



**science & innovation**

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

# **2019/20 Second Quarter Performance Report**

**Final**

**1 July – 30 September 2019**

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<b>ACCESS</b>	Applied Centre for Climatic and Earth System Science South African
<b>AGSA</b>	Auditor-General of South Africa
<b>AMCOST</b>	African Ministerial Conference on Science and Technology
<b>APP</b>	Annual Performance Plan
<b>ASSaf</b>	Academy of Science of South Africa
<b>AU</b>	African Union
<b>BFG</b>	Bioinformatics and Functional Genomics
<b>CEO</b>	Chief Executive Officer
<b>CESTII</b>	Centre for Science, Technology and Innovation indicators
<b>CIPC</b>	Companies and Intellectual Property Commission
<b>CRDP</b>	Comprehensive Rural Development Programme
<b>CSIR</b>	Council for Scientific and Industrial Research
<b>CTR</b>	Centre for Translational Research
<b>DBE</b>	Department of Basic Education
<b>DIRCO</b>	Department of International Relations and Cooperation
<b>DPME</b>	Department of Planning, Monitoring and Evaluation
<b>DSI</b>	Department of Science and Innovation
<b>DTI</b>	Department of Trade and Industry
<b>EC</b>	European Commission
<b>EDCTP</b>	European and Developing Countries Clinical Trials Partnerships
<b>EE&amp;DSM</b>	Energy Efficiency and Demand Side Management

<b>EGP</b>	Eucalyptus Genome Platform
<b>EIAP</b>	Emerging Industries Action Plan
<b>ENE</b>	Estimates of National Expenditure
<b>ERA</b>	Emerging Research Areas
<b>ERM</b>	Enterprise Risk Management
<b>ESASTUP</b>	European South African Science and Technology Advancement Programme
<b>ESOF</b>	EuroScience Open Forum
<b>EU</b>	European Union
<b>Exco</b>	Executive Committee
<b>FACTS</b>	Follow on African Consortium for Tenofovir Studies
<b>FEI</b>	Flourochemicals Expansion Initiative
<b>FP7</b>	Framework Programme – 7
<b>GCSSRP</b>	Global Change, Society and Sustainability Research Programme
<b>GDP</b>	Gross Domestic Product
<b>HCD</b>	Human Capacity Development
<b>HELP</b>	Herschel Extragalactic Legacy Programme
<b>HLPD</b>	High Level Policy Dialogue
<b>HPC</b>	High Performance Computing
<b>HSSIWG</b>	Human and Social Science Infrastructure Working Group
<b>HySA</b>	Hydrogen South Africa
<b>IAA</b>	Internal Audit Activity
<b>IATs</b>	Institute of Advanced Tooling
<b>ICASA</b>	Independent Communications Authority of South Africa
<b>ICR</b>	International Cooperation and Resources
<b>ICSU</b>	International Council for Science

<b>ICT</b>	Information and Communication Technology
<b>ICT4E</b>	Information and Communication Technology of Basic Education
<b>IDEWS</b>	Infectious Diseases Early Warning Systems
<b>iIKSSA</b>	Indigenous Knowledge Systems of South Africa trust
<b>IISA</b>	International Institute for Applied Systems Analysis
<b>IK</b>	Indigenous Knowledge
<b>IKS</b>	Indigenous Knowledge Systems
<b>IP</b>	Intellectual Property
<b>IR</b>	International Resources
<b>ISA</b>	Information System Architecture
<b>ISI</b>	Institute for Scientific Information
<b>IT</b>	Information Technology
<b>ITEC</b>	International Travel and Education Cooperation
<b>IU</b>	Implementation Unit
<b>MCA</b>	Multilateral Cooperation and Africa
<b>MEA</b>	Membrane Electrode Assembly
<b>MH</b>	Metal Hydride
<b>MoU</b>	Memorandum of Understanding
<b>MPFP</b>	MultiPurpose Fluorination Pilot Plant
<b>MTEF</b>	Medium-Term Expenditure Framework
<b>NACI</b>	National Advisory Council on Innovation
<b>NAM</b>	Non-Aligned Movement
<b>NECSA</b>	Nuclear Energy Corporation South Africa
<b>NEP</b>	National Equipment Programme
<b>NF</b>	National Facilities

<b>NICIS</b>	National Integrated Cyberinfrastructure System
<b>NIPMO</b>	National Intellectual Property Management Office
<b>NNEP</b>	National Nanotechnology Equipment Programme
<b>NRDS</b>	National Research and Development Strategy
<b>NRF</b>	National Research Foundation
<b>NSI</b>	National System of Innovation
<b>NSW</b>	National Science Week
<b>NT</b>	National Treasury
<b>NWISET</b>	National Women in Science , Engineering and Technology
<b>NYS</b>	National Youth Service
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>OTT</b>	Office of Technology Transfer
<b>PCT</b>	Patent Cooperation Treaty
<b>PHI</b>	Post-Harvest Innovation
<b>PPGME</b>	Policy, Planning, Governance, Monitoring and Evaluation
<b>PPP</b>	Public Participation Programme
<b>R&amp;D</b>	Research and Development
<b>RDI</b>	Research, development and innovation
<b>RDS</b>	Research, development and support
<b>RE</b>	Renewable Energy
<b>S&amp;T</b>	Science and Technology
<b>SACNASP</b>	South African Council for Natural Scientific Profession
<b>SADC</b>	South African Development Community
<b>SAEON</b>	South African Environmental Observation Network
<b>SAMCOST</b>	Southern African Ministerial Conference on Science and Technology

<b>SANSA</b>	South African National Space Agency
<b>SANWATCE</b>	Southern African Network of Water Centres of Excellence
<b>SARChI</b>	South African Research Chairs Initiatives
<b>SARIR</b>	South African Research Infrastructure Roadmap
<b>SASSCAL</b>	Southern African Science Service Centre for Climate Change and Adaptive Land Management
<b>SA-YSSP</b>	Southern African-Young Scientists Summer Program
<b>SEP</b>	Socio-Economic innovation Partnership
<b>SETI</b>	Science, Engineering and Technology Innovation
<b>SIF</b>	Sector Innovation Fund
<b>SKA</b>	Square Kilometer Array
<b>SKA/AVN</b>	SKA and African Very Long Baseline Interferometry Network
<b>SKARAB</b>	SKA Reconfigurable Architecture Boards
<b>SLA</b>	Service Level Agreement
<b>STEPSA</b>	Spatial Temporal Evidence for Planning South Africa
<b>STI</b>	Science, Technology and Innovation
<b>STISA</b>	Science, Technology and Innovation for South Africa
<b>TDGs</b>	Technology Development Grants
<b>TIA</b>	Technology Innovation Agency
<b>TIPS</b>	Trade and Industrial Policy Strategy
<b>TISC</b>	Technology and Innovation Support Centre
<b>TLIU</b>	Technology Localization Implementing Unit
<b>TMP</b>	Technology Matchmaking Project
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>USAID</b>	United States Agency for International Development
<b>WIPO</b>	World Intellectual Property Organisation

<b>WISA</b>	Women in Science Awards
<b>WRC</b>	Water Research Council



## 1. INTRODUCTION

In an effort to enhance service delivery by the government using the 2019/20 Annual Performance Plan (APP) as an implementation mechanism, the Department continued to contribute to the government's Programme of Action within the Medium-Term Strategic Framework by implementing its five strategic outcome-oriented goals as articulated in the DSI Strategic Plan. These goals are a responsive, coordinated and efficient national system of innovation; increased knowledge generation; using knowledge for economic development; human capital development (HCD); and using knowledge for inclusive development.

The 1996 White Paper on Science and Technology, which introduced the concept of a national system of innovation (NSI), is the current underlying policy framework for the science and technology sector and continued to guide the DSI's service delivery environment in the current financial year. Guided by the current APP, the main focus of the Department during the reporting period is to create an environment in which its work and the work of the wider NSI contribute to the reduction of inequality, poverty and unemployment in South Africa, and give marginalised communities more and better opportunities to participate fully in the economy.

Treasury Regulation 5.3.1 requires the accounting officer to establish procedures for quarterly reporting to the executive authority to facilitate effective performance monitoring, evaluation and corrective action.

Procedures for quarterly reporting have been established through the August 2011 National Treasury Guidelines, "Preparation of Quarterly Performance Reports Guidelines", in line with the Presidency's outcomes-based approach. Both the National Treasury and the DSI's "Performance Information Policy and Procedure Manual" (PIPPM) require that, where there are deviations between planned and actual performance, reasons for the deviations be provided.

This second quarter review presents the progress made from 1 July to 30 September 2019, including the challenges and issues confronting Department of Science and

Innovation (DSI) Programmes in their pursuit of the 2019/20 financial year targets as outlined in the Annual Performance Plan (APP). This review also provides details of the financial transactions of the DSI as at 30 September 2019.

The overall progress of performance is based on the three classification categories. The legend keys below explain the overall progress as per DSI performance indicators:



Note that the colour code is referring to the quarterly targets and these exclude the ones which were not planned for.

- Red – **Not achieved** that the target has not been achieved within the planned timeframes; major remedial action and urgent interventions are required.
- Green – **No target due** and no major action is needed since there are no planned targets within the planned timeframes.
- Blue – the quarterly target is **achieved** within the planned timeframes.

## 2. DSI SECOND QUARTER PERFORMANCE OVERVIEW

Performance information plays a significant role in measuring the contributions of the DSI to the priorities of government, utilisation of budget allocations and the monitoring of service delivery in line with its mandate. Therefore, this report provides progress on the implementation of an institution's APP during the reporting quarter, with particular reference to monitoring delivery against quarterly performance targets.

Figure 1 below illustrates the performance of the DSI from July to September 2019 after having integrated all the latest amendments by the Programmes with regard to the finalisation of evidence which was initially outstanding.

During the period under review, the total number of planned output targets was 25. The Department achieved 76% of the planned output targets and 24% of the planned output targets were not achieved.

**Figure 1: The overall 2019/20 DSI's second-quarter performance**

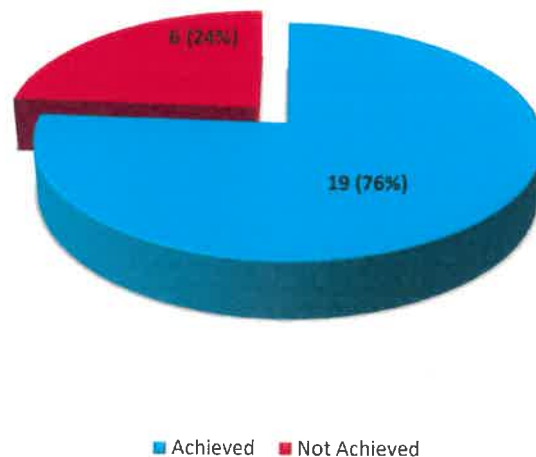
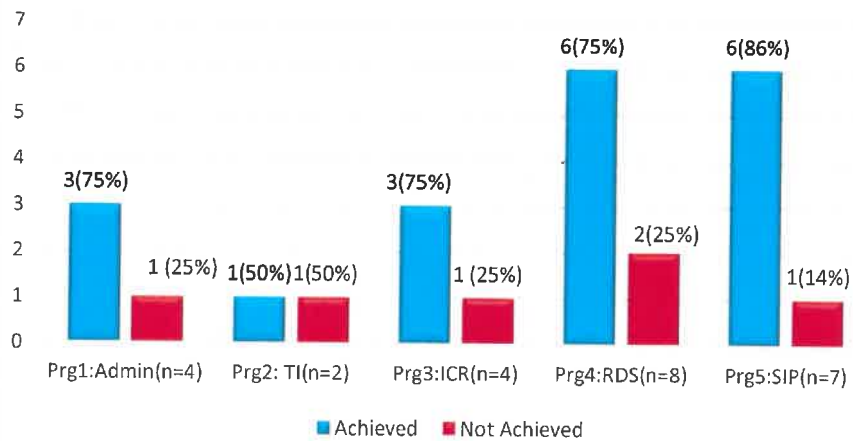


Figure 2 below illustrates the performance of the Department per Programme during the first quarter. The DSI planned to achieve a total number of 25 output

targets for the 2019/20 financial year. Performance is based on all five Programmes.

- Programme 1 achieved 75% of its targets and 25% of the planned targets were not achieved,
- Programme 2 achieved 50% of its targets and 50% of the planned targets were not achieved,
- Programme 3 achieved 75% of its targets and 25% of the planned targets were not achieved,
- Programme 4 achieved 75% of its targets and 25% of the planned targets were not achieved.
- Programme 5 achieved 86% of its targets and 14% of the planned targets were not achieved.

**Figure 2: The DSI second quarter performance per Programme**



## **PROGRAMME 1: ADMINISTRATION**

The purpose of the Programme is to conduct the overall management and administration of the Department; to ensure that organisations funded by the Department comply with good corporate governance standards and that their activities are aligned with the strategic focus of the NSI and monitor and evaluate the performance of the science councils.

The Programme consists of the following chief directorates:

- (a) **The Ministry and Office of the Director-General:** Supports the Minister, Deputy Minister and Director-General by providing professional and executive support. This component is responsible for the systems and mechanisms for handling Parliamentary questions and replies, Cabinet matters, correspondence, submissions and memoranda. It also coordinates activities within the Department to assist in steering the NSI towards the development of a knowledge-intensive economy with higher productivity levels.
- (b) **Enterprise Risk Management (ERM):** Provides and drives an enabling environment in support of the identification, management and oversight of risks across strategic, tactical and operational levels in the Department. This role includes ensuring that countering fraud and/or corruption is made an integral part of strategy, operations and administration within the Department.
- (c) **Policy, Planning, Governance, Monitoring and Evaluation (PPGME):** Supports the DSI leadership in steering the NSI by facilitating the coordination of selected cross-cutting issues in the Department, strategic and operational planning, monitoring and evaluation for the Department and its public entities, and governance of the public entities, in order to assist the Department and its entities to contribute to the realisation of departmental and national priorities.
- (d) **Internal Audit Activity (IAA):** Serves as the primary assurance tool for improving the Department's governance, risk management and management controls by providing insight and recommendations based on the analysis and assessment of data and business processes.
- (e) **Human Resources (HR):** Ensures that the Department is able to (a) provide a professional service through accurate, consistent and best employment

practices in all its activities; (b) attract, retain and motivate employees who share the organisational vision; (c) champion change and transition, with a view to being a catalyst in the transition of people and the organisation to embrace and implement change; (d) set performance standards and manage performance against them; (e) promote an environment that supports the personal and career development of all employees so that they can reach their full potential and contribute better to the achievement of the Department's strategic objectives; (f) instil a culture of service excellence; and (g) provide an environment that promotes health, wellness and safety, and embraces the value of diversity.

- (f) **Finance:** Ensures the effective, efficient and economical use of financial resources in line with financial prescripts, through the development and implementation of financial systems, policies, frameworks and procedures. This includes budget planning and expenditure monitoring, and the management of procurement, acquisition, logistics, assets and financial transactions.
- (g) **Information System and Knowledge Management:** Is responsible for the delivery of services that support the Department's Strategic Plan and individual units' objectives through the effective use of IT. The component's purpose is to align the IT strategy with the business strategy to ensure that the Department uses its resources optimally.
- (h) **Science Communication:** Provides strategic communication support to raise local and international awareness of the objectives and activities of the Department, its entities and the NSI, as well as to ensure effective communication among DSI and NSI stakeholders. Its overall focus is to create public awareness and brand the Department as a custodian of developments, benefits and opportunities in publicly funded STI initiatives across the country's science system. This is done through print, broadcast and online media, speeches and events, including public participation programmes. The component also supports science engagement programmes by the South African Agency for Science and Technology Advancement (SAASTA) and others, and ensures the alignment of the DSI communication strategy with the Government Communication Framework.
- (i) **Legal Services:** Is responsible for ensuring that the interests of the Department are protected against any legal risk. The component ensures that the

Department complies with all relevant legislation, and takes a proactive approach to dealing with matters that have the potential to give rise to conflict or legal challenges.

## **Highlights of the Quarter**

### **Policy**

A framework for the Decadal Plan has been developed.

### **Governance**

#### **Entities' 2019/20 Annual Performance Plans (APPs)**

- The APPs were tabled in Parliament by the new Administration during June 2019.

#### **Appointment of Boards/Councils**

- The call for nominations of persons to be considered for appointment to the SACNASP Council was published in print and electronic media.
- The Selection Panel met and compiled a shortlist of candidates from the nominations received by the Department.
- The Shortlist was presented to the Minister.
- The appointment process is at an advanced stage.

### **Monitoring and evaluation**

#### **Evaluation projects**

Evaluations are an essential component of Monitoring and Evaluation. During the reporting period progress was made:

The DSI three-year Evaluation Plan was approved during the reporting quarter with two evaluation projects. The two evaluation subjects are (1) an implementation and impact evaluation of the Department of Science and Innovation-DSI-NRF Internship Programme and (2) an implementation evaluation of the National Equipment Programme (NEP).

**TABLE 1: PROGRAMME 1 ADMINISTRATION 1**

<b>Strategic statement: To coordinate the identification, formulation and implementation of strategic initiatives and ensure that the priorities of the DSI and its entities are aligned to national priorities</b>						
<b>Annual target: DSI public entities' 2019/20 annual performance and annual reports plans approved by the Minister by 31 March 2020</b>						
<b>Performance indicator: DSI public entities' strategic and annual performance plans approved by the Minister and shareholder compacts signed by the Minister and chairpersons of the boards</b>						
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>	<b>Actions taken</b>
No target	No target due	First draft APPs for DSI public entities submitted to NT and the DPME by 31 August 2019, Annual reports of public entities tabled in Parliament by 30 September 2019	First draft APPs for DSI public entities were not submitted to NT and the DPME by 31 August 2019 however, the Annual reports of public entities were tabled in Parliament by 30 September 2019	<b>Not Achieved</b>	The DPME moved the deadline for the submission of the strategic and annual performance plan from 31 August to 31 October 2019	None
<b>Strategic statement : To develop and maintain good corporate governance systems for the Department and its entities</b>						
<b>Annual target: 1 combined assurance annual report on the status of combined assurance presented to the Risk and Audit Committees by 31 March 2020</b>						
<b>Performance indicator: Combined assurance annual report on the status of combined assurance presented to the Risk and Audit Committees</b>						
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>	<b>Actions taken</b>
No target	No target due	No target	No target due	<b>No target due</b>	None	None



<b>Strategic statement: To provide strategic communication for the DSI and its entities through marketing, media and branding initiatives, and the Science Engagement</b>						
<b>Annual target: 24 media articles written to raise the DSI's public profile by 31 March 2020</b>						
<b>Performance indicator: Number of media articles written to raise the DSI's public profile</b>						
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>	<b>Actions taken</b>
4 media articles written to raise the DSI's public profile	30 media articles were written to raise the DSI's public profile	8 media articles written to raise the DSI's public profile	95 media articles were written to raise the DSI's public profile	<b>Achieved</b>	Partnership with Media Torque provided more opportunities for profiling	None
<b>Annual target: 10 public participation programmes held by 31 March 2020</b>						
<b>Performance indicator: Number of public participation programmes held</b>						
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>	<b>Actions taken</b>
2 public participation programmes held	4 public participation programmes held	2 public participation programmes held	3 public participation programmes held	<b>Achieved</b>	More opportunities presented	None
<b>Strategic statement: To ensure effective and efficient financial and procurement services</b>						
<b>Annual target: Unqualified audit (clean audit) opinion with no financial matters in the audit report</b>						
<b>Performance indicator: Unqualified audit (clean audit) opinion with no financial matters in the audit report</b>						
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>	<b>Actions taken</b>
No target	No target due	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	<b>Achieved</b>	None	None

## **PROGRAMME 2: TECHNOLOGY INNOVATION**

The purpose of the Programme is to drive strategic research, development and innovation (RDI) in space science and technology, energy, the bioeconomy, and the emerging and converging areas of nanotechnology, robotics, photonics and indigenous knowledge systems (IKS), and to promote the realisation of commercial products, processes and services from these RDI initiatives. In addition, through the implementation of enabling policies and interventions along the entire innovation value chain, to promote the protection and utilisation of IP, technology transfer and technology commercialisation.

The Programme provides policy leadership in the DSI's long-term cross-cutting RDI initiatives through four chief directorates.

**Bioinnovation** Chief Directorate leads the DSI's implementation of the National Bioeconomy Strategy, with its prime focus on the socio-economic outcomes and the strengthening of research and innovation competencies that form the strategic base of the bio-based NSI, rather than the mere development of technologies.

**Hydrogen and Energy** Chief Directorate develops a portfolio of technologies to contribute towards resolving the energy security challenge, to increase local mineral beneficiation, and to facilitate South Africa's transition towards a knowledge-driven economy. In line with the NDP, the MTSF and the Nine-Point Plan, the chief directorate seeks to facilitate the achievement of economic development and social equity by including locally developed cleaner energy technology solutions in South Africa's energy system.

**Space Science and Technology** Chief Directorate supports the creation of an environment conducive to the implementation of the Space Science and Technology Grand Challenge, the National Space Strategy and SAEOS, as well as addressing the development of space technologies, innovative solutions and human capital to respond to national priorities and boost socio-economic growth. The chief directorate is also focusing on the development of human capital through targeted programmes

in the thematic areas of earth observation and satellite engineering; navigation and positioning; space science and exploration; and satellite communication. The satellite technology platforms and infrastructure in space S&T will play an important role in decision-making processes in both the public and private sectors.

### **Innovation Priorities and Instruments**

The Chief Directorate supports and strengthens the innovation policy package (and related interventions) aimed at creating and sustaining an enabling environment for innovation, technology development, and commercialisation of publicly funded Research and Development (R&D) initiatives. In performing this function, IPI supports the identification, development, creation and support of policy and institutional structures that facilitate technology development and its progression into national and international markets. The chief directorate also focuses on the conceptualisation, piloting and monitoring and evaluation of innovation policy instruments, such as those centred on the Department's Commercialisation Framework. It is further supporting the development and implementation of emerging and converging technologies that have the potential to influence and affect social and economic development positively, in areas such as synthetic biology, structural biology, systems biology and functional genomics, nanotechnology, photonics and robotics.

**National Intellectual Property Management Office (NIPMO)** is the national implementing agency for the Intellectual Property Rights from Publicly Financed Research and Development Act (IPR-PFRD Act), is currently located in the department as a specialised service delivery unit. NIPMO's key functions, as set out in the IPR Act. To facilitate the establishment of OTTs at institutions (27 higher education institutions and 11 Schedule 1 institutions, which are mostly science councils) and associated capacity development. To ensure compliance with the IPR Act and Regulations by recipients of publicly financed R&D. To provide funding through the IP Fund for the protection and maintenance of IP emanating from publicly financed R&D. To provide incentives for IP creators to encourage them to disclose, protect and commercialise their creations.

## **Highlights of the Quarter**

In realising the Technology Innovation mandate, the following are put forward as highlights.

### **1. Increased knowledge generation**

In its efforts to increase public awareness of platinum beneficiation through hydrogen and platinum-based fuel cells, the DSI, together with the Hydrogen South Africa (HySA) Centres of Competence provided inputs into a number of articles on hydrogen and fuel cells published in Creamer Media's Mining Weekly as part of a special feature on Fuel Cells. The articles are contained in volume 25, no. 36, September 20-26, 2019 issue of Mining Weekly. The Bio Innovation Chief Directorate partnered with the Technology Innovation Agency (TIA) and AfricaBio and hosted the second annual BIO Africa Convention at Inkosi Albert Luthuli International Convention Centre (ICC), Durban, South Africa from 26 to 28 August 2019. Themed "Africa: Transcending Consumerism, Leading Innovation", the three-day event built on the success of 2018's inaugural BIO Africa Convention.

Sub themes covered spun across the four Bio economy sectors identified by the Bio-Economy strategy (Agriculture, Health, Industry and Environment as well as the Indigenous Knowledge Systems), the sub themes are; Smart and digital Agriculture; Digital health – opportunity to leap frog the health gap in Africa; Holistic and inclusive African Natural Medicine research; Innovations in the sugar industry, etc.

The Bio-innovation Chief Directorate managed to organise a pre-Convention Academy in partnership with the International Centre for Genetic Engineering and Biotechnology (ICGEB), a new feature for the BIO Africa Convention. The small and medium-sized enterprises (SMEs), government officials and academics from across the African continent participated in courses in the areas of Biosafety, Biosimilars, and Media and Science Communication (offered by Dr Chris Smith, the naked Scientist). The Media and Science communication course will cater for the scientists, policy makers and

entrepreneurs in order to improve on their communication skills. A sponsorship was awarded to some of the trainees for further science communication training in Oxford.

'A special session on 'Medical Cannabis Symposium' was organised as part of the Bio Africa convention. The symposium covered aspects of legislation and regulations, research and innovation; and industrialisation. Experts panellists came from leading organisations in South Africa, Jamaica, Switzerland, Chile, Zimbabwe, Canada, the United States and Lesotho. The way forward agreed was that SADC countries, led by South Africa, should host a multi-country symposium of industrialisation of medical cannabis in the Southern African Development Community (SADC) region. The Minister of Health is in the process of establishing a Ministerial Advisory Committee on Medical Cannabis to include experts and advisors in health research, legislation, IKS, innovation, entrepreneurship, and commercialisation'.

## **2. Knowledge utilisation for economic development**

An Indigenous Knowledge-Based Technology Innovation Unit was established at the Technology Innovation Agency. Together with the BioPANZA Initiative co-chaired by the DSI, DEEF and DTIC, R50 million for technology innovation and commercialisation of IK-Based products was leveraged at the Industrial Development Corporation'.

The DSI's Health Innovation through the Strategic Health Innovation Partnerships supported the development of the Umbiflow device, and provided an update on the funds leveraged from international partners for the validation and potential commercialisation of Umbiflow. The latest development regarding this project is that the project is being piloted in nine provinces across South Africa, and additional funding has been obtained from the World Health Organization for an expanded study of the application in Ghana, India, Kenya and Rwanda. Negotiations for a license agreement for commercialisation are under way in South Africa and elsewhere.

The third World Intellectual Property Organisation (WIPO) - National Intellectual Property Management Office (NIPMO) Intellectual Property and Innovation Policy workshop took place from 8 to 17 July in East London through a new partnership with the East London Industrial Development Zone. Due to the interest expressed in the

previous two workshops, WIPO indicated that NIPMO may extend the time of the course to almost two weeks to allow for more practical aspects to be explored with the participants. In this regard, 15 international and regional countries participated including; Bangladesh, Belarus, Mexico, Brazil, Cuba, Ethiopia, Ghana, Malawi, Namibia, Zambia, Uganda, Zimbabwe and South Africa.

The Southern African Research and Innovation Management Association's (SARIMA) annual conference brings together research and innovation management (also known as technology transfer) practitioners from across the SADC region. The September 2019 conference presented an ideal opportunity for NIPMO to consult with its stakeholders on the amendment of the Intellectual Property Rights from Publicly Financed Research and Development Act No. 51 of 2008 (IPR Act). The purpose of the consultation was to solicit inputs from the technology transfer community on certain key concepts of the IPR Act. To facilitate a fruitful engagement, NIPMO prepared and presented three position papers on key concepts such as the definitions of recipient and publicly financed, IP ownership and benefit sharing. NIPMO received valuable inputs from the technology transfer community and more engagements with various stakeholders are planned.

The DSI provided fourteen regulatory recommendations towards the Executive Council (GMO Act) GMO permit applications, 100% of the applications were considered.

**TABLE 2: PROGRAMME 2 – TECHNOLOGY INNOVATION**

Strategic statement: To facilitate and resource investments in space science, energy, bio-innovation, nanotechnology, robotics, photonics, IKS, IP management, technology transfer and technology commercialisation						
Annual target: 19 instruments funded in support of knowledge utilisation by 31 March 2020						
Performance indicator: Number of instruments funded in support of knowledge utilisation						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	8 instruments funded in support of knowledge utilisation	7 instruments funded in support of knowledge utilisation	Not Achieved	The inception report was approved and payment advice prepared, however the payment could not be effected as TIA had not spent 90% of the funds yet.	None
Annual target: 120 knowledge outputs generated by 31 March 2020						
Performance indicator: Number of knowledge outputs generated						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
Annual target: 3 strategic policy directives in designated areas in support of economic sectors by 31 March 2020						
Performance indicator: Number of strategic policy directives in designated areas in support of economic sectors						



1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
<b>Annual target: 100% of regulatory recommendations made to the GMO Executive Council through DAFF to support decision making by 31 March 2020</b>						
<b>Performance indicator: Percentage of regulatory recommendations made to the Executive Council through DAFF to support decision-making</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
100% of regulatory recommendations made from applications received to support decision making	11 requests were received and 11 recommendations were made. Thus 100% regulatory recommendations were made to the GMO Executive Council.	100% of regulatory recommendations made from applications received to support decision making	100% of regulatory recommendations made from applications received to support decision making (i.e.6 requests were received and 6 recommendations were made).	Achieved	None	None
<b>Annual target: 2 decision-support interventions maintained by 31 March 2020</b>						
<b>Performance indicator: Number of decision-support interventions developed or maintained</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
<b>Strategic statement: To oversee, monitor and regulate key policy initiatives, including institutions/agencies and support interventions in the key strategic areas of space science, energy, bioinnovation, nanotechnology, robotics, photonics</b>						
<b>Annual target: 210 new disclosures reported by publicly funded institutions by 31 March 2020</b>						



Performance indicator: Number of new disclosures reported by publicly funded institutions						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
100 new disclosures reported by publicly funded institutions	150 new disclosures were received from publicly funded institutions by 30 September 2019	No target	No target due	No target due	None	None
<b>Strategic statement:</b> To coordinate and support high-end and skills development in the strategic and emerging S&T areas of space science, energy, bioinnovation, nanotechnology, robotics, photonics, synthetic biology, structural biology, systems biology and functional genomics (collectively the South African Biodesign Initiative), IP management, technology transfer and technology commercialisation <b>Annual target:</b> 185 postgraduate students (master's and doctoral) funded in designated areas by 31 March 2020						
Performance indicator: Number of postgraduate students (master's and doctoral) funded in designated areas						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
<b>Annual target:</b> 230 trainees attending training initiatives in designated areas by 31 March 2020 <b>Performance indicator:</b> Number of trainees attending training initiatives in designated areas						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
<b>Strategic statement:</b> To support, promote, and advocate for the development and translation of scientific R&D outputs into commercial products, processes and services that will contribute towards economic growth and a better quality of life <b>Annual target:</b> 10 knowledge application products developed in designated areas by 31 March 2020						

Performance indicator: Number of knowledge application products funded in designated areas						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
Annual target: 8 commercial outputs in designated areas by 31 March 2020						
Performance indicator: Number of commercial outputs in designated areas						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None

### **PROGRAMME 3: INTERNATIONAL COOPERATION AND RESOURCES**

The Purpose of the programme is 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. International Cooperation and Resources (ICR) also support South African foreign policy through science diplomacy. The Programme has three chief directorates.

**International Resources:** Works to increase the flow of international funding into South African STI initiatives, as well as African regional and continental programmes, through foreign investment promotion efforts, and fostering strategic partnerships with partners such as the European Union, as well as foundations and philanthropic organisations and the multinational private sector.

**Multilateral Cooperation and Africa:** Advances and facilitates South Africa's participation in bilateral STI cooperation initiatives with other African partners, in African multilateral programmes, especially SADC and AU programmes, and in broader multilateral STI partnerships, with a strategic focus on South- South cooperation.

**Overseas Bilateral Cooperation:** Promotes and facilitates South Africa's bilateral STI cooperation with partners in Europe, the Americas, Asia and Australasia, especially for STI HCD, for collaborative research and innovation, and to secure partners' support for joint cooperation with other African partners.

#### **Highlights of the Quarter**

The Director-General (DG) of the DSI hosted the DG Research and Innovation from the European Commission (EC): Jean-Eric Paquet to showcase the SA STI landscape and visit key STI infrastructures and institutions, from 6 to 8 July 2019. The critical aim of the invitation was to promote international cooperation with the EC and position SA as for funding from the EC under the new EU Framework Programme, Horizon Europe.

At the margins of the Tokyo International Conference on African Development (TICAD7), the Minister participated in a seminar hosted by the Science and Technology in Society (STS) of Japan to share views on strengthening cooperation in science, technology and Innovation. The 10<sup>th</sup> year of cooperation with Hitachi was also celebrated with the send-off event of six young South African engineers on 20 September 2019. This initiative provides these engineers the opportunity to participate in a two-month training programme in Japan, currently focusing on water, considering the water challenges that the country faces as well as addressing South Africa's human capital development objectives.

In building the strategic relationship with China the following Road and Belt Initiatives were undertaken with the aim of accessing international knowledge and expanding networks for collaboration:

- Joint Laboratories for Green Energy between the University of South Africa and Hebei University of Science and Technology of China and a laboratory focusing on the development of technical expertise and exchanges in water treatment technologies, and clean energy, development of bio-fuels, and biogas industries through technology transfer between the University of Johannesburg and Nanjing University were launched during this period;
- The Council for Scientific and Industrial Research (CSIR) signed a Memorandum of Understanding with Zhejiang Province, which will promote research collaboration and commercialisation between the CSIR and Zhejiang province; and
- A delegation from the Centre of Science and Technology Exchange Cooperation (CSTEC) visited South Africa to promote the new exchange programme called The Young Scientist Exchange Programme (YSEP) to South African Universities.

South Africa participated in the fourth Brazil, Russia, India and China (BRICS) events hosted in Brazil, where the BRICS STI framework progress was reviewed. The new projects for support were agreed during the funding meeting; and the task team meeting discussed improved governance of STI activities. These meetings preceded

the BRICS Senior Officials meeting and BRICS Ministerial meeting which endorsed the decisions taken at the BRICS Senior Officials.

The DSI participated in the SA-USA Annual Binational Forum to review and strengthen the partnership. Evidence was shared of many projects in many areas of science and it was agreed that an improved coordination is critical in a joint effort and DSI signed a Letter of Intent with Ecuador which will serve as an initial step for future collaboration in the field of science and innovation. The first Joint Committee Meeting was hosted in Mauritius from 31 July to 01 August 2019 with the aim of finalising a Plan of Action for the next two years (2019/2020 and 2020/2021), in support of institutional collaboration.

The hosting of International Centre for Genetic Engineering and Biotechnology (ICGEB) training workshops on Biosafety and Biosimilars took place in August 2019 in Durban as pre-events to the Bio Africa Convention. The Biosafety and Biosimilars training workshops aimed at providing access to ICGEB courses and workshops and increase ICGEB Cape Town component's footprint to larger groups and to make sure they benefit South Africans and Africans from ICGEB member states. The event attracted participants from many African countries such as Namibia, Zimbabwe, Zambia, Mozambique, Mauritius, Malawi, and Egypt.

The DSI continued to support the implementation of regional programmes which were endorsed by the Joint Meeting of SADC Ministers responsible for Education and Training and Science, Technology and Innovation (ET-STI) held in June 2019, in Namibia. These include the implementation of the SADC Cyber-Infrastructure (CI) Framework and the DSI through the Centre for High Performance Computing (CHPC) has partnered with the South African Weather Service (SAWS) with financial support from African Academy of Sciences, the United Kingdom's Department for International Development (DFID) and the Weather and Climate information Services for Africa (WISER) programme and the Africa Policy Centre (ACPC) of the United Nations Economic Commission for Africa (UNECA) to implement the SADC weather and climate project.

As part of implementing the weather and climate project, SAWS in partnership with the DSI, the Centre for High Performance Computing (CHPC) and the National Aeronautics and Space Administration (NASA), Goddard Institute for Space Studies Space Studies (GISS) convened an Atmospheric Processes workshop in August 2019. The workshop was attended by High Performance Computing (HPC) as well as weather and climate researchers from South Africa, Botswana, Zambia, Mozambique, Tanzania and Namibia. The main purpose of the workshop was to work on numerical weather prediction models as part of a project aimed to implement the research and development aspect of the SADC CI Framework for enhancing regional collaboration in research, science, technology and innovation.

The DSI collaborated with the SADC Secretariat and convened the Regional Experts Meeting on Space Sciences and Cyber-Infrastructure in August 2019, in South Africa. The meeting was attended by experts and policy makers from four SADC Member States; i.e. Botswana, Eswatini, South Africa and Zambia supported by the SADC Secretariat. The delegation also included strategic partners from the South African National Space Agency (SANSA), NEPAD Southern African Network of Water Centres of Excellence (SANWATCE), SENTECH, Famine Early Warning Systems Network (FEWS Net), Council for Scientific and Industrial Research (CSIR), National Integrated Cyberinfrastructure System (NICIS), Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) and the private sector (Flava Lite Innovations and F.L.I. Global). Dr Sibongiseni Tunzelana Thotsejane from Flava Lite Innovations and F.L.I. Global did a presentation on the Fourth Industrial Revolution (4IR) at the experts meeting.



**TABLE 3: PROGRAMME 3 – INTERNATIONAL COOPERATION AND RESOURCES**

<b>Strategic statement: To secure international funds to complement South Africa's national investments in STI, including resources for DSI initiatives requiring external investments</b>						
<b>Annual target: R480m in international funds directly invested in research, innovation and STI HCD programmes as well as research infrastructure investments in South Africa as part of cooperation initiatives implemented by the DSI by 31 March 2020</b>						
<b>Performance indicator: Amount (expressed in Rand millions) of international funds directly invested in research, innovation and STI HCD programmes as well as research infrastructure investments in South Africa as part of cooperation initiatives implemented by the DSI</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due		
<b>Annual target: R300m 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 DSI by 31 March 2020</b>						
<b>Performance indicator: Amount (expressed in rand million) of funds 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 DSI</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due		
<b>Strategic statement: To access international knowledge, capacities and resources, to enhance South Africa's national STI capabilities, and to contribute to the attainment of the DSI's targets for human capital development, especially for international PhD training</b>						
<b>Annual target: 680 South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DSI by 31 March 2020</b>						
<b>Performance indicator: Number of South African students accepted into international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DSI</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken

No target	No target due	No target	No target due	No target due
<b>Annual target: 600 international partner organisations (i.e. legal entities) collaborating with South African partners within the formalised framework of collaborative research, innovation or STI HCD projects counted as part of cooperation initiatives facilitated by the DSI by 31 March 2020</b>				
<b>Performance indicator: Number of international partner organisations (i.e. legal entities) collaborating with South African partners within the formalised framework of collaborative research, innovation or STI HCD projects counted as part of cooperation initiatives facilitated by the DSI</b>				
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status
10 international partner organisations (i.e. legal entities) collaborating with South African partners within the formalised framework of collaborative research, innovation or STI HCD projects counted as part of cooperation initiatives facilitated by the DSI	104 international partner organisations (i.e. legal entities) collaborating with South African partners within the formalised framework of collaborative research, innovation or STI human capital development projects as part of cooperation initiatives	50 international partner organisations (i.e. legal entities) collaborating with South African partners within the formalised framework of collaborative research, innovation or STI HCD projects counted as part of cooperation initiatives facilitated by the DSI	58 international partner organisations (i.e. legal entities) collaborating with South African partners within the formalised framework of collaborative research, innovation or STI HCD projects counted as part of cooperation initiatives facilitated by the DSI	<b>Achieved</b>
				Reason for variance
				More information from international partners became available earlier than expected.
				Actions taken
				None
<b>Annual target: 30 dedicated international technical exchanges to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DSI Strategic Plan, undertaken with the support of international partners and facilitated by the DSI by 31 March 2020</b>				
<b>Performance indicator: Number of dedicated international technical exchanges such as workshops, seminars or training programmes to reinforce South Africa's capacities in key STI domains specifically referenced in the DSI Strategic Plan, undertaken with the support of international partners and facilitated by the DSI</b>				



1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
5 dedicated international technical exchanges to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DSI Strategic Plan, undertaken with the support of international partners and facilitated by the DSI	5 dedicated international technical exchanges such as workshops, seminars or training programmes to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DSI Strategic Plan, undertaken with the support of international partners	5 dedicated international technical exchanges to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DSI Strategic Plan, undertaken with the support of international partners and facilitated by the DSI	5 dedicated international technical exchanges to build or reinforce South Africa's capacities in key STI domains specifically referenced in the DSI Strategic Plan, undertaken with the support of international partners and facilitated by the DSI	Achieved	None	None
<b>Strategic statement: To strengthen cooperation in STI in Africa, to build capacities and support initiatives of the SADC and AU, for the advancement of both South Africa and Africa's growth and development agenda</b>						
<b>Annual target: 120 research, innovation and STI HCD cooperation projects co-funded or supported in kind by the DSI and at least one other African partner by 31 March 2020</b>						
<b>Performance indicator: Number of researchers, innovation and STI HCD cooperation projects, co-funded or supported in kind by the DSI and at least one other African partner</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due		

<b>Annual target: R90m in international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DSI facilitation by 31 March 2020</b>						
<b>Performance indicator: Amount (expressed in rand millions) of international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DSI facilitation</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
<b>Annual target: 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 the DSI by 31 March 2020</b>						
<b>Performance indicator: Number of AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by the DSI</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due		
<b>Strategic statement: To maximise South Africa's strategic interests in international cooperation in STI, in support of South Africa's foreign policy objectives, and international trade and investment partnerships, creating a better South Africa, and contributing to a better and safer Africa in a better world</b>						
<b>Annual target: 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 DSI intervention by 31 March 2020</b>						
<b>Performance indicator: Number of 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 DSI intervention</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken

No target	No target due	2 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 DSI intervention	3 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 DSI intervention	<b>Achieved</b>	Information from international partners became available earlier than expected
<b>Annual target: 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 DSI intervention by 31 March 2020</b>					
<b>Performance indicator: Number of 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 DSI intervention</b>					
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>
No target	No target due	2 leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of	1 leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of	<b>Not Achieved</b>	Confirmation of additional appointment is waited
					Programme 3 is dependent on external and international partners for verifiable data the targets were set around the date's information was received in the previous financial years. This circumstance has been added on the TID data limitations

		Action following specific DSI intervention	Action following specific DSI intervention		
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## PROGRAMME 4: RESEARCH DEVELOPMENT AND SUPPORT

The Purpose of the Programme is to 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. The Programme has four chief directorates.

- **The Human Capital and Science Promotion** focuses on developing and renewing science, engineering and technology human capital to promote knowledge generation, protection and exploitation, and to develop science platforms that exploit South Africa's geographical advantages. The Chief **Directorate** also promotes science, technology, engineering, mathematics and innovation literacy and awareness. Funding is provided to the NRF for programmes to develop research and human capital.
- **Basic Sciences and Infrastructure** facilitates the strategic implementation of research and innovation equipment and infrastructure to promote knowledge production in areas of national priority and to sustain R&D-led innovation. The Chief **Directorate** also promotes development and strengthening of basic or foundational sciences, such as physics, chemistry, biological and life sciences, geographic and geological sciences, and the human and social sciences.
- **Science Missions** promotes the development of research, the production of scientific knowledge, and human capital development within science areas in which South Africa enjoys a geographic advantage. These areas include the dynamics of climate change and its impact on earth systems, Antarctic and marine research, palaeosciences, and indigenous knowledge systems.
- **Astronomy** supports the development of astronomical sciences around a multi-wavelength research strategy and provides strategic guidance and support to relevant astronomy institutions in the implementation of DSI astronomy programmes. Of particular relevance are the MeerKAT, the African Very Long Baseline Interferometry Network (AVN) project, and the Square Kilometre Array (SKA) projects.

## Highlights of the Quarter

The following specific milestones are worth highlighting against the DSI strategic outcome-oriented goals:

### **1.1 *Building a responsive, coordinated, and efficient NSI***

On 14 August 2019, the President of the Republic of South Africa, Mr Ramaphosa signed the Promotion, Protection, Development and Management of Indigenous Knowledge Bill into an Act - the Promotion, Protection, Development and Management of Indigenous Knowledge Act, Number 206 of 2019. After 25 years of democracy in South Africa, the people of South Africa can celebrate the fact that the indigenous knowledge system has been accorded the same worth as any other knowledge systems in our country.

The IK Act is a significant milestone for South Africa in that it provides for the protection, promotion, development and management of IK. It provides for a legal framework that recognizes communities as owners of their IK IP, a first, which will ensure that communities benefit from the use of their IK. From a Knowledge Management perspective, the IK Act provides a value chain input platform for R&D through the registration of IK in the Registration System that is established by the IK Act. Registered IK can assist in technology transfer between different NSI actors and the generation of innovative products, services and technologies for socioeconomic development. The Registration System established by the IKS Act will serve to unlock access to registered IK, its use and protection following all appropriate legal prescripts.

The IK Act makes provision for the establishment of a National Indigenous Knowledge System Office, the protection of indigenous knowledge through intellectual property system, the registration of indigenous knowledge, the recognition of prior learning for indigenous knowledge fields, the research and innovation leading to commercialisation. These processes will transform indigenous knowledge into an instrument of wealth generation, contribute to social cohesion and bring the indigenous communities into a modern knowledge economy on the basis of their knowledge.

## **1.2 Human Capital Development**

The National Science Week 2019 took place from 29 July to 3 August 2019, following a launch event led by the Minister in Kimberley on 27 July 2019. More than 80 exhibitors participated in the launch event, which was attended by almost 3 000 participants, the majority of whom were learners.

On 15 August 2019, the DSI hosted the SAWiSA gala dinner in Boardwalk Hotel, Port Elizabeth, Eastern Cape, under the theme, Making the Fourth Industrial Revolution Work for Women. SAWiSA is one of the Minister's flagship events aimed at recognising the achievements of prominent women scientists and provide motivation for increased participation of women scientists in research. The awards are hosted in August every year as the Department's contribution to the national Women's Month celebrations. Both the NSW and SAWiSA enjoyed broad media coverage.

## **1.3 The SKA**

The MeerKAT telescope continues to perform great science and the following discoveries have been reported:

- An international team of astronomers announced on 22 July 2019 that the resolution of a long-standing mystery related to the formation and evolution of galaxies, by discovering vast amounts of hydrogen gas in a galaxy 60 million light years from Earth. Their work published in the journal *Astronomy & Astrophysics*, is based on observations carried out last year with the South African Radio Astronomy Observatory's new MeerKAT telescope in the Northern Cape.
- An international team of astronomers announced on 11 September 2019 that by using the MeerKAT telescope, they discovered enormous balloon-like structures that tower hundreds of light-years above and below the centre of our galaxy. These were caused by a phenomenally energetic burst that erupted near the Milky Way's supermassive black hole a few million years ago, the MeerKAT radio bubbles are shedding light on long-standing galactic mysteries.



**TABLE 4: PROGRAMME 4 – RESEARCH DEVELOPMENT AND SUPPORT**

Strategic Statement: To contribute to the development of a representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities						
Annual target: Not less than 3 100 PhD students awarded an annual bursary as reflected in the reports from the NRF and relevant entities by 31 March 2020						
Performance indicator: Total number of PhD students awarded bursaries annually as reflected in the reports from the NRF and relevant entities						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions are taken
Not less than 1 500 PhD students awarded an annual bursary as reflected in the reports from NRF and relevant entities	2 116 PhD students awarded an annual bursary as reflected in the reports from NRF and relevant entities	Not less than 2 300 PhD students awarded an annual bursary as reflected in the reports from NRF and relevant entities	2 750 PhD students awarded an annual bursary as reflected in the reports from NRF and relevant entities	<b>Achieved</b>	Quarterly target over-achieved by 452 (19,6%) because the bursaries were over allocated due to the large number of quality applicants. The quarterly performance cannot be predicted or managed within closer margins because it depends on the pool of applicants, which cannot be predicted perfectly	None



Annual target: 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 2020						
Performance indicator: Total number pipeline postgraduate students awarded bursaries annually as reflected in the reports from the NRF and relevant entities						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
Not less than 5 400 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary	6 141 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary	Not less than 8 100 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary	7 756 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary	Not Achieved	The target was under-achieved by 340 (4.1%) because of the quarterly targets whose performance is dependent on the pool of applicants and the rate of processing of the calls. Moreover, the quarterly performance cannot be predicted or managed within closer margins because it depends on the pool of applicants, which cannot be predicted perfectly.	The NRF is being engaged to expedite the processing of applications to meet future targets.
Annual target: 650 graduates and students placed in DSI-funded work preparation programmes in SETI institutions by 31 March 2020						
Performance indicator: Total number of graduates and students placed in DSI-funded work preparation programmes in SETI institutions						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
500 graduates and students placed in DSI-funded work preparation programmes in SETI	672 graduates and students placed in DSI-funded work preparation programmes in SETI Institutions	550 graduates and students placed in DSI-funded work preparation programmes in SETI Institutions	848 graduates and students placed in DSI-funded work preparation programmes in SETI Institutions	Achieved	The target was exceeded due to retention of some of the 2018/19 interns, in line with the extension of the	None

Institutions						programme from 12 to 24 months.	
<b>Strategic statement: To ensure availability of and access to internationally comparable research and innovation infrastructure in order to generate new knowledge and train new researchers</b>							
<b>Annual target: 20 annual research infrastructure grants awarded as per award letters by 31 March 2020</b>							
<b>Performance indicator: Number of research infrastructure grants awarded annually per award letters</b>							
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken	
No target	No target due	Call for proposals on awarding of research infrastructure grants issued by 30 September 2019	Call for proposals on awarding of research infrastructure grants was issued by 30 September 2019	Achieved	None	None	
<b>Annual target: 3 500 Gbps total available broadband capacity provided by SANReN by 31 March 2020</b>							
<b>Performance indicator: Total available broadband capacity provided by SANReN per annum</b>							
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken	
No target	No target due	New links and upgrade plan finalised by 30 September 2019	New links and upgrade plan finalised by 30 September 2019	Achieved	None	None	
<b>Strategic statement: To support and promote research that develops basic sciences through the production of new knowledge and relevant training opportunities</b>							
<b>Annual target: Not less than 4 500 researchers awarded an annual research grant through NRF-managed programmes as reflected by the NRF project reports by 31 March 2020</b>							
<b>Performance indicator: Total number of researchers awarded research grants annually through NRF-managed programmes as reflected in the NRF project reports</b>							
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken	

Not less than 2 000 researchers awarded an annual research grant through NRF-managed programmes	1 580 researchers awarded an annual research grant through NRF-managed programmes	Not less than 3 500 researchers awarded an annual research grant through NRF-managed programmes	2 557 researchers awarded an annual research grant through NRF-managed programmes	<b>Not Achieved</b>	The target is under-achieved by 943 (27%). This is due to the streamlining of applications for research grants to create enhanced efficiency in receiving and processing applications. This meant introducing two review periods, one in the beginning of the year and another at the end of the year. Therefore, a significant number of awards will be made in the 3rd and 4th quarters.	The NRF is being engaged to expedite the processing of applications to meet future targets
<b>Annual target: 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 2020</b>						
<b>Performance indicator: Number of 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</b>						
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>	<b>Reason for variance</b>	<b>Actions taken</b>
No target	To be reported in quarter 4	No target	No target due	No target due	None	None
<b>Strategic statement: To strategically develop priority science areas in which South Africa enjoys a competitive advantage, by promoting internationally competitive research and training activities and outputs</b>						
<b>Annual target: 8 Large Survey project (LSP) Science Mode installed on MeerKAT by 31 March 2020</b>						
<b>Performance indicator: Number of Ultra High Frequency (UHF) science modes receivers installed on MeerKAT</b>						



1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	SKA SA Project approved progress report on installation of LSP science modes on MeerKAT correlator provided by 30 September 2019	SKA SA Project approved progress report on installation of LSP science modes on MeerKAT correlator provided by 30 September 2019	Achieved	None	None
<b>Strategic statement: To promote public engagement on science, technology and innovation</b>						
<b>Annual target: Not less than 2.1 million participants (learners and members of the public) in science awareness and engagement programmes annually as reflected in the project reports of the NRF and other service providers by 31 March 2020</b>						
<b>Performance indicator: Number of participants in science awareness and engagement programmes annually as reflected in project reports of the NRF and other service providers</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
Grant funding awarded to organisations implementing the initiatives by 30 June 2019	10 grants awarded to organisations implementing the science awareness and engagement initiatives by 30 June 2019	National Science Week held by 30 September 2019	National Science Week was held from 29 July to 3 August 2019	Achieved	None	None

## **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. This programme has the following four Chief Directorates:

- **Technology Localisation Beneficiation and Advanced Manufacturing** advance strategic medium and long-term sustainable economic growth and sector development priorities as well as government service delivery.
- **Sector Innovation and Green Economy** provides policy, strategy and direction-setting support for the R&D-led growth of strategic sectors of the economy and to enhance science and technology capacity to support a transition to a green economy.
- **Innovation for Inclusive Development** supports the experimentation of S&T-based innovations for tackling poverty including the creation of sustainable job and wealth opportunities, building sustainable human settlements, and enhancing the delivery of basic services.
- **Science and Technology Investment** leads and supports the development of indicators and instruments for measuring and monitoring investments in S&T and the performance of the NSI, and ways of strengthening the NSI and innovation policy.

## **Highlights of the Quarter**

### ***1. Human Capital Development***

The first annual Steering Committee meetings were held with the Waste SARChI Chairs. The purpose of these meetings was to obtain insight into technical progress of the Chairs against the objectives of the Waste Roadmap.

### ***2. Using Knowledge for Economic Development***

The Waste Technology and Innovation Centre workshop was held at the Waste Khoro of the Department of Environment, Forestry and Fisheries. This workshop was to gauge the interest of the municipalities for the establishment of a national Waste Technology and Innovation Centre. The response was positive with municipalities in agreement that such a centre would benefit the country. Further engagements are still to be had, before a model can be presented to the DSI.

Prof Godfrey was invited to present to the PlasticsSA Board on current local and international trends at their Board meeting of 5 September 2019. This was to inform their new planning processes. Thus, illustrating the influence of the Waste RDI Roadmap on private sector.

### ***3. Knowledge Utilization and Inclusive Development***

The Waste Roadmap partnered with the Centre for Environment, Fisheries and Aquaculture Science (Cefas) from the UK to co-host a workshop in October to review the draft academic papers on Marine Plastic Litter – Science review. The institutions that have submitted the papers include: North West University, University of Cape Town, University of the Western Cape, University of Kwa-Zulu Natal, CSIR and Nelson Mandela University. ASSAf has also agreed to publish the five papers in a special themed edition of the South African Journal of Science in May 2020.

Dr Melanie Samson from the University of the Witwatersrand was recognised by the plastics industry for the work done on the development of the wastepicker guidelines, work that emanated from a research grant under the Waste Roadmap. She received the 'Excellence in Academia' award from the PET Recycling Company NPC (PETCO) at their AGM in June 2019.

Prof Godfrey was invited to provide input to the development of the Worldwide Fund for Nature (WWF) African Regional Strategy on Plastic Pollution – a 5year strategic plan for WWF (2020-2025) to address plastic pollution in Africa. Illustrates the influence of the Waste RDI Roadmap on the NGO sector in the region.

**TABLE 5: PROGRAMME 5 – SOCIO-ECONOMIC INNOVATION PARTNERSHIPS**

Strategic statement: Through knowledge, evidence and learning, to inform and influence how S&T can be used to achieve inclusive development						
Annual target : 6 knowledge products on innovation for inclusive development published by 31 March 2020						
Performance indicator: Number of knowledge products on innovation for inclusive development published						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
1 knowledge product on innovation for inclusive development published between 1 April 2019 and 30 June 2019	1 knowledge product on innovation for inclusive development was published between 1 April 2019 and 30 June 2019	2 knowledge products on innovation for inclusive development published between 1 April 2019 and 30 September 2019	2 knowledge products on innovation for inclusive development published between 1 April 2019 and 30 September 2019	Achieved	None	None
Annual target : 10 decision-support systems maintained and improved by 31 March 2020						
Performance indicator: Number of decision-support interventions introduced and maintained						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
Annual work plan approved for at least 2 decision-support systems between 1 April 2019 and 30 June 2019	Annual work plan was approved for at least 2 decision support systems between 1 April and 30 June 2019	Annual work plan approved for at least 8 decision support systems between 1 April 2019 and 30 September 2019	Annual work plan approved 9 decision support systems between 1 April 2019 and 30 September 2019	Achieved	South African Risk and Vulnerability Atlas (SARVA) was pulled forward to adhere to the department's transfer rules	None
Annual target: 9 learning interventions (seminars, lectures, learning forums and policy dialog) generated 31 March 2020						

Performance indicator: Number of learning interventions (seminars, briefs, policy papers) generated						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
1 learning intervention generated between 1 April and 30 June 2019	Nothing reported	At least 2 learning interventions (seminars) between 1 April and 30 September 2019	2 learning interventions (seminars) between 1 April and 30 September 2019	Achieved	None	None
<b>Strategic statement: To identify, grow and sustain niche high-potential STI capabilities for sustainable development and the greening of society and the economy</b>						
<b>Annual target: 90 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 2020</b>						
Performance indicator: Number of honours, master's and doctoral students fully funded or co-funded in designated niche areas						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
50 honours, masters and doctoral students fully funded or co-funded between 1 April 2019 and 30 June 2019	49 honours, masters and doctoral students were fully funded or co-funded between 1 April 2019 and 30 June 2019	No target	No target due	Not target due	None	None
<b>Annual target: 4 knowledge and innovation products (for example, patents, prototypes, demonstrators, methodologies, and technology transfer packages) added to the sustainable development IP portfolio between 1 July 2019 and 31 March 2020</b>						
Performance indicator: Number of knowledge and innovation products (for example, patents, prototypes, technology demonstrators, methodologies, and technology transfer packages) added to the sustainable development IP portfolio						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	At least 1 knowledge or innovation	10 knowledge or innovation	Achieved	The GBS funds have allowed for a greater number of	None



		products added to the industrial development IP portfolio between 1 April 2019 and 30 September 2019	products added to the industrial development IP portfolio between 1 April 2019 and 30 September 2019	products added to the industrial development IP portfolio between 1 April 2019 and 30 September 2019	demonstrations to be funded	
<b>Strategic statement: To identify, grow and sustain niche high-potential STI capabilities that-</b> <ul style="list-style-type: none"> <li>improve the competitiveness of existing industries with growth potential in aerospace, advanced manufacturing, chemicals, advanced metals, mining, ICTs, industry innovation programme (include sector innovation funds); and</li> <li>facilitate the development of R&amp;D-led new targeted industries</li> </ul>						
<b>Annual target: 252 master's and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs, Industry Innovation Programme and the sector innovation fund) by 31 March 2020</b>						
<b>Performance indicator: Number of high-level research graduates (master's and doctoral students) fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs, Industry Innovation Programme and the sector innovation fund)</b>						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
200 masters and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace; chemicals, mining, advanced metals, ICTs, Industry Innovation Programme and the sector innovation fund)	116 masters and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs, Industry Innovation Programme and the sector innovation fund)	No target	No target due	No target due	None	None

Annual target: 120 interns fully funded or co-funded in R&D related to design, manufacturing and product development by 31 March 2019						
Performance indicator: Number of interns fully funded or co-funded in R&D related to design, manufacturing and product development						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
100 interns fully funded or co-funded in R&D related to design, manufacturing and product development	190 interns fully funded or co-funded in R&D related to design, manufacturing and product development	No target	No target due	No target due	None	None
Annual target: At least 50 industrially relevant knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the industrial development IP portfolio by 31 March 2020						
Performance indicator: Number of industrially relevant knowledge and innovation products added to the Intellectual Property (IP) portfolio through fully funded or co-funded research initiatives						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
At least 1 industrially relevant knowledge or innovation product added to the	Nothing reported	At least 4 industrially relevant knowledge or innovation products added	6 industrially relevant knowledge or innovation products added	Achieved	Due to the uncertainty associated with IP product creation, it is very difficult to forecast the actual IP products	None

industrial development IP portfolio between 1 April 2019 and 30 June 2019		to the industrial development IP portfolio between 1 April 2019 and 30 September 2019	to the industrial development IP portfolio between 1 April 2019 and 30 September 2019	declared with 100% accuracy
<b>Annual target: 9 instruments funded in support of increased localisation, competitiveness and R&amp;D-led industry development by 31 March 2020</b>				
<b>Performance indicator: Number of instruments funded in support of increased localisation, competitiveness and R&amp;D-led industry development in aerospace, advanced manufacturing, chemicals, mining, advanced metals and ICTs</b>				
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>
Annual work plans or contract approved for 6 support instruments	Annual work plans or contract approved for 9 support instruments	No target	No target due	No target due
<b>Reason for variance</b>				
Actions taken				
<b>Strategic statement: To strengthen provincial and rural innovation and production systems through analysis and catalytic interventions</b>				
<b>Annual target: 12 innovation-support interventions funded or co-funded that strengthen provincial or rural innovation systems by 31 March 2020</b>				
<b>Performance indicator: Number of innovation-support interventions funded or co-funded that strengthen provincial or rural innovation systems</b>				
<b>1<sup>st</sup> Quarter target as per APP</b>	<b>1<sup>st</sup> Quarter actual output</b>	<b>2<sup>nd</sup> Quarter target as per APP</b>	<b>2<sup>nd</sup> Quarter actual output</b>	<b>Status</b>
Annual work plan approved for at least 4 innovation support interventions between 1 April 2019 and 30 June 2019	Annual work plan approved for at least 7 innovation support interventions between 1 April 2019 and 30 June 2019	Annual work plan approved for at least 9 innovation support interventions between 1 April 2019 and 30 September 2019	Annual work plan approved for 12 innovation support interventions between 1 April 2019 and 30 September 2019	Achieved
<b>Reason for variance</b>				
The call for proposal process that are used to solicit proposals for the interventions in the Regional Innovation Support Platforms (RISP), the interventions supported are dependent on the number and quality of proposals received				
<b>Actions taken</b>				
None				
<b>Strategic statement: To enhance understanding and analysis that support improvements in the functioning and performance of the NSI</b>				

Annual target: 6 statistical reports and policy briefs approved by Exco for publication and/or submitted to Cabinet between 1 July 2019 and 31 March 2020						
Performance indicator: Number statistical reports and policy briefs approved by Exco for publication and/or submission to Cabinet						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
No target	No target due	No target	No target due	No target due	None	None
Strategic statement: To introduce and manage interventions and incentive programmes that increase the level of private sector investment in scientific or technological R&D						
Annual target: Preapproval decisions provided within 90 days from date of receipt on 80% of applications for the R&D tax incentive received between 1 January 2020 And 31 December 2020						
Performance indicator: Turnaround time for providing preapproval decisions on applications for the R&D tax incentive						
1 <sup>st</sup> Quarter target as per APP	1 <sup>st</sup> Quarter actual output	2 <sup>nd</sup> Quarter target as per APP	2 <sup>nd</sup> Quarter actual output	Status	Reason for variance	Actions taken
Preapproval decisions provided within 90 days on 80% of applications received between 1 January 2019 and 31 March 2019	Preapproval decisions provided within 90 days on 21% (or 6) of the 29 applications received between 1 January 2019 and 31 March 2019	Preapproval decisions provided within 90 days on 80% of application received between 1 April 2019 and 30 June 2019	Preapproval decisions provided within 90 days was none (or 0%) of the 31 applications received between 01 April 2019 and 30 June 2019	Not Achieved	(1) The R&D Tax incentive Directorate introduced a new step in the routing of decisions submission, which has extended the time required to sign-off decisions. The new step requires DSI Legal to vet all the submissions.  (2) Cumulative effect of vacancies on staff capacity in the Directorate (vacancies increased to 4 in Quarter 2), in addition to ending of	In total, 32 applications were provided with decisions during Quarter 2. Interviews to recruit Director (R&D Tax incentive) were concluded in August 2019. Recommendation made for prioritising vacancy of DD (R&D Tax Incentive) in the DSI-wide vacancy prioritisation process.





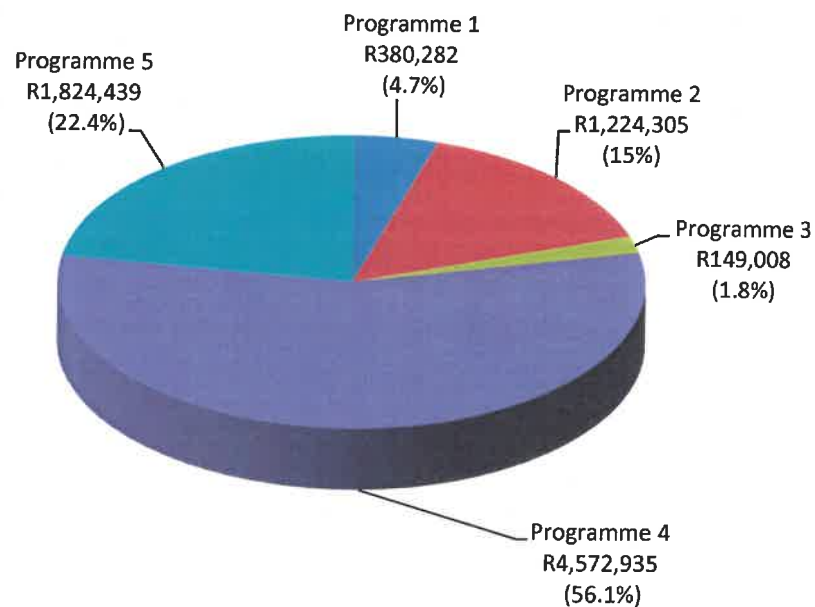
### 3. FINANCIAL PERSPECTIVE

#### 3.1 Voted funds:

##### 3.1.1 The budget for 2019/20 financial year

The budget of the DSI in the 2019/20 financial year is R8.151 billion – of which 92.2% is allocated as transfer payments and 7.8% to administrative activities of the Department. Figure 3 below analyses the distribution of allocations among the programmes.

**Figure 3: DSI budget split among the five Programmes**



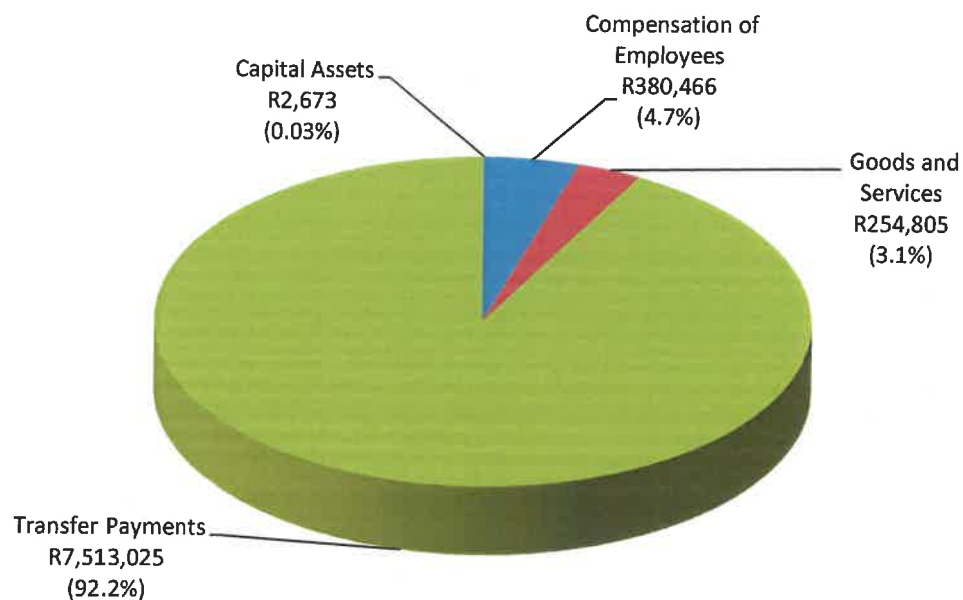
The bulk (93.5%) of the DSI budget is allocated to three core Programmes of the Department (i.e. Programmes 2, 4 and 5). Programme 3 commands 1.8% of the total budget. The division according to the major items is detailed in Table 6 below.

**Table 6: DSI MAJOR ITEM CATEGORIES**

R' thousands	Compensation of Employees	Goods and Services	Transfer Payments	Capital Assets	TOTAL
Programme 1	173 998	188 525	15 086	2 673	380 282
Programme 2	56 744	22 063	1 145 498		1 224 305
Programme 3	58 456	18 577	71 975		149 008
Programme 4	42 640	15 925	4 514 370		4 572 935
Programme 5	48 628	9 715	1 766 096		1 824 439
	<b>380 466</b>	<b>254 805</b>	<b>7 513 025</b>	<b>2 673</b>	<b>8 150 969</b>

As depicted in Table 6 above and Figure 4 below, the cost driver of the DSI is transfer payments. 92.2% of the DSI budget is paid out as transfer payments to public institutions and other DSI policy implementing partners. 37.7% of the transfer payments are paid out as parliamentary grants to six DSI-managed public institutions – namely: The Academy of Science of South African (ASSAf), the Council of Scientific and Industrial Research (CSIR), the Human Science Research Council (HSRC), the National Research Foundation (NRF), the South African Space Agency (SANSA) and the Technology Innovation Agency (TIA). The remaining 62.3% is payments for various projects which are managed through contracts.

**Figure 4: Distribution of DSI budget among the four major item categories  
(expressed in R'000)**



## Expenditure

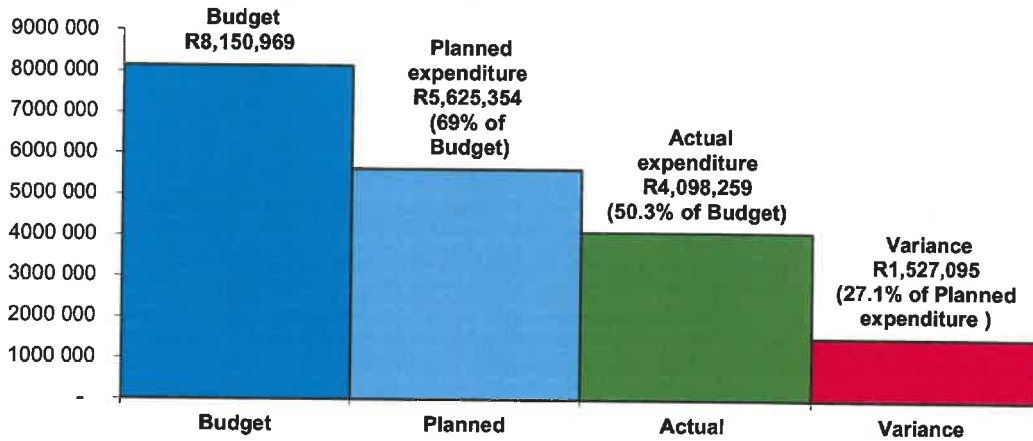
### 4. Expenditure

The DSI projected to spend R5,625 billion or 69% of its total budget by the end of the second quarter of the 2019/20 financial year. However, R4,098 billion or 50.3% was spent instead for the period under review, resulting in a variance of R1,527 million or 27.1% of the projected expenditure as shown in Figure 5 below.



**Figure 5: DSI second quarter financial performance (including parliamentary grants)**

R 'thousands



Another analysis was made on the same variables shown above, but this time the analysis excluded the parliamentary grants – allocations to ASSAf, CSIR, HSRC, NRF, TIA and SANSA. According to the aforesaid analysis the DSI spent R2,484 million or 46.7% of the total budget (excluding parliamentary grants) up to the end of the second quarter of 2019/20 financial year, against the projected expenditure of R4,011 million or 75.4% of its total budget excluding the parliamentary grants. That resulted to a positive variance of R1,527 million or 38.1% of the projected expenditure. The details are depicted in Figure 6 below.

**Figure 6: DSI second quarter financial performance (excluding parliamentary grants)**

R 'thousands

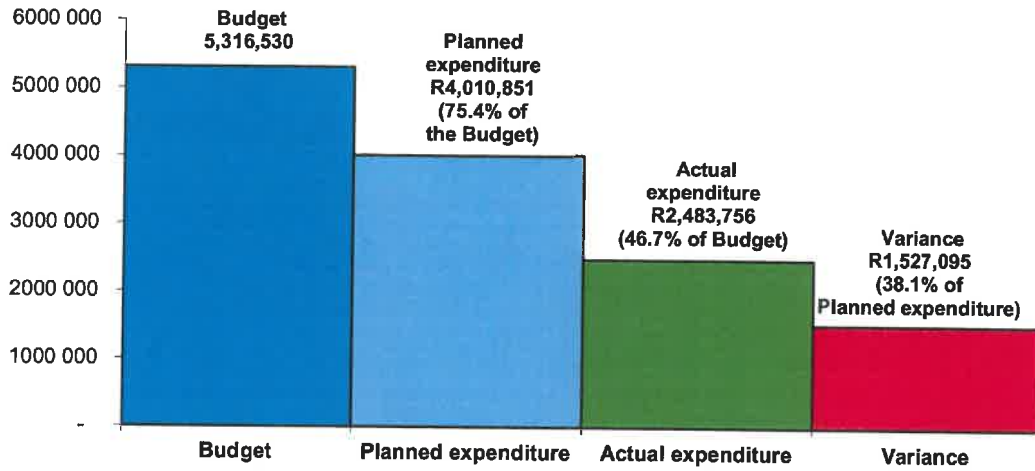


Figure 7 below illustrates the year-on-year comparison of the second quarter's financial performance for 2019/20 and 2018/19 financial years. The variance between the 2019/20 and 2018/19 financial year is 11.7 percent.

**Figure 7: Year-on-year financial performance analysis (2019/20 and 2018/19)**

R'thousands

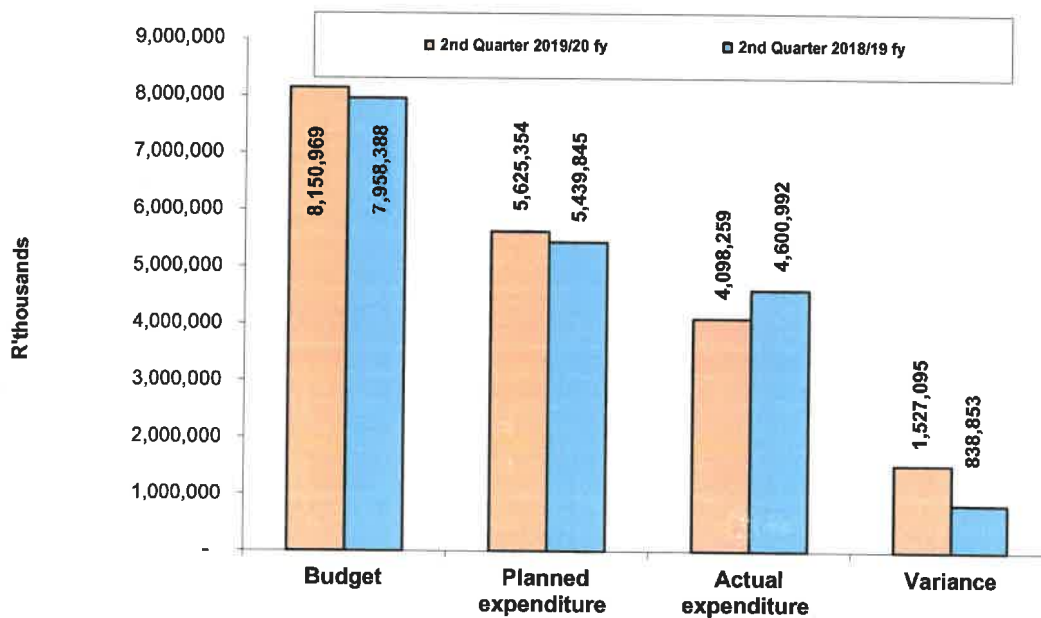


Figure 8 below gives a further breakdown of the second quarter expenditure per Programme. According to the analysis below, programmes recorded variance between the planned expenditure and actual expenditure as follows: Administration 7.4%; Technology Innovation 6.8%; International Cooperation and Resources 36.4%; Research Development and Support 30.6% and Socio-Economic Innovation Partnerships 26.9%.

**Figure 8: Financial performance per Programme (including parliamentary grants)**

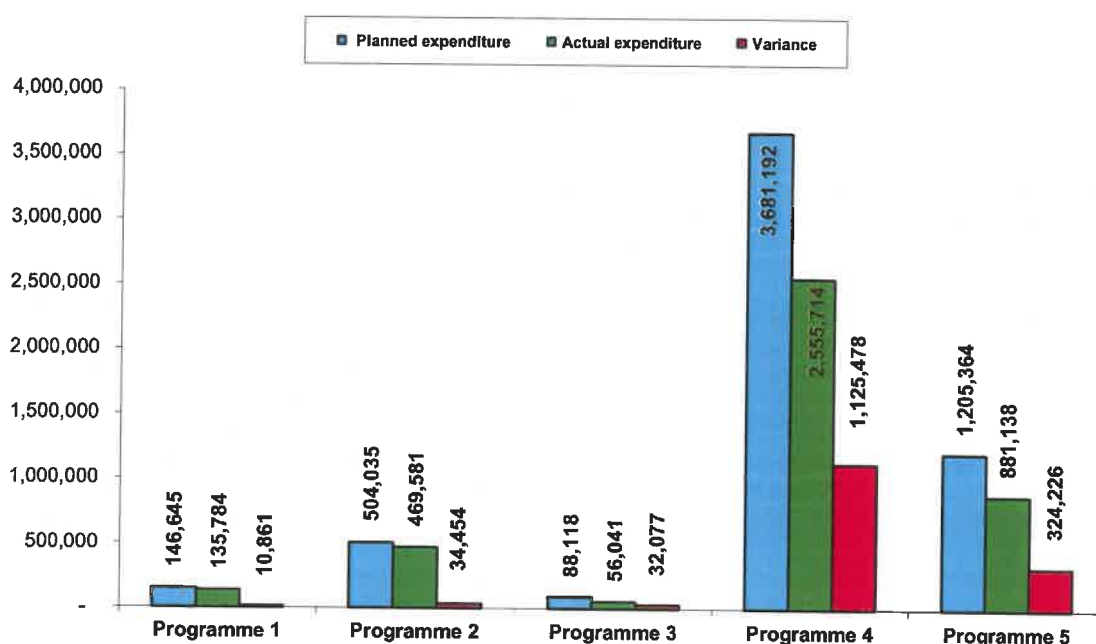
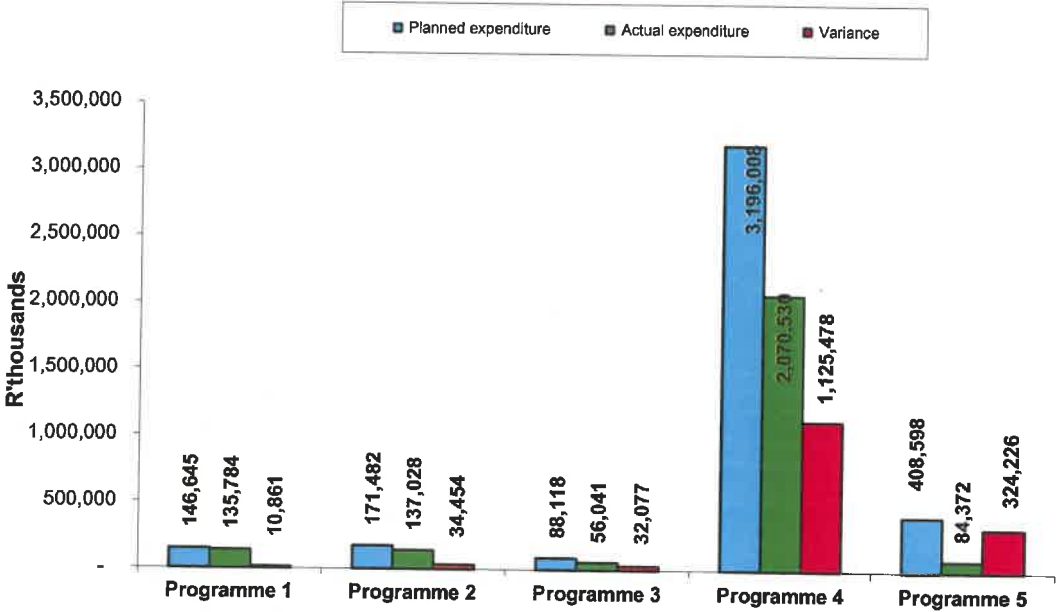


Figure 9 below gives a further breakdown of the second quarter expenditure per Programme excluding parliamentary grants. The variance from the projected expenditure ranges between -7.4% and 79.4%.

**Figure 9: Financial performance per Programme (excluding parliamentary grants)**

R' thousands



### Donor funding

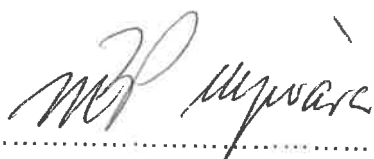
According to Table 3 below, the expenditure for the period amounts to R8,861 of the requested funding of R11, 219 million.

Table 7: Analysis of financial performance – Donor funding

Donor	Project name	Programme	Funds requested (R'000)	Actual spending as at 30 September 2019		Balance (R'000)
				Amount (R'000)	% spending	
European Union	GBS-Small Holder Essential Oils Value Chain Project.	Socio-economic Innovation Partnerships	11,219	8,819	79%	2,400
	CAAST-Net Plus	International Cooperation and Resources		43		-43
<b>Total</b>			<b>11,219</b>	<b>8,861</b>	<b>79%</b>	<b>2,357</b>

**APPROVAL**

This is to confirm that the Executive Committee (EXCO) of the Department of Science and Innovation discussed the Department's performance report for the second quarter of the 2019/20 financial year at its meeting held on the 09 of December 2019 and that Exco made inputs on the contents of the report which reflects the DSI's performance for the period covered in the report.



.....  
PHIL MJWARA

DIRECTOR-GENERAL

DATE: 12-12-2019