**Knowledge utilisation
for inclusive
development**



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development

❑ Improve innovation capacity of municipalities

- ✓ In the reporting period the DST upscaled the Municipal Innovation Maturity Index (MIMI) resulted in the increased number of participating municipalities.
- ✓ The MIMI is a tool for assessing the capabilities of municipalities to support innovation for improved basic service delivery.
- ✓ The tool was developed in response to the general lack of appropriate instruments for understanding and evaluating the innovation capabilities of local and district municipalities in South Africa.



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development

❑ Other initiatives

- ✓ Mapping the Karoo innovation landscape in support of regional economic strategy (initiative aligned Karoo Small Town Regeneration and Regional Economic Development).
- ✓ Deploying Innovation Champions (thereby providing employment for unemployed graduates) in the Vhembe District Municipality (district and local municipalities participating) to assist municipalities on innovation-driven local economic development.
- ✓ Human Settlements: decision-support tools e.g. STI roadmap to transform human settlements delivery; (planning and progress monitoring); tracking human settlements housing beneficiaries to enhance delivery efficiencies in housing allocation).



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development: Other initiatives

□ DBE:

- ✓ (i) Piloting and integrating the ICT Schools Maturity to assess readiness for the deployment and adoption of ICTs in schools, in line with the ICT in schools Operation Phakisa;
- ✓ (ii) Piloting an alternative school nutrition model;
- ✓ (iii) Demonstration innovative sanitation technologies in schools to enable appropriate deployment.

□ DHET:

- ✓ Partnership on using community learning centers (linked to community colleges) as innovation support spaces for unemployed youth.



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development

❑ Health innovation initiatives

- ✓ The DST through the Strategic Health Innovation Partnerships programme in conjunction with South African Medical Research Council (SAMRC), funded a Phase III clinical trial to assess the efficacy of levofloxacin preventive therapy in children that have been exposed to multidrug-resistant tuberculosis (MDR TB).
- ✓ The study resulted in the development of a pediatric levofloxacin 100 mg dispersible formulation which has been prequalified by the World Health Organization (WHO).
- ✓ This is available globally to children living in countries that procure medicines from the Global Drug Facility.



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development

❑ Health innovation initiatives

- ✓ In ensuring a healthy life for all, the TB and malaria drug discovery programmes at the University of Cape Town Drug Discovery and Development Centre have secured approximately R46 million over the next three years (2019 to 2021) from the Bill and Melinda Gates Foundation (BMGF).
- ✓ The funding will advance TB and malaria drug discovery efforts at the university with a focus on further development of the malaria drug candidate and the chemical series for TB that are at various stages of development.



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development

❑ Health innovation initiatives

- ✓ With funding from the DST, the SAMRC and the CSIR, the University of Pretoria has completed a project in the Mamelodi District of Tshwane on the use of the Umbiflow device to screen and manage an unselected pregnant population.
- ✓ It is estimated that about 20 000 premature births are recorded in South Africa annually.
- ✓ The routine use of the Umbiflow device could result in a significant reduction in the local perinatal mortality rate.

❑ Efforts to find a suitable commercial partner are currently under way.

- ✓ The WHO has also committed an amount of US\$218 000 to expand Umbiflow studies in other developing countries, including India, Kenya, Ghana and Rwanda.



Strategic Outcome-Oriented Goal 5

Knowledge utilisation for inclusive development

❑ Support for grassroots innovation

- ✓ The Grassroots Innovation Programme is a DST initiative aimed at providing technical and financial support to social entrepreneurs and local innovators in townships and rural areas who are developing solutions to address social challenges.
- ✓ During the 2018/19 financial year, 100 qualifying local innovators were enrolled in the programme to develop their concepts, commercialise their ideas, develop prototypes and access funding and technical expertise.
- ✓ The initiative has no gender boundaries, one of the former beneficiaries of the Grassroots Innovation Programme secured industrial development funding for a manufacturing facility in her rural town.



Strategic Outcome-Oriented Goal 5

International Cooperation and Resources

- ✓ Increasing opportunities for the NSI to access international resources and support including sharing the experience and expertise of the DST's global partners, was a significant factor in the achievement of all five of the Department's strategic outcome-oriented goals.
- **Science Diplomacy**
- ✓ The convention establishing the new international Square Kilometre Array Observatory, which will govern the global SKA radio telescope project and the Head Quarters Agreement, governing the International Centre for Genetic Engineering in Biotechnology was signed in Rome.
- ✓ Science diplomacy and the promotion of South Africa as a preferred international partner for STI initiatives remained a major aspect of the DST's work. DST, ASSAf and the Department of International Relations and Cooperation hosted a workshop on diplomacy, leadership and negotiation. This provided a platform for the DST to create uniquely branded South African STI diplomacy workshop and to champion training at a continental level.
- ✓ The fourth Science Forum South Africa attracted more than 3 000 participants from 79 countries.



Strategic Outcome-Oriented Goal 5

International Cooperation and Resources

❑ Overseas Bilateral Cooperation

- ✓ A diverse portfolio of bilateral and multilateral programmes coordinated by the DST during the financial year afforded South African researchers opportunities to collaborate in joint knowledge-generation activities, with 718 international partner organisations, 20% of which were private organisations.
- ✓ This collaboration saw an investment of more than R3,3 billion by the DST's international partners in support of collaboration with South Africa. These relationships and investments were invaluable in expanding and enriching South Africa's knowledge-generation outputs.
- ✓ Support for South African human capital development through international partnerships remains a cross-cutting strategic priority and saw among other things, 1 470 South African students participating in international postgraduate training programmes. This was part of the implementation of the Global Knowledge Partnerships platform, created to support South African students accessing opportunities abroad.



Strategic Outcome-Oriented Goal 5

❑ International Resources

- ✓ Many initiatives to bolster the DST's ability to address poverty, unemployment and inequality in South Africa were fostered with development partners.
- ✓ These focused on the leveraging of global support for the use of knowledge production in South Africa for both economic and inclusive development, the Department facilitated international investment of R517 million in the NSI during the year under review.
- ✓ Through diverse international partnerships, the DST enabled an investment of R91 million by these partners to build and strengthen STI capacity in other African countries.



Strategic Outcome-Oriented Goal 5

❑ **Multilateral Cooperation**

- ✓ The African partnership portfolio has 93 research and innovation projects jointly supported by the DST and African partner governments.
- ✓ 17 African Union and Southern African Development Community (SADC) STI initiatives, for example the SADC Engineering Needs and Numbers initiative, SADC Women in Science, Engineering and Technology (WISET) Organisation and the Pan African University for Space Science.
- ✓ The DST hosted a joint meeting of SADC Ministers for Education and Training and Science, Technology and Innovation as the Chair of SADC in 2018.
- ✓ To mark South Africa's Chairmanship of the SADC, the Department coordinated the production of the first SADC Regional Report on Investment in Research and Development. The report will be presented at the 2019 Joint Meeting of SADC Ministers responsible for Education and Training, and Science, Technology and Innovation.



Strategic Outcome-Oriented Goal 5

❑ **Multilateral Cooperation**

- ✓ South Africa played a significant role in the establishment of the Group on Earth Observations (GEO) and is a founding member. South Africa became Lead Co-Chair of GEO in November 2018, taking over from the United States of America.
- ✓ South Africa is also the current Chair of AfriGEO (formerly AfriGEOSS), an initiative aimed at facilitating and coordinating the participation of Africa in GEO. As Chair, the DST finalised the process for the AfriGEO Secretariat to be hosted at the Regional Centre for Mapping of Resources for Development in Nairobi, Kenya.
- ✓ The DST secured five tactical leadership positions for South Africa in global science decision and policy-making structures, and influenced six multilateral outcomes, which had the objective of positioning the DST and its key priorities strategically for international support.



Overview of Performance per Programme

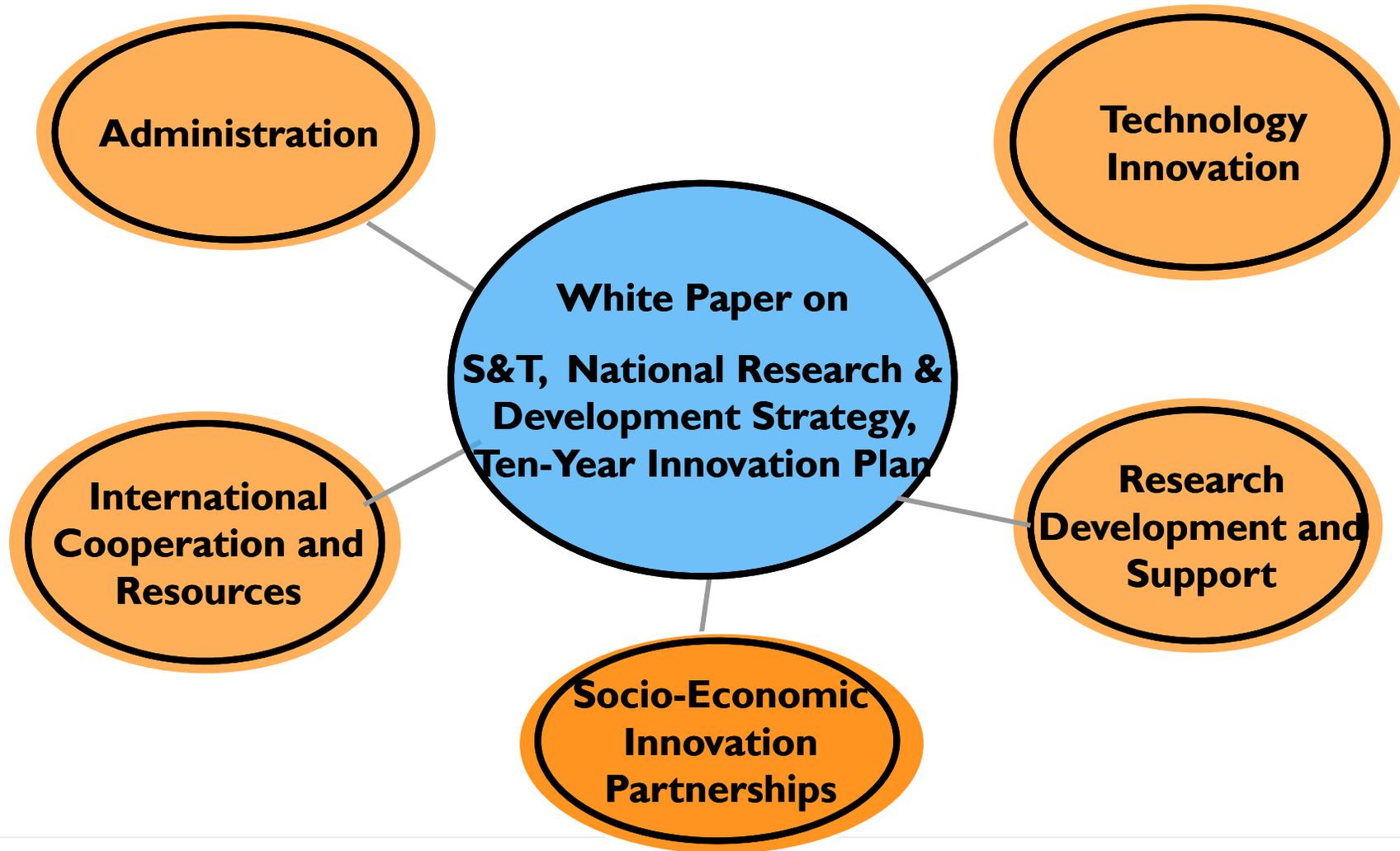


Programme Performance Overview

2019/10/25



DST's Programmes





Annual DST's Performance per Programme

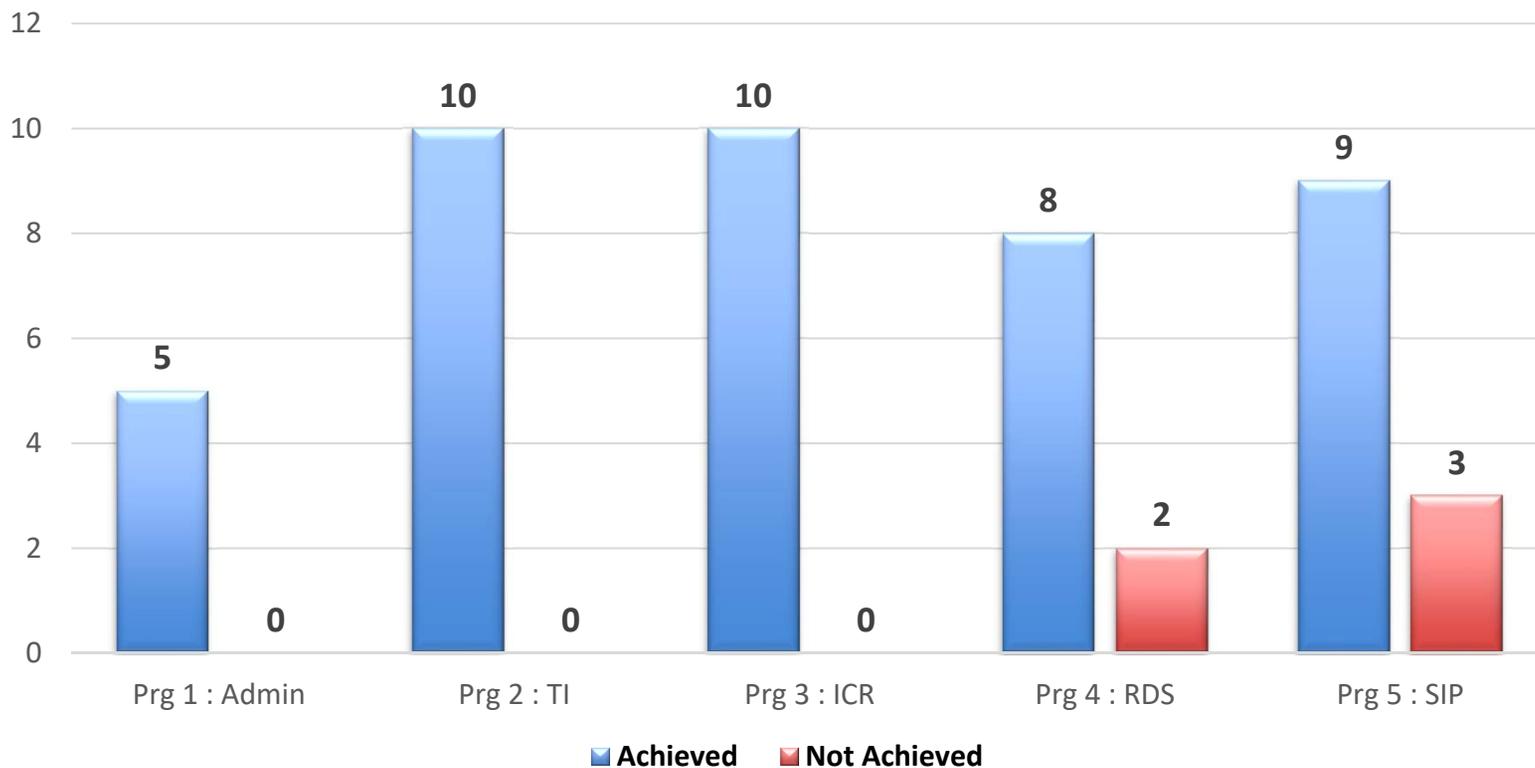
Figure 3 below illustrates the annual performance of the Department per Programme.

- ❑ Programme 1 achieved 100% of its targets.
- ❑ Programme 2 achieved 100% of its targets.
- ❑ Programme 3 achieved 100% of its targets.
- ❑ Programme 4 achieved 80% of its targets and 20% of its targets were not achieved.
- ❑ Programme 5 achieved 75% of its targets and 25% of its targets were not achieved.



Annual DST's Performance per Programme

Performance Per Programme



DST Programme 1

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



Programme 1 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
DST public entities' 2019/20 annual performance plans and annual reports approved by the Minister by 31 March 2019	DST public entities' 2019/20 annual performance plans and annual reports approved by the Minister by 31 March 2019	Achieved
1 combined assurance annual report on the status of combined assurance presented to the Risk and Audit Committees by 31 March 2019	1 combined assurance annual report on the status of combined assurance was presented to the Risk and Audit Committees by 31 March 2019	Achieved
24 media articles written to raise the DST's public profile by 31 March 2019	108 media articles written to raise the DST's public profile by 31 March 2019	Achieved



Programme 1 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
10 public participation programmes held by 31 March 2019	17 public participation programmes held by 31 March 2019	Achieved
Unqualified audit (clean audit) opinion with no financial matters in the audit report	Unqualified audit (clean audit) opinion with no financial matters in the audit report	Achieved

DST Programme 2

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.





Programme 2 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
21 instruments funded in support of knowledge utilisation by 31 March 2019	21 instruments were funded in support of knowledge utilisation by 31 March 2019	Achieved
149 knowledge outputs generated by 31 March 2019	187 knowledge outputs were generated by 31 March 2019	Achieved
5 strategic policy directives in designated areas in support of economic sectors by 31 March 2019	5 strategic policy directives in designated areas in support of economic sectors were developed by 31 March 2019	Achieved



Programme 2 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
2 decision-support interventions maintained by 31 March 2019	2 decision-support interventions maintained by 31 March 2019	Achieved
100% of regulatory recommendations made to the GMO Executive Council through DAFF to support decision making by 31 March 2019	100% of regulatory recommendations were made to the GMO Executive Council through DAFF to support decision making by 31 March 2019	Achieved
220 new disclosures reported by publicly funded institutions by 31 March 2019	311 new disclosures were reported by publicly funded institutions by 31 March 2019	Achieved



Programme 2 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
340 postgraduate students (masters and doctoral) funded in designated areas by 31 March 2019	354 postgraduate students (masters and doctoral) were funded in designated areas by 31 March 2019	Achieved
240 trainees attending training initiatives in designated areas by 31 March 2019	336 trainees attended training initiatives in designated areas by 31 March 2019	Achieved
6 knowledge application products funded in designated areas by 31 March 2019	9 knowledge application products were funded in designated areas by 31 March 2019	Achieved



Programme 2 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
3 commercial outputs in designated areas by 31 March 2019	7 commercial outputs in designated areas by 31 March 2019	Achieved

DST Programme 3

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.





Programme 3 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
R440 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 2019	R517 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 2019	Achieved



Programme 3 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
R280 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 2019	R3 347 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 2019	Achieved



Programme 3 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
650 South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 March 2019	1470 South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 March 2019	Achieved
550 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 2019	718 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 2019	Achieved



Programme 3 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
25 international technical exchanges to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DST Strategic Plan, undertaken with the support of international partners facilitated by the DST by 31 March 2019	36 international technical exchanges to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DST Strategic Plan, undertaken with the support of international partners facilitated by the DST by 31 March 2019	Achieved
80 research, innovation and STI HCD cooperation projects co-funded or supported in kind by DST and at least one other African partner by 31 March 2019	93 research, innovation and STI HCD cooperation projects co-funded or supported in kind by DST and at least one other African partner by 31 March 2019	Achieved



Programme 3 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
R90 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 2019	R91 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 2019	Achieved
17 AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by DST by 31 March 2019	17 AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by DST by 31 March 2019	Achieved



Programme 3 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
4 formally recorded decisions made in intergovernmental STI forums, such as multilateral organisations with a direct bearing on resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2019	6 formally recorded decisions made in intergovernmental STI forums, such as multilateral organisations with a direct bearing on resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2019	Achieved
4 leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2019	5 leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2019	Achieved

2019/10/25

DST Programme 4

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.





Programme 4 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
Not less than 3 100 PhD students awarded an annual bursary funds as reflected in the reports from the NRF and relevant entities by 31 March 2019	3 380 PhD students awarded an annual bursary funds as reflected in the reports from the NRF and relevant entities by 31 March 2019	Achieved
Not less than 790 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2019	802 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2019	Achieved



Programme 4 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
30 annual research infrastructure grants awarded as per award letters by 31 March 2019	35 research infrastructure grants awarded as per award letters by 31 March 2019	Achieved
3 400 Gbps total available broadband capacity provided by SANReN by 31 March 2019	3 557 Gbps total available broadband capacity provided by SANReN by 31 March 2019	Achieved



Programme 4 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
Not less than 4 500 researchers awarded an annual research grant from Programme 4 funds through NRF-managed programmes as reflected by the NRF project reports by 31 March 2019	4 633 researchers awarded an annual research grant from Programme 4 funds through NRF-managed programmes as reflected by the NRF project reports by 31 March 2019	Achieved
Not less than 7 000 research articles published by NRF-funded researchers and cited in the Thomson Reuters Web of Science citation database as reflected in the NRF project reports by 31 March 2019	9 159 research articles published by NRF-funded researchers and cited in the Thomson Reuters Web of Science citation database as reflected in the NRF project reports by 31 March 2019	Achieved



Programme 4 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
64 ultra-high frequency (UHF) science mode receivers installed on MeerKAT by 31 March 2019	64 UHF science mode receivers installed on MeerKAT by 31 March 2019	Achieved
Not less than 2,1 million participants (learners and members of the public) in science awareness and engagement programmes as reflected in the project reports of the NRF and other service providers by 31 March 2019	About 29 418 913 participants (learners and members of the public) in science awareness and engagement programmes as reflected in the project reports of the NRF and other service providers by 31 March 2019	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.





Programme 5 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
6 knowledge products on innovation for inclusive development published by between 1 April 2015 and 31 March 2019	8 knowledge products on innovation for inclusive development published by between 1 April 2015 and 31 March 2019	Achieved
10 decision-support systems maintained and improved by 31 March 2019	10 decision-support system maintained and improved by 31 March 2019	Achieved
9 learning interventions (seminars) generated by 31 March 2019	10 learning interventions (seminars) generated by 31 March 2019	Achieved



Programme 5 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
4 knowledge and innovation products (for example, patents, prototypes, technology demonstrators and technology transfer packages) added to the IP portfolio through fully funded or co-funded research by 31 March 2019	5 knowledge and innovation products (for example, patents, prototypes, technology demonstrators and technology transfer packages) added to the IP portfolio through fully funded or co-funded research by 31 March 2019	Achieved



Programme 5 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
At least 242 masters and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs and the Industry Innovation Programme, including the SIF) by 31 March 2019	At least 249 masters and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs and the Industry Innovation Programme, including the SIF) by 31 March 2019	Achieved
At least 126 interns fully funded or co-funded in R&D related to design, manufacturing and product development by 31 March 2019	At least 250 interns fully funded in R&D related to design, manufacturing and product development or co-funded by 31 March 2019	Achieved



Programme 5 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
At least 26 industrially relevant knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the industrial development IP portfolio by 31 March 2019	At least 42 industrially relevant knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the industrial development IP portfolio by 31 March 2019	Achieved
At least 9 instruments funded in support of increased localisation, competitiveness and R&D-led industry development by 31 March 2019	9 instruments funded in support of increased localisation, competitiveness and R&D-led industry development by 31 March 2019	Achieved



Programme 5 Performance

2018/19 annual achievements

Annual Target	Actual Achievement	Status
8 innovation-support interventions funded or co-funded that strengthen provincial or rural innovation systems between 1 April 2016 and 31 March 2019	11 innovation support interventions funded or co-funded that strengthen provincial or rural innovation systems between 1 April 2016 and 31 March 2019	Achieved



Performance Overview



Targets which were not achieved or underachieved





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

2018/19 annual targets which were not achieved

Annual Target	Actual Achievement	Reasons for non-achievement	Status	Variance Classification
Not less than 10 800 pipeline postgraduate students awarded an annual bursary as reflected in the reports from the NRF and relevant entities by 31 March 2019	9 774 pipeline postgraduate students awarded bursaries as reflected in the NRF and relevant entities by 31 March 2019	The target was missed by 9,4% for two main reasons: (i) The target was a stretch target in an environment where the budget was not growing to keep up with inflation increases in the per capita value of bursaries. (ii) A small portion of the budget was absorbed by the target on doctoral students supported.	Not achieved	Target formulation deficiencies



Unachieved Targets

2018/19 Targets which were not achieved

Annual Target	Actual Achievement	Reasons for non-achievement	Status	Variance Classification
Second biennial report on the state of climate change S&T in South Africa submitted to Cabinet by 31 March 2019	Second biennial report on the state of climate change S&T in South Africa not submitted to Cabinet by 31 March 2019	Owing to the Cabinet's busy schedule, the Minister could not submit the report to Cabinet by 31 March 2019.	Not achieved	Process Delays

Unachieved Targets

2018/19 Targets which were partially achieved

Annual Target	Actual Achievement	Reasons for underachievement	Status	Variance Classification
90 unique honours, masters and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2019	84 unique honours, masters and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2019	New students were not funded in 2018/19 as there was no call for proposals due to the contract for Waste coming to an end in March 2019/20, and there is no guarantee that there will be funding for students to complete the studies. There is also a delay in contracting the Water roadmap. Based on the funding criteria to determine if a student can be counted, a decision was taken to remove the IIP students.	Not Achieved	Process delays

2019/10/25

Unachieved Targets

2018/19 Targets which were partially achieved

Annual Target	Actual Achievement	Reasons for underachievement	Status	Variance Classification
6 statistical reports or policy briefs approved by Exco for publication and/or submitted to Cabinet by 31 March 2019	5 statistical reports or policy briefs approved by Exco for publication and/or submitted to Cabinet by 31 March 2019	The finalisation of 1 policy brief (the impact evaluation of R&D tax incentive) was delayed, largely owing to resignation of the project leader. A new project leader was assigned and it is expected that the report will be finalised in the first quarter of the 2019/20 financial year.	Not Achieved	Process delays

Unachieved Targets

2018/19 Targets which were partially achieved

Annual Target	Actual Achievement	Reasons for underachievement	Status	Variance Classification
Preapproval decisions provided within 90 days from date of receipt for 80% of applications received for the R&D tax incentive received between 1 January 2018 and 31 December 2018	Preapproval decisions provided within 90 days on 39% (or 51) of the 131 applications received from 1 January 2018 to 31 December 2018. for the R&D tax incentive received between 1 January 2018 to 31 December 2018	Almost all applications received prior January 2018. Only 4 such applications remained at 31 March 2019	Not Achieved	Process delays



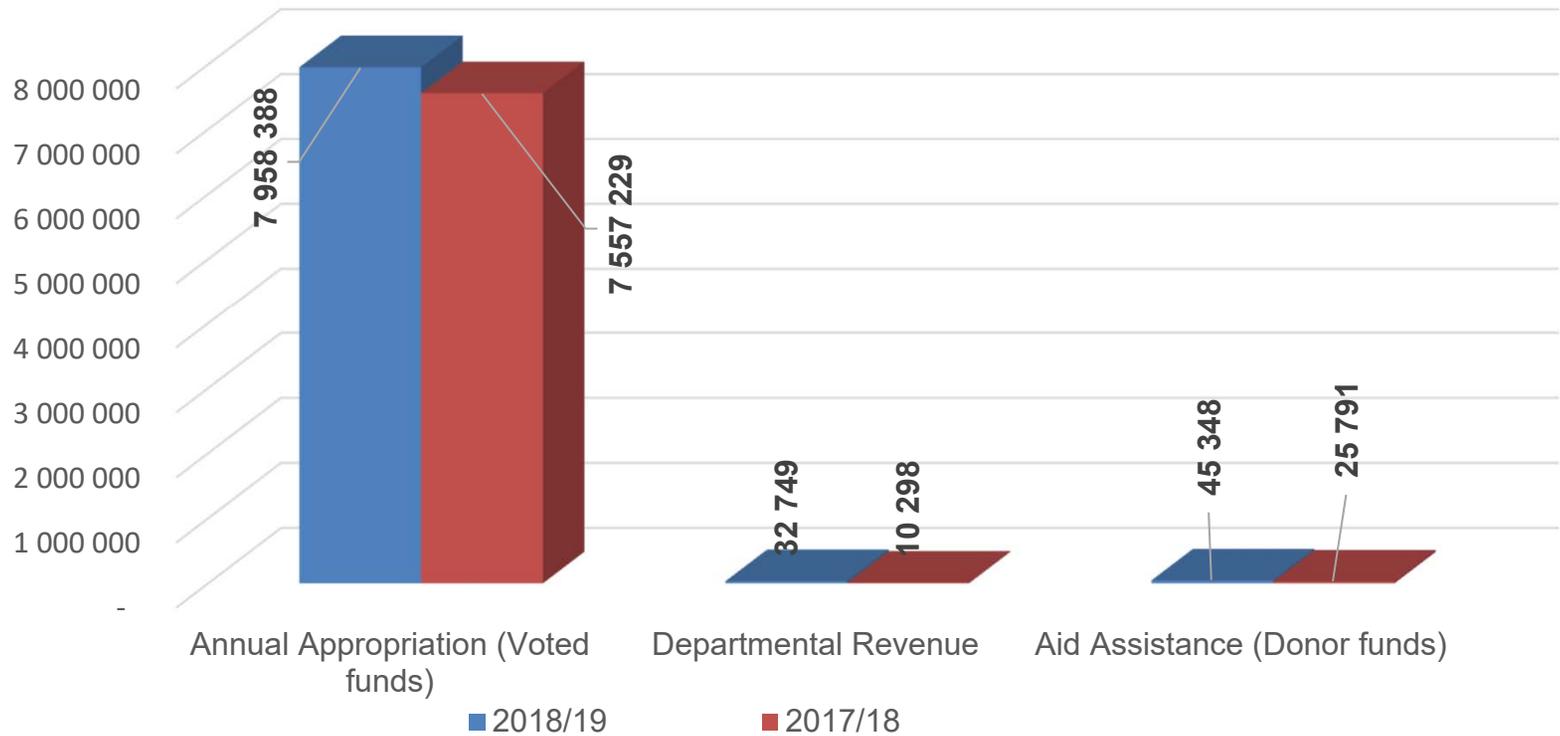
FINANCIAL REPORTING

2019/10/25

Financial Performance

Revenue as per statement of financial performance

Year on year comparison





FINANCIAL PERFORMANCE, *Cont.*

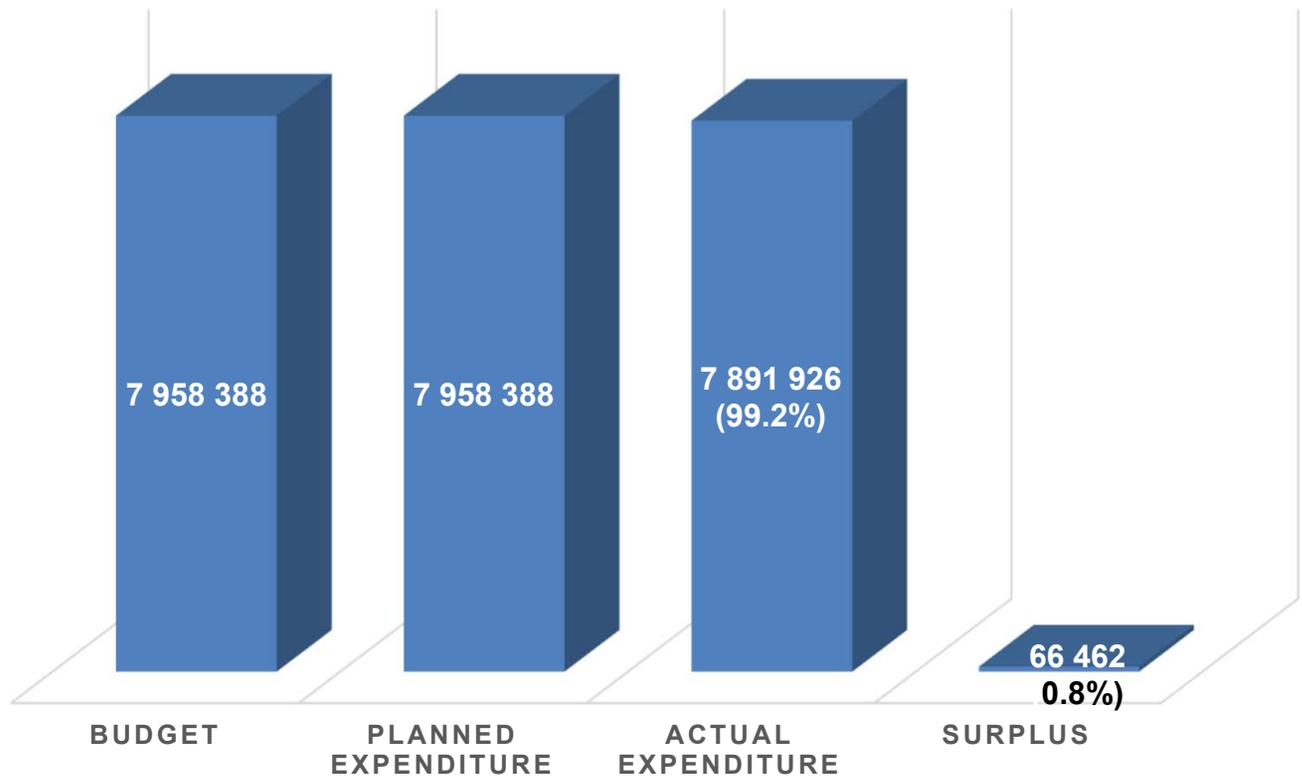
Year on year variances on revenue

- ❑ The annual appropriation increased by 5.3% between 2017/18 and 2018/19 financial years, however, the increase included an additional of R167.9 million for iThemba Labs Isotope facility.
- ❑ The increase in departmental revenue is due to unspent funds returned from projects.
- ❑ The increase in donor funds was due a new allocation of R30 million for Green Economy Development under General Budget Support which is 76%.



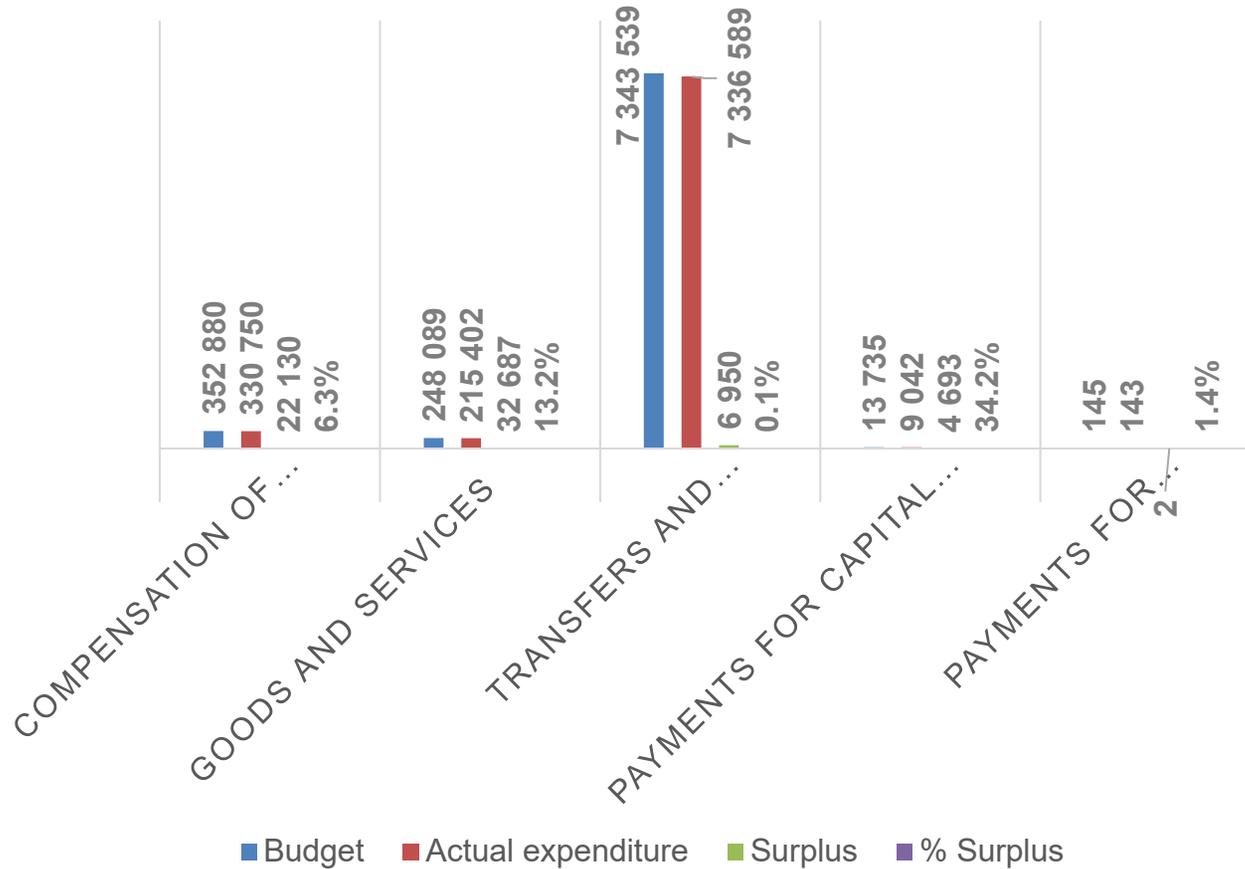
FINANCIAL PERFORMANCE, *cont.*

2018/19 Budget vs. Expenditure Summary



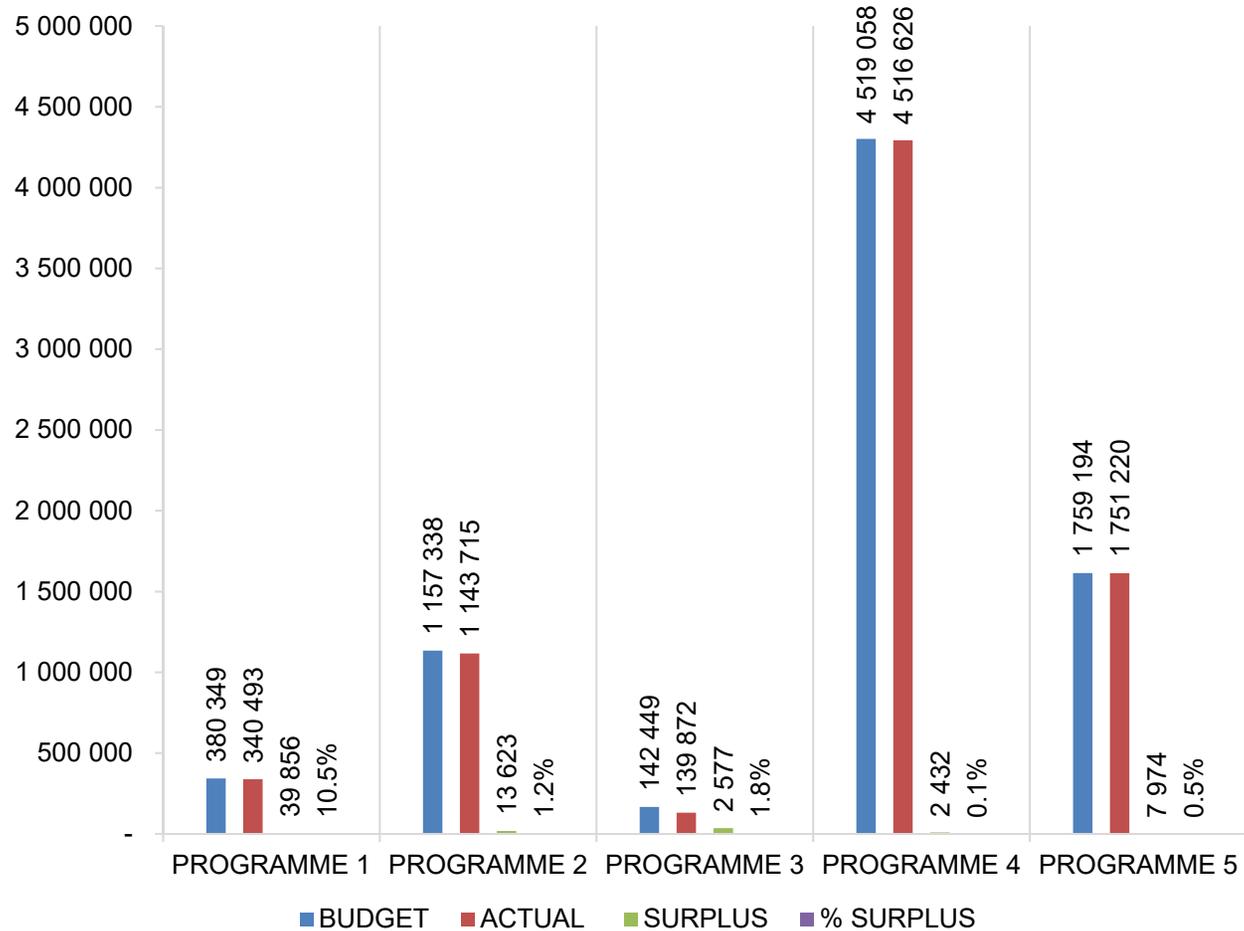
FINANCIAL PERFORMANCE, *cont.*

Budget vs. Expenditure per Economic Classification



FINANCIAL PERFORMANCE, *cont.*

Budget vs. Expenditure per programme



Details Of Expenditure On Transfers And Subsidies: Programmes' 2,4 and 5

Programme 2: Technology Innovation

Theme	Budget R'000	Actual expenditure R'000	Reason for transfer payment
Parliamentary Grants	558 358	558 358	Transfers to support the operations of public entities: South African National Space Agency (R 138 036) and Technology Innovation Agency (R 420 322)
Space Science	18 499	18 499	R&D to support space science initiatives
Hydrogen and Energy	155 471	155 471	Biofuels research, support R&D in the renewable and hydrogen and energy sector and infrastructure support in the energy sector.

Details Of Expenditure On Transfers And Subsidies: Programmes' 2,4 and 5 Cont.

Programme 2: Technology Innovation

Theme	Budget R'000	Actual expenditure R'000	Reason for transfer payment
Bio-innovation	198 225	197 347	Implementation of bio-economy strategy and IKS initiatives and R&D for new health products and services and to combat HIV/AIDS
Innovation Priorities and Instruments	105 918	105 819	To promote Intellectual Property (IP) management, regulation and commercialisation and R&D into new research areas.
National Intellectual Property Management Office	49 000	47 764	Intellectual Property Fund and capacitating offices of technology transfer
Total	1 085 471	1 083 258	

Details Of Expenditure On Transfers And Subsidies: Programmes' 2,4 and 5

Programme 4: Research Development and Support

Theme	Budget R'000	Actual expenditure R'000	Reason for transfer payment
Parliamentary Grants	930 420	930 420	Transfers to support the operations of public entities: Academy of Science of South Africa (R 25 668) and National Research Foundation (R 904 752)
Human Capital and science promotion	1 505 033	1 505 033	Implementation of human capital development initiatives, research and initiatives towards youth involvement in the science arena and To fund research chairs in higher education institutions
Astronomy	740 051	740 051	Infrastructure for SKA project and support to radio and optical astronomy



Details Of Expenditure On Transfers And Subsidies:

Programme 4: Research Development and Support

Theme	Budget R'000	Actual expenditure R'000	Reason for transfer payment
Basic science and infrastructure	1 085 933	1 085 933	Infrastructure development, Operation and management of CHPC initiatives and connectivity of research institutions and policy and institution building.
Science Missions	206 689	206 689	Research into global change, IKS, palioscience and marine.
Total	4 468 126	4 468 126	

Details Of Expenditure On Transfers And Subsidies: Programmes' 2,4 and 5

Programme 5: Socio-economic Innovation and Partnerships

Theme	Budget R'000	Actual expenditure R'000	Reason for transfer payment
Parliamentary Grants	1 266 897	1 266 897	Transfers to support the operations of public entities: Council for Scientific and Industrial Research (R 963 164) and Human Science Research Council (R 303 733)
Innovation for Inclusive Development	25 841	25 841	Supports experimentation with S&T based innovations for tackling poverty, inequality and unemployment through the creation of sustainable job and wealth opportunities and enhancing the delivery of basic services
Science and Technology Investment	13 984	13 984	Information access for decision making-continued development and maintenance of the Research information management system and Development of indicators and instruments for measuring and monitoring investments in S&T and the performance of the NSI



Details Of Expenditure On Transfers And Subsidies: 2,4 and 5

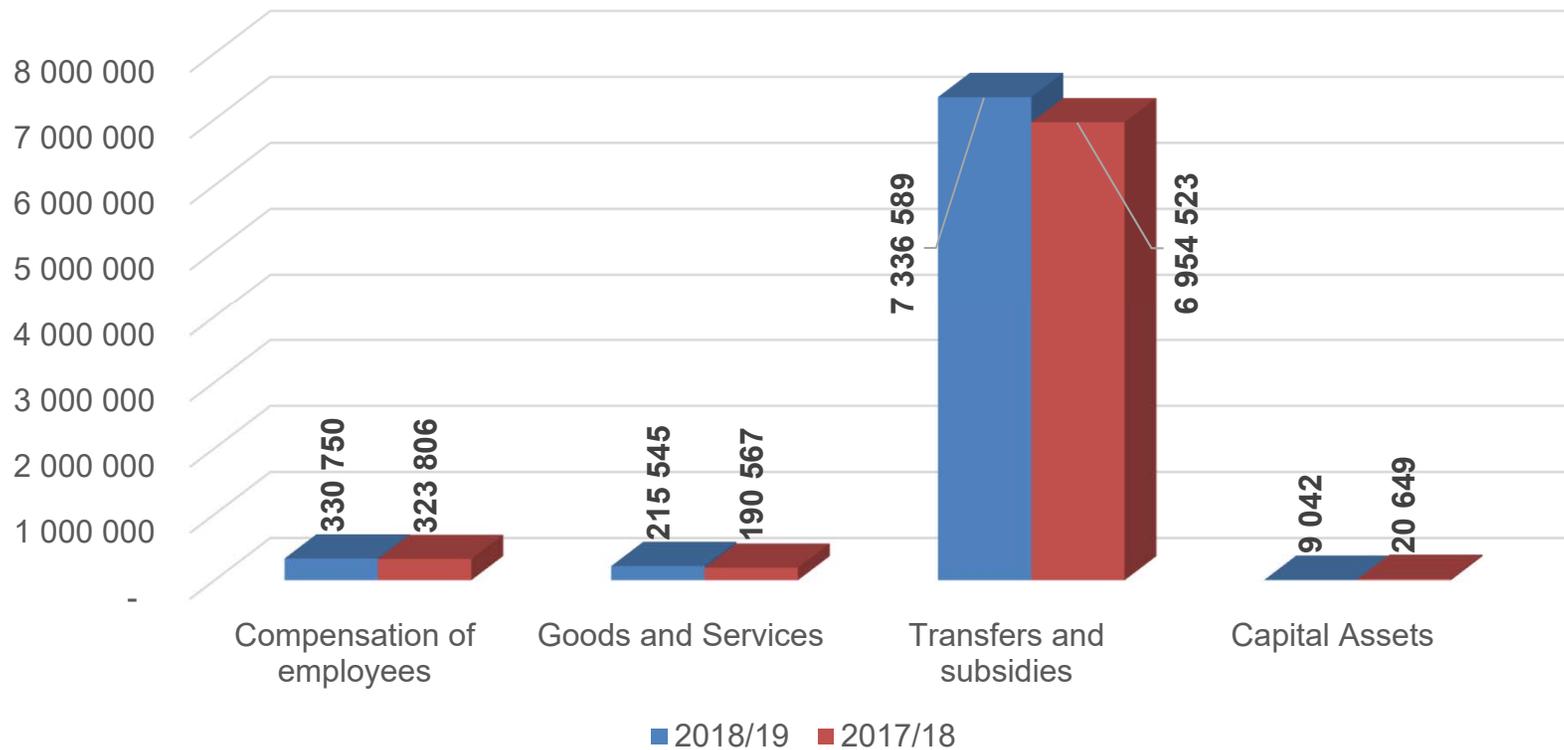
Programme 5: Socio-economic Innovation and Partnerships

Theme	Budget R'000	Actual expenditu re R'000	Reason for transfer payment
Sector Innovation and Green Economy	130 840	129 942	Identifying and initiating S&T programmes that support the growth of the environmental technologies and services sector in South Africa, implementation of the South African ICT RDI roadmap and Support for local innovation interventions and science parks and industry innovation partnerships
Total	1 707 531	1 703 379	

Financial Performance Cont.

Expenditure on voted funds

Year on year comparison





Financial Performance Cont.

Year on year variances on expenditure

- ❑ The expenditure on compensation of employees increased by 2.1% between 2017/18 and 2018/19 financial years, However, the increase would have been more than 2.1% had the vacant rate not increased.
- ❑ The expenditure on goods and services increased by R24.978 million or 13.1% between the two financial years.



Financial Performance Cont.

Year on year variances on expenditure

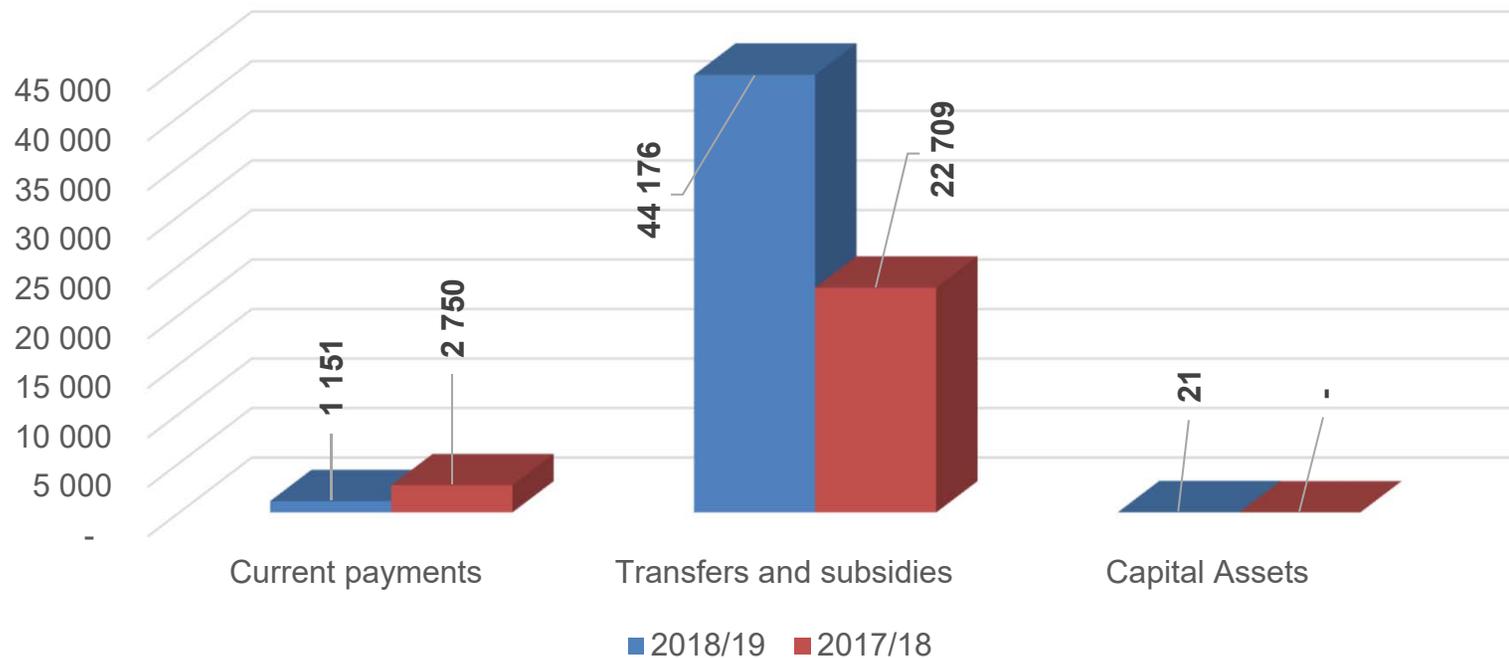
- ❑ The expenditure on transfers and subsidies increased by 3.1% between 2017/18 and 2018/19 financial years.
- ❑ The underspending on transfers and subsidies for 2017/18 amounted to R59.989 million compared to R6.950 million in 2018/19 financial year.
- ❑ The expenditure on payments for capital assets decreased by 56.2% between 2017/18 and 2018/19 financial years. This is due to reduced expenditure on IT equipment.



Financial Performance Cont.

Expenditure on donor funds

Year on year comparison





Financial Performance, cont.

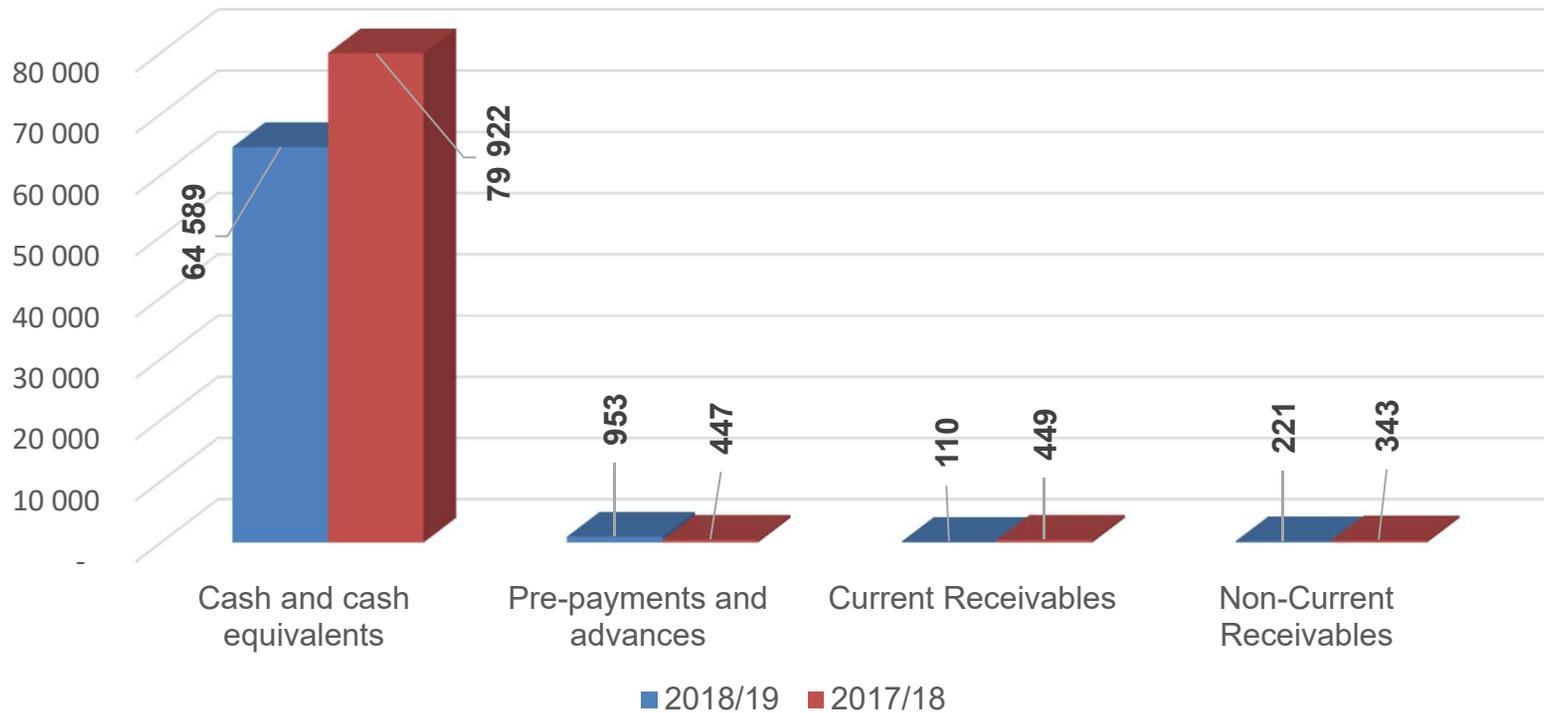
Year on year variances on expenditure

- ❑ The expenditure on current payments decreased by R1.599 million or 58% between 2017/18 and 2018/19 financial years. This is due to reduced number of trips and events that took place in 2018/19.
- ❑ The expenditure on transfers and subsidies increased R21.647 million or 94.5% between 2017/18 and 2018/19 financial years. This is mainly due to an additional allocation of R30 million for Green Economy Development under General Budget Support.
- ❑ There was no expenditure on payments for capital assets in 2017/18 while R21 000 was spent in 2018/19.

Financial Position

Assets in the statement of financial position

Year on year comparison





Financial Position, Cont.

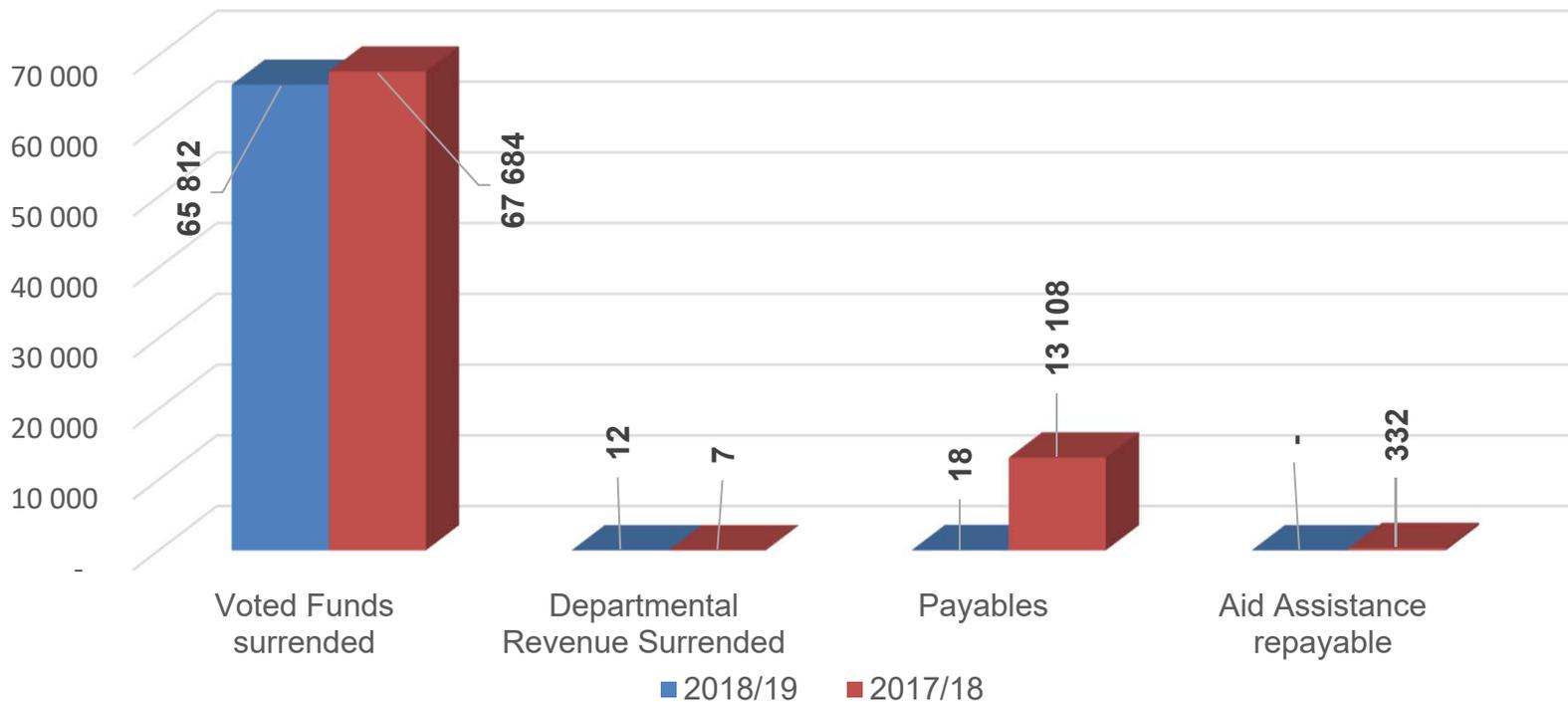
Year on year variances on current assets

- ❑ Cash and cash equivalents decreased by R15.333 million or 19.2% between the two financial years. The spending was higher in 2018/19 as compared to 2017/18 resulting in a decrease in cash and cash equivalents.
- ❑ Prepayments and advances increased by R506 000 or 113.2% between the two financial years. This relates to advance payments made to DIRCO for international trips.
- ❑ Current and non-current receivables decreased by R339 000 or 75.5% and R122 000 or 35.6% respectively between the two financial years. This was due to recovery of staff debts.

Financial Performance, cont.

Liabilities in the statement of financial position

Year on year comparison





Financial Performance, cont.

Year on year variances on current liabilities

- ❑ Voted funds surrendered decreased by R1.872 million or 2.8% between the two financial years.
- ❑ Departmental revenue surrendered increased by R5 000 between the two financial years.
- ❑ Payables decreased by R13.090 million or 99.9% between the two financial years. The DSI received R13 million in 2017/18 from a provincial department as co-funding for Science Centre and was subsequently transferred to the implementing agency in 2018/19 financial year.
- ❑ Aid assistance repayable decreased by R332 000 OR 100% between the two financial years. The donor fund allocation for 2018/19 was 100% spent.

Irregular and Fruitless and Wasteful Expenditure, cont.

Irregular expenditure in 2018/19

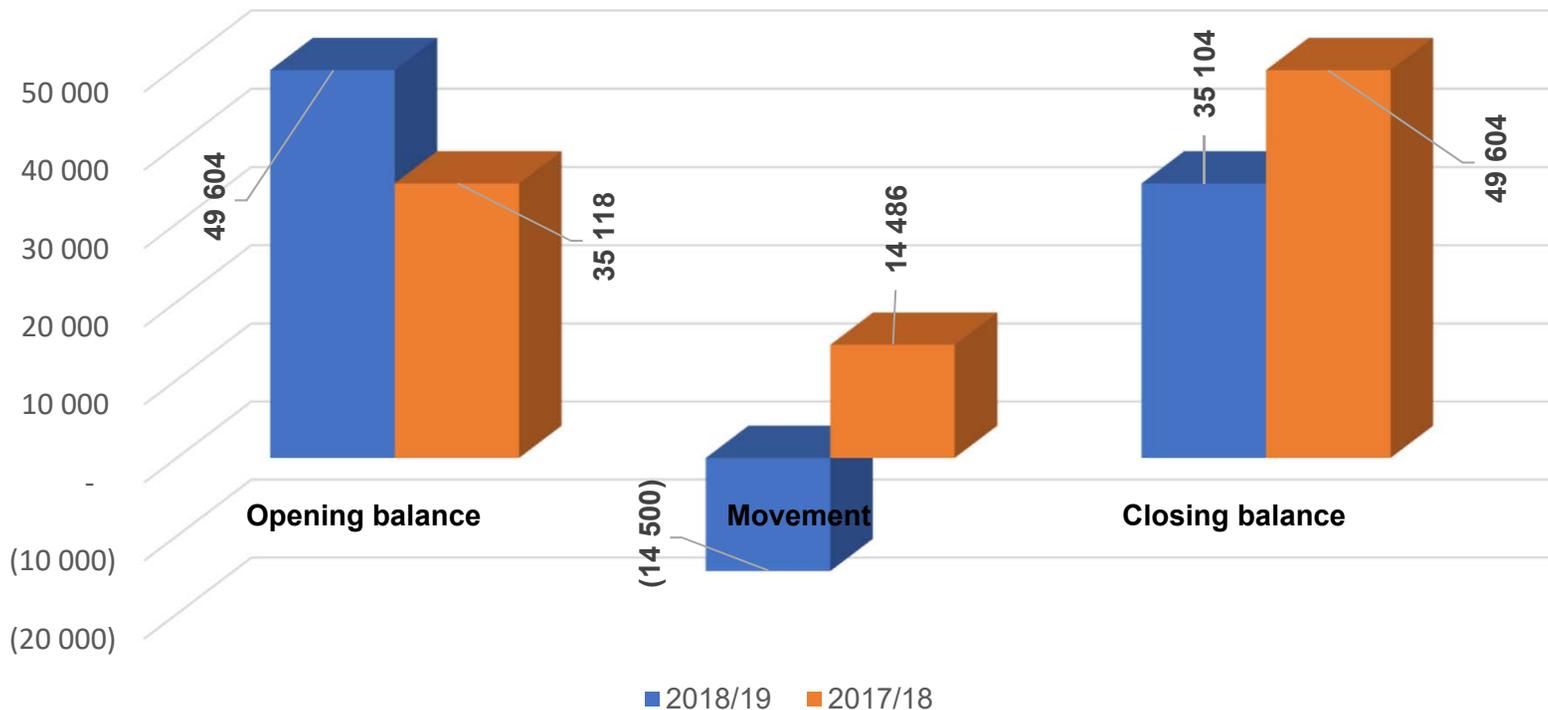
- ❑ In 2018/19, the DSI incurred an irregular expenditure of **R684 000** due to procurement irregularities.
- ❑ The R684 000 comprises of the following four matters.

Amount (R'000)	Service rendered	Progress on the matters
398	International event exhibitions	Investigation finalised and preliminary reports issued.
249	Public awareness on Indigenous Knowledge Systems Bill	
19	Procurement of books	
18	Public awareness of Astronomy Management Authority	Disciplinary action took place.

Irregular and Fruitless and Wasteful Expenditure

Irregular Expenditure as at 31 March 2019

Movement of irregular expenditure for 2017/18 and 2018/19





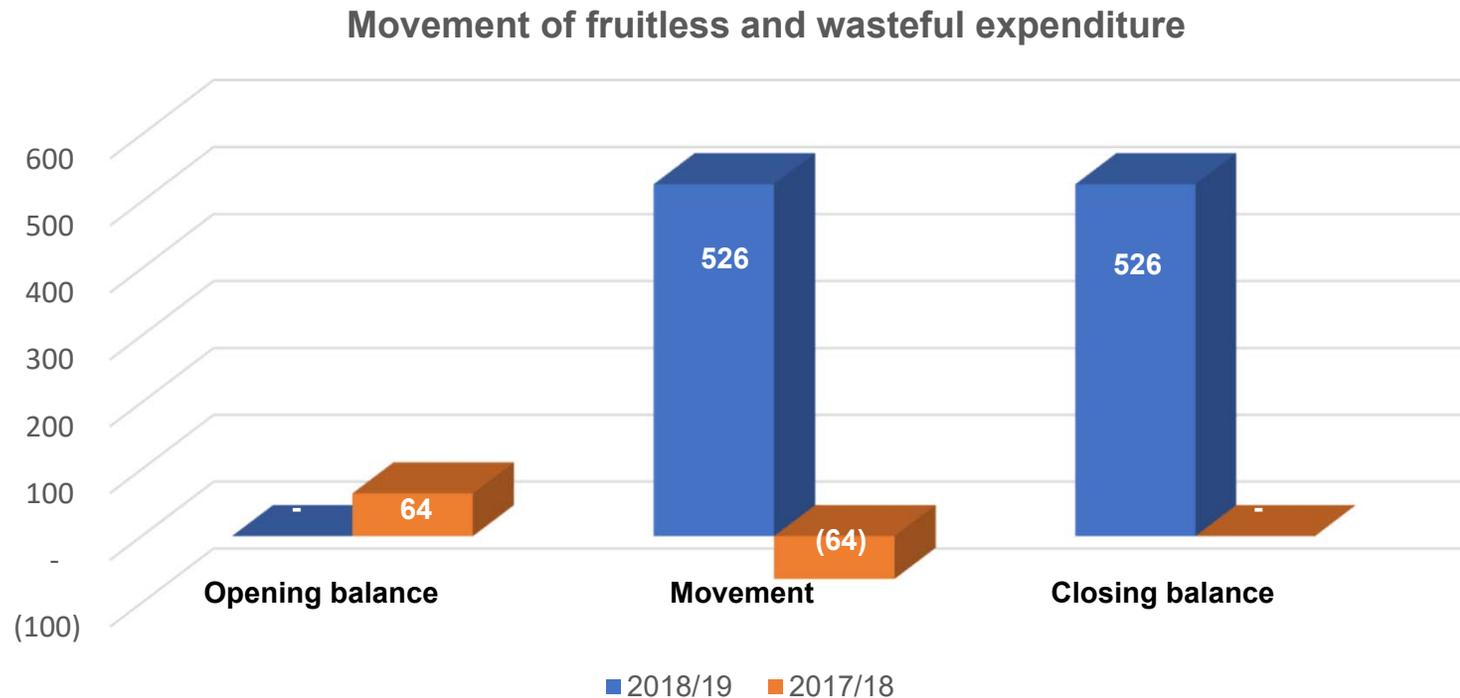
Irregular and Fruitless and Wasteful Expenditure, cont.

Movement of irregular expenditure for 2017/18 and 2018/19

- ❑ The DSI had a historical irregular expenditure of R35.118 million emanating from prior years in 2017/18 financial year.
- ❑ National Treasury (NT) condoned irregular expenditure amounting to R15.184 million which is part of the historical irregular expenditure.
- ❑ From the historic irregular expenditure, the DSI is still waiting for feedback from National Treasury for condonation of R34.420 million.
- ❑ On the historic irregular expenditure, disciplinary actions were taken in areas where officials were found to be responsible.

Irregular and Fruitless and Wasteful Expenditure, cont.

Movement of fruitless and wasteful expenditure for 2017/18 and 2018/19





Irregular and Fruitless and Wasteful Expenditure, cont.

Fruitless and wasteful expenditure for 2018/19

- ❑ The DSI incurred fruitless and wasteful expenditure amounting to R526 000 due to event cancellation.
- ❑ The investigation was conducted to establish the causes of cancellation and whether any official should be held accountable.
- ❑ The investigation was concluded, however, it is currently being discussed internally for clarity on certain matters.

Financial Performance, cont.

Capital assets as per asset register

MOVEMENT IN MOVABLE TANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2019						
	Opening balance R'000	Cash Additions R'000	Non Cash Additions R'000	Finance lease payments R'000	Disposals R'000	Closing balance R'000
Transport assets	7,339	448	341	-	(1,033)	7,095
Computer equipment	56,354	5,576	7	-	(6,233)	55,704
Furniture and office equipment	18,869	30	-	-	(34)	18,865
Other machinery and equipment	22,121	2,988	41	(1,729)	(12)	23,409
MACHINERY AND EQUIPMENT	104,683	9,042	389	(1,729)	(7,312)	105,073



Total Spending On Goods And Services

The DST total expenditure on goods and services from 1 April 2018 to 31 March 2019 amounted to R215 402 000.

Of the R215 402 000, goods and services amounting to 106 379 000 were related to procurement spending whereas goods and services amounting to R109 023 000 were acquired for through the following:

- ❑ Other government agencies such as Government Communication Information Systems for advertising, Department of International Relations and Cooperation for science representatives, Auditor General of South Africa for audit fees.
- ❑ Payments to members of governance structures such as Audit Committees and payment to providers of travel services.
- ❑ Payments for property management.



Procurement Spend

The table below highlights the percentage spend on SMME, black and women owned companies from 1 April 2018 to 31 March 2019.

The spend on SMMEs, Black and Women Owned Companies was as follows:

TOTAL PROCUREMENT EXPENDITURE	TOTAL EXPENDITURE ON SMME COMPANIES	TOTAL EXPENDITURE ON BLACK COMPANIES	TOTAL EXPENDITUR E ON WOMAN OWNED COMPANIES
R106 379 085,60	R41 518 951,29	R48 687 697,11	R24 587 360,13
% Spend	39,03	45,77	23,11



Payment Of Suppliers For The Past 3 Years

Year	% invoices paid within the prescribed period
2016/17	99.59%
2017/18	100%
2018/19	100%



Average Payment Days Of Invoices Per Month (2018/19)

Month	Average payment days
April	10
May	9
June	8
July	7
August	10
September	10
October	9
November	11
December	10
January	11
February	9
March	7
TOTAL AVERAGE NUMBER OF DAYS PER YEAR	9



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 continues 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.
- ❑ To support a skilled and capable workforce the DST will continue to increase the number of high-level graduates and improve their representivity.
- ❑ The Department is committed to maintaining the highest standards of corporate governance, which are crucial for the management of public finances and resources.



The background of the slide is a photograph of a solar farm. Several rows of solar panels are visible, tilted towards the sun. The panels are dark blue/black with a grid pattern. They are set in a lush green field of tall grass. The sky is bright blue with scattered white clouds.

Annexure A: Detailed List Of DST Projects In The Provinces

2019/10/25





List of DST Projects

Name of the Province	Name of the Project	Project in Brief
North-West	Tsakane Agricultural Co-operative Limited (Mmakaunyane) – Vermiculture Technology	Earthworms are an important biotic component in agricultural soils and contribute significantly to their physical, chemical and microbiological properties. Earthworms can catalyze increases in plant growth and plant health. The ARC aims to establish the viability of a commercial scale vermiculture farm by paying specific attention to the optimal choice of earthworm species, sources and types of waste and production infrastructure / equipment.
Gauteng and Limpopo	ARC Aquaculture Tilapia	ARC Animal Production aims to support small-scale farmers and aquaculture producers in Limpopo who have access to irrigation ponds. Mozambique tilapia is to be the focus of a Human Capital Development programme that builds on experience with tilapia breeding, aquaculture and aquaponics programmes.



List of DST Projects

Name of the Province	Name of the Project	Project in Brief
Eastern Cape	Roll-out of Locally Designed and Manufactured Fibrelux™ Machines	The purchase (via TIA) of 30 South African designed and manufactured Fibrelux™ wool grading machines and their deployment for use in the Eastern Cape in partnership with organised agriculture (Wool SA).
Gauteng	Herbal and Botanical Products	South Africa has the potential to launch a variety of products based on its unique indigenous plants. To upgrade existing CSIR facilities into a demonstration, processing and formulation facility for new (indigenous) herbal medicine products.

TSP National Foot-Print

