

**2015/16 Second Quarter Report**

**July to September 2015**

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# LIST OF ABBREVIATIONS

|  |  |
| --- | --- |
| **ACCESS** | Applied Centre for Climate and Earth Systems Science South African  |
| **AERAP** | African-European Radio Astronomy Platform |
| **AGA** | Astronomy Geographic Advantage |
| **AISA** | Africa Institute of South Africa |
| **AMI** | Advanced Metals Initiative |
| **APP** | Annual Performance Plan |
| **ASSAf** | Academy of Science of South Africa |
| **AU** | African Union |
| **AVN** | African Very Long Baseline Interferometry Network |
| **BMGF** | Bill and Melinda Gates Foundation |
| **CEO** | Chief Executive Officer |
| **CeSTII** | Centre for Science, Technology and Innovation Indicators |
| **CHPC** | Centre for High Performance Computing |
| **CoC** | Centre of Competence |
| **CoE** | Centre of Excellence |
| **CRI** | Citrus Research Institute |
| **CSIR** | Council for Scientific and Industrial Research |
| **DEA** | Department of Environmental Affairs |
| **DHET** | Department of Higher Education and Training |
| **DIRCO** | Department of International Relations and Cooperation  |
| **DIRISA** | Data Intensive Research Initiative for South Africa |
| **DPME** | Department of Planning, Monitoring and Evaluation |
| **DST** | Department of Science and Technology |
| **EDCTP** | European and Developing Countries Clinical Trials Partnerships |
| **EIAP** | Emerging Industries Action Plan |
| **ENE** | Estimates of National Expenditure |
| **ERA** | Emerging Research Areas |
| **ESASTAP** | European South African Science and Technology Advancement Programme |
| **ESOF** | EuroScience Open Forum |
| **EST** | environmental services and technologies |
| **EU** | European Union  |
| **Exco** | Executive Committee |
| **FABI** | Forestry and Agricultural Biotechnology Institute |
| **FEI** | Flourochemicals Expansion Initiative  |
| **FiH** | First-in-Human |
| **FPEF** | Fresh Produce Exporters Forum |
| **FSA** | Forestry South Africa |
| **gbps** | gigabits per second |
| **GCSSRP** | Global Change, Society and Sustainability Research Programme |
| **GDP** | Gross Domestic Product  |
| **GERD** | gross expenditure on research and development |
| **HCD** | Human Capital Development |
| **HEI** | higher education institutions |
| **HPC** | High Performance Computing |
| **HSRC** | Human Sciences Research Council |
| **HSS** | Human and Social Sciences |
| **HySA**  | Hydrogen South Africa |
| **IATs** | Institute of Advanced Tooling |
| **ICASA** | Independent Communications Authority of South Africa |
| **ICR** | International Cooperation and Resources |
| **ICSU** | International Council for Science  |
| **ICT** | information and communication technology  |
| **ICT4E** | Information and Communication Technology for Education |
| **IIASA** | International Institute for Applied Systems Analysis |
| **IK** | Indigenous Knowledge  |
| **IKS** | Indigenous Knowledge Systems |
| **IKSDC** | Indigenous Knowledge Systems Documentation Centre |
| **IKSSA** | Indigenous Knowledge Systems of South Africa Trust |
| **MCA** | Multilateral Cooperation and Africa |
| **MoU** | Memorandum of Understanding |
| **MFPP** | Multipurpose Fluorination Pilot Plant |
| **MTEF**  | Medium Term Expenditure Framework  |
| **MTSF** | Medium Term Strategic Framework |
| **NACI** | National Advisory Council on Innovation |
| **UNESCO** | United Nations Educational, Scientific and Cultural Organization |

# INTRODUCTION

The Department of Science and Technology (DST) derives its mandate from the 1996 White Paper on Science and Technology. The DST is the custodial coordinator for the development of the National System of Innovation (NSI) and influences this system through key strategies such as the National Research and Development Strategy (NRDS) and the Ten-Year Innovation Plan (TYIP). The latter, particularly, seeks to contribute to the transformation of the South African economy into a knowledge-based economy, in which the production and dissemination of knowledge will lead to economic benefits and enrich all fields of human endeavour. In this regard the measure of success will be the level to which science and technology play a driving role in enhancing productivity, economic growth and socio-economic development. The framework of the TYIP will be used in the medium and long-term to guide the achievement of the strategic goals of the DST, which are –

* A responsive, coordinated and efficient National System of Innovation (NSI);
* Increased knowledge generation;
* Human capital development;
* Using knowledge for economic development; and
* Knowledge utilisation for inclusive development.

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 DST's "Performance Information Policy and Procedure Manual" (PIPPM) require that, where there are deviations between planned and actual performance, reasons for the deviations must be provided.

This second quarter review presents progress made from 1 July to 31 September 2015, including the challenges and issues confronting DST Programmes in their pursuit of the 2015/16 financial year targets as outlined in the Annual Performance Plan (APP). This review provides details of the financial transactions of the DST as at 31 September 2015.

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

|  |  |  |
| --- | --- | --- |
| **Not Achieved** | **No target due** | **Achieved** |

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

Red – **Not achieved** that the target has not be 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.

# DST SECOND QUARTER PERFORMANCE OVERVIEW

The DST’s second quarter overall performance is based on 52 total number of output targets planned for the second quarter. Of the 52 quarterly targets, 40 (77%) were achieved and 12 (23%) of those were not achieved. The total number of targets for the 2015/16 financial year is 68. In order to give an accurate reflection of Departmental performance, the analysis below is based on the 52 targets which were due in the 2015/16 second quarter. The overall performance of the DST second quarter performance is illustrated in figure 1 below.

Figure 1: DST overall final second quarter performance overview: Total number of planned output targets, *n*=52)

Figure 2 below illustrates the performance of the Department per Programme in the second quarter.

* Programme 1 has achieved 100% of its targets so far.
* Programme 2 has achieved 100% of its targets so far; however, it is important to note that the majority of Programme 2's planned targets are due in the fourth quarter.
* Programme 3 achieved 70% of their targets and 30% of the planned targets were not achieved.
* Programme 4 achieved 70% of their targets and 30% of the planned targets were not achieved.
* Programme 5 achieved 57% of their targets and 43% of the planned targets were not achieved.

Figure 2: The DST 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 subprogrammes:

1. **The Ministry and Office of the Director-General** supports the Minister, Deputy Minister and the Director-General (DG) by providing effective and efficient professional and executive support. The subprogramme is responsible for the development of 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.
2. **Enterprise Risk Management (ERM)**ensures that a risk management culture is embedded effectively and efficiently within the Department, by creating risk management awareness, and elevating risk management to a strategic level in the Department in order to improve the DST’s risk maturity level. The component’s secondary role is to ensure that countering fraud is made an integral part of strategy, operations and administration in the Department (i.e. to promote a fraud risk management culture in the DST).
3. **Policy, Planning, Governance, Monitoring and Evaluation (PPGME)**supports the DST leadership in steering the NSI.
4. **Internal Audit Activity (IAA)** performs internal appraisal activities to improve the effectiveness of control and governance processes to help the Department achieve its strategic, operational, and financial and compliance objectives.
5. **Human Resources** **(HR):** ensures that the Department is able to (i) provide a professional service through accurate, consistent and best employment practices in all its activities, which are aimed at supporting the achievement of the DST’s strategic and operational objectives; (ii) attract and retain employees who share the same organisational vision; (iii) champion change and transition, with a view to being a catalyst in the transition of people and the organisation to embrace and implement change; (iv) set performance standards and manage performance against them; and (v) 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 and instill a culture of service excellence.
6. **Finance:** ensures effective, efficient and economic utilisation of financial resources in line with financial prescripts through the development and effective implementation of financial systems, policies, frameworks and procedures. This includes budget planning and expenditure monitoring; and the management of procurement, acquisition, logistics, asset, and financial transactions.
7. **Information System and Knowledge Management:** isresponsible for the delivery of services that support the Department’s strategic plan and individual units’ objectives through the effective use of information technology. Its purpose is to align the Information Technology (IT) strategy with the business strategy to ensure that the Department achieves optimum use of its resources.
8. **Science Communication:** is responsible for ensuring effective communication between the Department and its key stakeholders and creating awareness of the Department’s key objectives and activities. The subprogramme raises the profile of the work done by the Programmes in line with the vision and mission of the Department. It also facilitates the preparation of information that the Minister and the Deputy Minister communicate externally.
9. **Legal Services**: This subprogramme is responsible for providing effective and efficient legal services to the Department in order to ensure that the interests of the Department are protected against any legal risk. The subprogramme ensures that the Department complies with relevant legislation and takes a proactive approach to dealing with matters that have the potential to give rise to conflict or legal challenges.

**TABLE 1: PROGRAMME 1 ADMINISTRATION 1**

|  |
| --- |
| **Strategic objective 1: To coordinate the identification, formulation and implementation of strategic initiatives and ensure that the priorities of the DST and its entities are aligned to national priorities**  |
| **Annual target: Minimum of DST 90% alignment to 2016/17 planning documents (strategic plan aligned to APP and APP aligned to ENE) submitted to Parliament by 31 March 2016** |
| **Performance indicator: Percentage alignment of DST planning documents (strategic plan aligned to APP and APP aligned to ENE) submitted to Parliament** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** |  **Status** | **Reason for variance**  | **Actions taken** |
| No target. | The target will be reported on in the second quarter.  | First draft DST strategic plan and APP submitted to NT and Presidency by 31 August 2015.  | First draft DST 2016/17 APP submitted to National Treasury and Presidency on 31 August 2015. | **Achieved** | N/A | N/A |
| **Annual target: 90% alignment between the 2016 DST ENE and 2016/17 APP by 31 March 2016** |
| **Performance indicator: Percentage alignment of DST planning documents (strategic plan aligned to APP and APP aligned to ENE) submitted to Parliament** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken** |
| No target. | The target will be reported on in the third quarter. | No target. | The target will be reported on in the third quarter. | **No target due** | N/A | N/A |
| **Annual target: Approved 2015/16 DST public entities strategic and annual performance plans and signed shareholder compact by 31 March 2016** |
| **Performance indicator: public entities strategic and annual performance plans approved by the Minister and shareholders’ compact signed by the Minister and chairpersons of the boards** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken** |
| No target. | The target will be reported on in the second quarter. | First drafts strategic plans and APPs for DST public entities (HSRC, SANSA, TIA, ASSAf, NACI and NRF) submitted to NT by 31 August 2015. | First drafts of 2016/17 APPs of entities were submitted to DPME and National Treasury on 28 August 2015. | **Achieved** | N/A | N/A |
| **Strategic objective 2: To develop and maintain good corporate governance systems for the Department and its entities.** |
| **Annual target: Four DST 2014/15 quarterly performance reports approved by DST EXCO and signed by the DG within 60 days after each quarter** |
| **Performance indicator: Number of DST performance reports (quarterly reports and annual reports) approved by DST EXCO and signed by DG (quarterly reports approved and signed within 60 days after the end of each quarter** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| One DST 2014/15 quarterly performance report approved by DST EXCO and signed by the DG within 60 days after the end of the quarter. | One DST 2014/15 fourth quarterly performance reports approved by DST EXCO and signed by the DG within 60 days after the end of the quarter. | One DST 2015/16 quarterly performance report approved by Exco within 60 days after the end of each quarter. | One DST 2015/16 quarterly performance report approved by Exco within 60 days after the end of each quarter. | **Achieved** | N/A | N/A |
| **Annual target: One DST 2014/15 annual report approved by Exco and signed by the DG by 2015** |
| **Performance indicator: Number of DST performance reports (quarterly reports and annual reports) approved by DST EXCO and signed by DG (quarterly reports approved and signed within 60 days after the end of each quarter** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| One DST 2014/15 annual report approved by DST EXCO and signed by the DG by 31 May 2014. | One DST 2014/15 annual report approved by DST EXCO and signed by the DG by 31 May 2014. | No target. | The target was achieved in the first quarter. | **No target due** | N/A | N/A |
| **Annual target: Eight DST public entities 2014/15 annual reports (CSIR, SANSA, HSRC, TIA, ASSAF, NRF, SACNASP and NACI) submitted to Parliament by 30 September 2015** |
| **Performance indicator: Number of DST public entities annual reports submitted to Parliament**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | The target will be reported in the second quarter. | Eight DST public entities’ 2014/ 15 annual reports (CSIR, SANSA, TIA, ASSAf, NRF, HSRC, SACNASP and NACI) submitted to Parliament by 30 September 2015.  | Eight DST public entities 2014/ 15 annual reports (CSIR, SANSA, TIA, ASSAf, NRF, HSRC, SACNASP, NACI) submitted to parliament by 1 September 2015 for tabling. | **Achieved** | N/A | N/A |
| **Strategic objective 3: To provide strategic communication for the DST and its Entities through marketing, media and branding initiatives, and the Science Engagement Strategy** |
| **Annual target: One DST Communication Strategy and Implementation Plan approved by Exco and MMM by 30 April 2015** |
| **Performance indicator: DST Communication Strategy and Implementation Plan approved by Exco and MMM** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance** | **Actions taken** |
| One DST Communication Strategy and Implementation Plan approved by Exco and MMM by 30 April 2015. | One DST Communication Strategy and Implementation Plan was approved by Exco and MMM by 30 April 2015. | No target. | The target was achieved in the first quarter. | **No target due** | N/A | N/A |
| **Annual target: Eight communication and media plans approved by DST Exco and MMM by 31 March 2016** |
| **Performance indicator: Number of DST communication and media plans approved by DST Exco and MMM** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| Two communication and media plans approved by DST Exco and MMM by 30 June 2015. | Two communication and media plans were approved as planned by 30 June 2015. | Two communication and media plans approved by DST Exco and MMM by 30 September 2015. | Two DST communication and media plans approved by Exco and MMM by 30 September 2015. | **Achieved** | N/A | N/A |
| **Annual target:. 10 public participation programmes held by 31 March 2016** |
| **Performance indicator: Number of public participation programmes conducted.**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| Two public participation programmes (PPP) by 30 June 2015. |  Two public participation programmes (PPP) by 30 June 2015 namely Reitz and Cofimvaba PPPs. | Two public participation programmes (PPP) by 30 September 2015. | Nine public participation programmes by 30 September 2015 for Giyani and World Space Week. | **Achieved**  | There were more unplanned events than anticipated. | N/A |
| **Annual target: Four Science and Technology (S&T) media coverage monitoring reports tabled at Exco and MMM by 31 March 2016** |
| **Performance indicator: Number of Science and Technology media monitoring reports approved by DST EXCO** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| One Science and Technology media coverage monitoring reports tabled at Exco and MMM by 30 June 2015. | One Science and Technology media report approved on 6 July 2015. | Four Science and Technology media monitoring reports tabled at Exco and MMM by 30 September 2015. | Four S&T media monitoring report tabled at Exco and MMM by 30 September 2015.  | **Achieved** | N/A | N/A |
| **Annual target: 16 media articles written to raise the DST’s public profile by 31 March 2016** |
| **Performance indicator: Number of media articles written to raise the DST’s public profile** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| Four media articles written to raise the DST’s public profile by 30 April 2015. | Four media articles written 30 April 2015. | Four media articles written to raise the DST’s public profile by 30 September 2015. | Four media articles written to raise the DST’s public profile by 30 September 2015. | **Achieved** | N/A | N/A |
| **Strategic objective 4: To make the DST an employer of choice and retain appropriately skilled personnel.** |
| **Annual target: 90 days to fill vacancy after date of advertisement by 31 March 2016** |
| **Performance indicator: Turnaround time to fill vacancies** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| 90 days to fill a vacancy after date of advertisement by 30 June 2015. | The average number of days it took to fill vacancies after advertisement was 58 days. | 90 days to fill a vacancy after date of advertisement by 30 September 2015. | The number of days it took to fill vacancies after advertisement was 51. | **Achieved** | Faster recruitment process by the Department.  | N/A |
| **Annual target: Vacancy rate reduced to 6% by 31 March 2016** |
| **Performance indicator: Vacancy rate reduced to a set rate** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| No target. | The vacancy rate for the first quarter was 4.86%. | No target. | No target due. | **No target due** | N/A | N/A |
| **Annual target: Minimum 92% DST personnel submitting performance contracts and reviews on time by 31 March 2016** |
| **Performance indicator: Percentage of DST personnel submitting performance contracts and reviews on time** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| 92% of DST personnel submitted annual reviews for previous financial year and probation reports by 30 June 2015.  | 95% of the annual reviews submitted to HR by 30 June 2015. | 92% of DST personnel submitted annual reviews for previous financial year and probation reports by 30 September 2015.  | 96% of DST personnel submitted annual reviews and probation reports. | **Achieved** | High level of compliance displayed by DST personnel. | N/A |
| **Strategic objective 5: To provide an efficient and effective information technology service.** |
| **Annual target: Two Enterprise Architecture Development Lifecycle steps developed and implemented by 31 March 2016.**  |
| **Performance indicator: Number of Enterprise Architecture Development Lifecycle steps developed and implemented** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | The target will be reported on in the second quarter. | Information systems architecture step (Phase 1 of 2) developed and implemented by 30 September 2015.  | Information systems architecture step (Phase 1 of 2) was developed and implemented by 30 September 2015. | **Achieved** | N/A | N/A |
| **Annual target: Three IT governance framework components implemented by 31 March 2016** |
| **Performance indicator: Number of IT governance framework components implemented** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP**  | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | The target will be reported on in the second quarter. | Strategic alignment of business and ICT (Phase 1 of 2) by 30 September 2015.  | Strategic alignment of business and ICT (Phase 1 of 2) by 30 September 2015. | **Achieved** | N/A | N/A |
| **Strategic Objective 6: To ensure effective and efficient financial and procurement services** |
| **Annual target: 2015 MTEF planning submission submitted to National treasury (NT) by 31 august 2015 and 2016 ENE submitted to NT by 31 January 2016** |
| **Performance indicator: Budget planning reports (MTEF and ENE) submitted to National Treasury** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | The target will be reported on in the second quarter. | 2016 MTEF planning submission submitted to National Treasury by 31 August 2015. |  2016 MTEF database submitted to National Treasury on 10 July 2015 and Budget Bids on 22 July 2015. | **Achieved** | N/A | N/A |
| **Annual target: Suppliers paid within 30 days after date of invoice**  |
| **Performance indicator: Suppliers paid within 30 days after date of invoice and tender process completed within 90 days period** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| Suppliers paid within 30 days after date of invoice. | The Department managed to pay all invoices to the suppliers within 30 days in the first quarter. | Suppliers paid within 30 days after date of invoice. | The Department managed to pay suppliers within 30 days after the date of invoice as planned.  | **Achieved** | N/A | N/A |
| **Annual target: Unqualified audit report of financial matters issued by the Auditor-General by 30 September 2015**  |
| **Performance indicator: Unqualified audit report of financial matters issued by the Auditor-General** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status**  | **Reason for variance**  | **Actions taken**  |
| No target. | Unqualified audit report of financial matters issued by the Auditor-General. | Unqualified audit report on financial matters issued by the Auditor-General by 30 September 2015.  | Unqualified audit report on financial matters issued by the Auditor-General by 30 September 2015.  | **Achieved** | N/A | N/A |

## PROGRAMME 2: TECHNOLOGY INNOVATION

The purpose of the Programme is toenable research and development in strategic and emerging focus areas to promote the realisation of commercial products, processes and services from R&D outputs; through the implementation of enabling policy instruments. The Programme contributes to the realisation of enhanced outputs of science, technology and innovation across the NSI, leading to enhanced competitiveness of the South African economy, and in improved quality of life for all.

The Programme provides policy leadership in the DST's long-term cross-cutting RDI initiatives through five subprogrammes:

**Bioeconomy subprogramme (including the Indigenous Knowledge-based Technology Innovation unit)** was previously known as the Biotechnology and Health Innovation subprogramme. The name change reflects the need to better reflect its core mandate as well as to factor in the recent incorporation of the Indigenous Knowledge (IK) based Technology Innovation unit under this subprogramme. The subprogramme leads the DST’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. It is a national strategy, incorporating the innovation needs of other departments and industry.

**Hydrogen and Energy (H&E)** subprogramme provides policy leadership in the Research, Development and Innovation (RDI) initiatives in the energy sector that are of a cross-cutting nature and have long-term impacts. It plays a key role in developing a sustainable and globally competitive South African energy knowledge base and industry, especially as it relates to the nascent global hydrogen economy by informing and co-shaping the national energy policy in coordination with the Department of Energy (DoE) and other key stakeholders. In particular, the Department plays an advisory role in the broader energy landscape, specifically in the development of the Integrated Energy Plan (IEP) and Integrated Resource Plan (IRP), with special emphasis on the technologies to be used in addressing the country’s energy needs, their deployment and the incentives required to facilitate the successful deployment of these technologies.

**Space Science and Technology (SST)** is a cross cutting and user driven subprogramme that supports the creation of an environment conducive to the implementation of the National Space Strategy (NSS) and South African Earth Observation Strategy (SAEOS) under the overarching guidelines of the National Space Policy, an instrument of the Department of Trade and Industry. The NSS was a response to the TYIP, which identified a few key outcomes that must be realised over the long term in order for South Africa to leverage the opportunities that the space value chain presented.

**Innovation Priorities and Instruments (including Emerging Research Areas)**

The subprogramme 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 overall objectives of Programme 2 through the identification, development, creation and support of policy and institutional structures that facilitate technology development and its progression into national and international markets. The Emerging Research Areas (ERA) unit was incorporated into the IPI subprogramme. The ERAs are defined as Science and Technology (S&T) research fields that are multi-disciplinary in nature, and have not been covered by conventional disciplines, and offer the potential to positively affect social and economic development. The ERA unit’s focus includes the development of nanotechnology, photonics, synthetic biology, and robotics, through the roll-out of approved strategies and implementation plans.

**National Intellectual Property Management Office (NIPMO)** is the national implementing agency for the Intellectual Property from Publicly Financed Research and Development Act (IPR-PFRD Act) which was promulgated on 22 December 2008. The long title of the IPR-PFRD Act reads “To provide for more effective utilisation of intellectual property emanating from publicly financed research and development; to establish the National Intellectual Property Management Office and the Intellectual Property Fund; to provide for the establishment of offices of technology transfer at institutions; and to provide for matters connected herewith”.

**Highlights of the Quarter**

A total of nine publications and one patent application have been produced at the HySA Centres of Competence (CoCs). In addition, the inaugural Hydrogen South Africa (HySA) Technical Meeting was held in Cape Town on 17 and 18 August 2015. The meeting brought together stakeholders in the hydrogen and fuel cell technologies (HFCT) sector, with the aim of strengthening the public-private partnerships (PPPs) within the HydroHySA Programme. The Chief Directorate also hosted the SA-USA Energy Storage workshop in kwaMaritane, North West Province, under the South Africa –United States of America bilateral agreement. The meeting brought together experts in energy storage, focusing on Lithium Ion batteries and batteries for utility scale storage.

The participants included Drs Mike Thackeray, Jeff Chamberlain and Khalil Amine from Argonne National Labs, Dr Jud Virden from the Pacific North-West National Laboratory as well as representatives from the Industrial Development Corporation (IDC), the Department of Trade and Industry (DTI)**,** Department of Environmental Affairs (DEA), Eskom, The South African Nuclear Energy Corporation (NECSA), Council of Graduate schools (CGS), Mintek, Council for Scientific and Industrial Research (CSIR), University of Limpopo (UL), Nelson Mandela Metropolitan University (NMMU) and University of Western Cape (UWC). HySA Infrastructure hosted the Researcher Links bilateral workshop in Pretoria, South Africa from 01 to 04 September 2015, with participants from South Africa and the United Kingdom. The workshop was supported by the Newton Fund and co-funded by the British Council and the Royal Society of Chemistry. The focus of the workshop was on hydrogen storage materials with the emphasis on the design, synthesis and characterisation of porous materials.

Rainer Wellmanns was hired as a business development manager and became the first employee of HyPlat, the commercial entity of HySA Catalysis. He will be responsible for sales and marketing as well as seeking external funding for commercialisation.

Through public private partnerships, the Hydrogen and Energy Chief Directorate facilitated the deployment of a 5kW hydrogen fuel cell unit at a clinic in Windsor East, Johannesburg, which was jointly launched by the Deputy Director-General, Technology Innovation and the City of Johannesburg Member of the Mayoral Committee (MMC) for Health and Social Development, Councilor Nonceba Molwele. Apart from providing energy access in support of the provision of education and health, the technology lays the foundation for the growth of a new industry based on South Africa’s platinum resource. At the launch the City of Johannesburg expressed its gratitude to the Department and expressed the need to explore further partnerships, especially on mobile health.

The Director: Hydrogen and Energy; supported the Minister during the Deputy President’s visit to Japan in August 2015. The Minister delivered the keynote address during the Japan - South Africa Hydrogen and Fuel Cell Symposium, which was also attended by the HySA CoC Directors and officials from Department of Energy (DoE) and Department of Trade and Industry (DTI)

During the reporting period the DST continued to support the development of the Offices of Technology Transfer (OTT) Support and IP Fund.  Applications for the OTT Support Fund were presented to the internal allocations committee and after their inputs approval was requested and obtained from the DG.  Furthermore, the IP Fund applications were received from 22 institutions with a total claim amount of just under R43 million. Good progress is being made in the detailed preparations for the WIPO Summer School, the Technology and Innovation Support Centers(TISC) workshop from 4 to 6 November 2015 and the registration of 104 individuals for the WIPO Academy online courses.

Within the Health Innovation space, the TB diagnostic from North West University was validated and one Prototype was ready for commercialisation. Ketlaphela, the state-owned pharmaceutical company was created and the first attempt to locally manufacture Tenofovir, an essential anti-retroviral in the first-line treatment of HIV/Aids, has commenced. The reprioritisation of Biovac is on course with the Agreement between Biovac and Pfizer finalised. A press announcement of this partnership is scheduled for early November 2015.

In agriculture, a concerted effort has been made on multi-stakeholder engagements with different government departments including the Department of Agriculture, Forestry and Fisheries (DAFF), the Department of Rural Development and Land Reform (DRDLR), the Department of Trade and Industry (DTI)**,** as well as with industry and science councils specifically on crop improvement including wheat and soybean.  This also includes engagement with DRDLR on the ongoing agro-innovation hub feasibility study and alignment with Agri-parks. The establishment of the wheat breeding platform is on track and once established will deliver new cultivars for increased productivity and food security.

Much progress has been made in identifying new opportunities for investment; on the agriculture sector these include an agroprocessing feasibility study to examine existing markets and potential market demand for indigenous and underutilized crops and value addition initiated in 2015/16.  The Industry and Environment initiated techno-economic and environmental impact study for the bio-materials priority area of the bio-economy as well as a biochemicals feasibility study.

Ten indigenous knowledge-based community development projects have been assessed for commercialisation viability. Commercialisation and entrepreneurship training courses for these communities and organisations are ongoing at the South African Bureau of Standards, the Innovation Hub, the CSIR and the University of Pretoria (UP). A commercialisation agreement for an HIV immune modulator was signed between the University of the Free State (UFS) and a commercial manufacturer, Afriplex. A feasibility study for the establishment of an extraction plant facility in Mamelodi was completed. This includes a Moringa pilot plant in Limpopo which is 80% complete.

The Space Science and Technology Chief Directorate held a space awareness and outreach campaign in Kuruman, Northern Cape (NC). This was achieved in partnership with the (NC) Basic Education, South African Agency for Science and Technology Advancement (SAASTA), and the South African National Space Agency (SANSA). The campaign reached-out to more than 2 000 learners from grade 9 to 12 during 14 to 19 September 2015. On 19 September, the Deputy Director-General: Technology Innovation, Mr Muofhe, delivered a keynote address on behalf of the Department. Space exhibitions and presentations were made possible by the presence of SANSA, SAASTA, Bloodhound, Denel Dynamics, Hartebeesthoek Radio Astronomy Observatory (HartRAO), Square Kilometre Array (SKA), South African Weather Services (SAWS) and the Department of Trade and Industry representing the South African Council for Space Affairs (SACSA). The campaign was promoted through community radio stations in Kuruman and the South African Broadcasting Corporation (SABC) radio stations across the country. This was followed by radio interviews during the week of 28 September to 2 October 2015 through national and community radio stations throughout the country on the benefits of space science and technology to humankind.

The publications targets for the financial year are on target for the Emerging Research Areas, with five publications and 10 manuscripts submitted. Whilst supporting evidence was not received in time for formally reporting in the quarter, the preliminary numbers for supported postgraduate student numbers are promising that the annual targets will be met.

Oversight of TIA remains a priority. The 1st quarter report was reviewed and a meeting held with TIA to reflect on the report. TIA’s Investment Framework Policy was also reviewed and work-shopped with the TIA colleagues. Inputs were provided on TIA’s annual report for incorporation in the submission to the Minister for the meeting with the TIA Board. Lastly, an extensive workshop was held between TIA and DST colleagues to discuss the TIA’s first draft APP.

The reviews of the Technology Top 100 (TT100) Internship Programme and the Centres of Competence Framework were completed, and the draft reports received for DST evaluation.

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

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| --- |
| **Strategic objective 1: To** **facilitate and resource investments in space science, energy, bio-innovation, nanotechnology, robotics, photonics, IKS, IP management, technology transfer and technology commercialisation**  |
| **Annual target: Four technology development and innovation policy directives developed and adopted by government by 31 March 2016** |
| **Performance indicator: Number of policy directives developed and adopted by government** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | No target. | No target. | No target. | **No target due** | N/A | N/A |
| **Annual target: Seven innovation-enabling programmes implemented by 31 March 2016** |
| **Performance indicator:**  **Number of innovation enabling Programmes Implemented**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | No target. | No target. | No target. | **No target due** | N/A | N/A |
| **Annual target: 118 knowledge products generated by 31 March 2016** |
| **Performance indicator:**  **Number of knowledge products generated** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | No target. | No target. | No target. | **No target due** | N/A | N/A |
| **Strategic objective 2: To oversee, monitor and regulate key policy instruments, including institutions/agencies and support interventions in the key strategic areas of Space science, energy, bio-innovation, nanotechnology, robotics, Photonics,**  |
| **Annual target: 275 new disclosures10 reported by publicly funded institutions by 31 March 2016** |
| **Performance indicator:**  **Number of new disclosures reported by publicly-funded institutions** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Disclosures received in terms of biannual IP7 form submissions by 30 June 2015.  | 141 new disclosures were received from publicly funded institutions. | No target. | No target. | **No target due** | N/A |  N/A |
| **Annual target: Nine evaluation and assessment reports developed and approved by Exco by 31 March 2016** |
| **Performance indicator:**  **Number of evaluation and assessment reports developed and approved by Exco** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| One evaluation and assessment report developed and approved by Exco by 30 June 2015.  | One evaluation and assessment report developed and approved:* Feedback report on the TIA Quarter 4 report submitted through the DST Governance unit.
 | Two evaluation and assessment reports developed and approved by Exco by 30 September 2015.  | Two evaluation and assessment reports developed and approved:Comments on TIA Q1 report submitted through DST Governance UnitIPI comments incorporated as part of the Submission and briefing notes through the Governance Unit.SANSA comments and inputs were provided on the quarter 1 report.Inputs for SANSA’s 2014/15 Annual Report were submitted. | **Achieved** | N/A | N/A |
| **Strategic objective 3: To coordinate and support research and high-end skills development in the strategic and emerging S&T areas of space science, Bio-innovation, nanotechnology, Robotics, Photonics, synthetic biology, structural biology, systems biology and functional genomics (collectively the South African BioDesign Initiative (SABDI), IP management, technology transfer and technology commercialisation**  |
| **Annual target: 382 postgraduate students (master’s and doctoral) supported through DST-funded R&D initiatives by 31 March 2016** |
| **Performance indicator:**  **Number of postgraduate students (master’s and doctoral) supported through DST-funded research and development initiatives**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | No target. | No target. | No target. | **No target due** | N/A | N/A |
| **Annual target: 180 trainees supported in the strategic and emerging research areas by 31 March 2016** |
| **Performance indicator: Number of trainees supported in strategic and emerging research areas** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | **WIPO Summer School (SS):** approval for the SS has been attained. Advertisements placed for recruitment of candidates. | No target. | No target. | **No target due** | N/A | N/A |
| **Strategic objective 4: To support, promote, and advocate for the development and translation of scientific research and development outputs into commercial products, processes and services that will contribute towards economic growth and a better quality of life** |
| **Annual target: Six** - **Eight new technology products, processes and/or services developed by 31 March 2016** |
| **Performance indicator: Number of new technology products, processes and/or services developed** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | Business plan approved. | Five new technology products, processes and/or services developed by 30 September 2015.  | Five new technology products, processes and/or services developed in the reporting period. | **Achieved**  | N/A | N/A |
| **Annual target: Three new technology products, processes and/or services commercialised by 31 March 2016** |
| **Performance indicator: Number of new technology products, processes and/or services commercialised** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | No target. | No target. | No target. | **No target due** | N/A | N/A |

## 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 supports South African foreign policy through science diplomacy.

The Programme has three subprogrammes:

**International Resources** works to increase the flow of international resources into the country by creating conditions for access to international STI skills and global projects.

**Multilateral Cooperation and Africa** advances and facilitates South Africa’s participation in strategic African bilateral agreements and multilateral organisations on STI, so as to strengthen the NSI and to achieve shared economic and social development in the region and on the continent.

**Overseas Bilateral Cooperation** promotes and facilitates collaborative activities and leverages resources in support of the NSI from countries outside Africa, with a specific focus on developing a knowledge-driven economy.

**Programme International Cooperation and Resources**

 **Highlights of the Quarter**

During the period under review the Programme continued to register solid progress in developing the Department’s portfolio of international partnerships, with the objective of accessing international resources, experience and expertise, to strengthen the National System of Innovation.

In early August 2015 the Minister also concluded a Memorandum of Understanding on bilateral cooperation with Vietnam, the first formal arrangement between South Africa and this strategically important country in South East Asia, regarding science and technology cooperation. In August 2015 Minister Pandor further signed a Memorandum of Understanding on cooperation with Austria, which will notably enable cooperation opportunities with regard to science for sustainable development.

As part of the geographic diversification of the portfolio of partnerships, with a greater focus on cooperation with emerging economies, strides were also made through technical engagements to deepen cooperation with Mexico (in marine science) and with Jamaica (in indigenous knowledge systems.) Consistent with the Programme’s focus on greater Public-Private Partnerships as well as innovation in the international cooperation initiatives the Programme steers, the Programme supported a highly successful visit by Minister Pandor to Japan in 2015, as part of Deputy President Ramaphosa’s delegation, during which fruitful engagements were held to foster cooperation with Japanese industry for example the domain of hydrogen and fuel cell technologies. The promotion of such industry partnerships was also the focus of the Minister’s participation in the Innovation African 2015 Conference, which was held in Uganda in late September 2015. The specific focus of the event was the information and communication technology partnerships, especially focused on education.

The Programme’s portfolio of bilateral relations also provided a foundation upon which to further develop trilateral and multilateral initiatives. For example, the Quarter saw excellent progress with South Africa at the lead in developing a Framework Programme, which will support science, technology and innovation cooperation between the BRICS (Brazil, Russia, India, China and South Africa) partners. A priority theme for the Programme remained to develop trilateral cooperation between South Africa, developed countries and other African partners. In this context, very promising progress was made to develop a trilateral programme between South Africa, the United Kingdom and Kenya on cooperation in science, technology and innovation. Africa remained the Programme’s priority geographical focus as evidenced by the conclusion in July 2015 of a comprehensive new programme of cooperation with Tanzania.

On the multilateral front, 2015 was a decisive year for the agreement of many new global partnerships and frameworks of cooperation. Chief among these was the United Nations adoption in September 2015 of the Sustainable Development Goals (SDGs) as part of the 2030 Agenda for Sustainable Development. The Programme as the Department’s representative played an important part in the South African Government’s contribution to the SDG process, with a specific focus on the role of science, technology and innovation as cross-cutting instruments for the achievement of the SDGs. The Programme also actively engaged with the United Nations’ Financing for Development Agenda and participated in the International Conference on Financing for Development held in July 2015 in Addis Ababa as part of a strategic effort to promote the prioritization of science capacity-building as part of the global financing for development compact.

Providing direct advisory and support services to the South African research and innovation community to enable them to access and leverage international partnership opportunities, is embedded as part of all aspects of the Programme’s work. In September 2015, the Programme for example actively engaged in a number of activities at the World Social Science Forum to promote South Africa’s international cooperation in the social sciences and humanities. During the Quarter, the Programme further enabled new international funding and resources for science and technology in South Africa through partnerships with philanthropic organisations (e.g. the Bill and Melinda Gates Foundation and the Carnegie Corporation) as well as with industry (e.g. Hitachi). Furthermore, Human Capital Development (HCD), including the support for postgraduate studies as well as skills transfer, was an important horizontal component of these programmes. Development cooperation with partners such as the Japan International Cooperation Agency (JICA) also remained active with a new capacity-building programme focused on bio-fuel production launched in August 2015.

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

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| **Strategic objective 1: To secure international funds to complement South Africa’s national investments in STI, including resources for DST initiatives requiring external investments**  |
| **Annual target: R380m in international funds directly invested in research, innovation and STI human capital development programmes as well as research infrastructure investments in South Africa as part of cooperation initiatives implemented by the DST by 31 March 2016** |
| **Performance indicator: Amount (expressed in Rand millions) of international funds directly invested in research, innovation and STI human capital development programmes as well as research infrastructure investments in South Africa accounted for as part of cooperation initiative** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| R60 million in international funds directly invested in research, innovation and STI human capital development programmes as well as research infrastructure investments in South Africa as part of cooperation initiatives implemented by the DST by 30 June 2015. | R87 million international funds sourced:R24 million from the EU towards the Sector Budget Support Programme for Science and Technology for Poverty Alleviation; andR63 193 791 from the EU towards the General Budget Support Programme for Rural Innovation. | R80 million in international funds directly invested in research, innovation and STI human capital development programmes as well as research infrastructure investments in South Africa as part of cooperation initiatives implemented by the DST by 30 September 2015.  | R39 million in internationalfunds directly invested inresearch, innovation and STIhuman capital developmentprogrammes as well asresearch infrastructureinvestments in South Africaas part of cooperationinitiatives implemented bythe DST by 30 September 20 | **Not achieved** | The international financial situation presents problems in securing investments in South Africa. Some of the opportunities are taking longer to finalise. | New opportunities for investment are being developed and those opportunities that have been delayed are being finalised. |
| **Annual target: R220m invested by international partners in their own organisations and initiatives but targeted at cooperation in research, innovation and STI human capital development with South African partners as part of cooperation initiatives implemented by the DST by 31 March 2016** |
| **Performance indicator: Amount of Amount (expressed in Rand millions) of funds invested by international partners in their own organisations and initiatives, but targeted at cooperation in research, innovation and STI human capital development with South African partners as part of cooperation** **implemented by the DST**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| R20 million invested by international partners in their own organisations and initiatives but targeted at cooperation in research, innovation and STI human capital development with South African partners as part of cooperation initiatives implemented by the DST by 30 June 2015. |  A total of R130 million invested by international partners in;* European Union Industrial handling of raw materials for European Industries.
* European African Joint Collaborations Project (ERAFRICA)
 | R40 million invested by international partners in their own organisations and initiatives but targeted at cooperation in research, innovation and STI human capital development with South African partners as part of cooperation initiatives implemented by the DST by 30 September 2015. | R12 million invested by international partners in their own organisations and initiatives but targeted at cooperation in research, innovation and STI human capital development with South African partners as part of cooperation initiatives implemented by the DST by 30 September 2015. | **Not achieved** | The funds which were secured for the Argentineans to work with South African researchers under the Argentina-South Africa Centre for Nanotechnology (ASACEN) were not disbursed by the Ministry of Science and Technology in Argentina due to their internal political problems. | Further investment opportunities with international partners are being developed. |
| **Strategic objective 2: To access international knowledge, capacities and resources, to enhance South Africa’s national STI capabilities, contributing to the attainment of the DST’s targets for human capital development, especially for international PhD training** |
| **Annual target: 50 South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 March 2016** |
| **Performance indicator: Number of South African students accepted into international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Five South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 30 June 2015. | One South African student accepted for PHD programme at the Belgium University through the ERAFRICA projects. | 10 South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 30 September 2015. | Total of 20 South African students participating in international training programmes. | **Achieved** | There was an opportunity presented by the international partner to increase the number of participants in this scholarship programme. There have been uptakes of opportunities offered by the international partners. | This new programme is being implemented with the expectation that the results of new post-graduate students will follow. |
| **Annual target: 400 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 facilitated by the DST by 31 March 2016** |
| **Performance indicator: Number of international partner organisations (i.e. legal entities) collaborating with South African partners within the framework of formalised collaborative research, innovation or STI human capital development projects as part of cooperation initiatives** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **RAG Status** | **Reason for variance**  | **Actions taken**  |
| 50 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 facilitated by the DST by 30 June 2015. | 171 international partner organisations:Collaboration partners on the Capacity Building in Legume Science in Africa. | 75 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 facilitated by the DST by 30 September 2015. | 64 international partner organisations: One International partner in the Genetics of Rheumatic Heart Disease Network (RHDGen Network) project at UCT namely the Wellcome Trust;Five Japanese partners in Seismology project namely -Japan International Cooperation Agency (JICA)- Ritsumeikan University- Tohoku University- The National Institute of Advanced Industrial Science and Technology (AIST) and- University of Tokyo;Namibia Science Indicators workshop (Three Institutions NCSRT, NEPAD and UNCST) Algeria Nanotechnology workshop (2 DCTA and NCNSM) Angola TIA workshop (13 Institutions)  International Institute of Applied Systems Analysis (IIASA) - NRF MoU singed during the Austria IIASA Council Meeting4th International Centre for Genetic Engineering and Biotechnology (ICGEB) Standing Committee Meeting and 21st ICGEB Board of Governors (BoG) MeetingComprehensive Nuclear Test Ban Treaty Organisation (CTBTO) visit by Minister Pandor. | **Achieved** | The majority of international partner organisation deliverables were overachieved in the first quarter and that offset the Quarter 2 shortfall | N/A |
| **Annual target: 10 dedicated international technical exchanges to build or reinforce South Africa’s capacities in key STI domains specifically referenced in the DST Strategic Plan, undertaken with the support of international partners facilitated by the DST by 31 March 2016** |
| **Performance indicator: Number of 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 DST Strategic Plan, undertaken with the support of international** **partners facilitated by the DST**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Two dedicated international technical exchanges to build or reinforce South Africa’s capacities in key STI domains specifically referenced in the DST Strategic Plan, undertaken with the support of international partners facilitated by the DST by 30 June 2015. | Eight dedicated international technical exchanges to build or reinforce South Africa’s capacities in key STI domains.  | Two dedicated international technical exchanges to build or reinforce South Africa’s capacities in key STI domains specifically referenced in the DST Strategic Plan, undertaken with the support of international partners facilitated by the DST by 30 September 2015. | 14 dedicated international technical exchanges to build or reinforce South Africa’s capacities in key STI domains. | **Achieved** | More opportunities than anticipated arose due to strong international relationships. | N/A |
| **Strategic objective 3: 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**  |
| **Annual target: 20 research, innovation and STI human capital development cooperation projects co-funded or supported in kind by DST and at least one other African government by 31 March 2016** |
| **Performance indicator: Number of research, innovation and STI human capital development cooperation projects, co-funded or supported in kind, by DST and at least one other African government**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Three research, innovation and STI human capital development cooperation projects co-funded or supported in kind by DST and at least one other African government by 30 June 2015. | 12 ERAFRICA projects implemented with SA researchers.  | Five research, innovation and STI human capital development cooperation projects co-funded or supported in kind by DST and at least one other African government by 30 September 2015. | BIOFISA II SA/Finland/SADC Partnership to strengthen Regional Biosciences through SANBIO and NEPAD  | **Achieved** |  The majority of deliverables were achieved in the first quarter and that offset the Quarter 2 shortfall. | N/A |
| **Annual target:** **R50m in international funds directly invested in African regional and continental research, innovation, STI human capital development or research infrastructure programmes as a result of DST facilitation by 31 March 2016** |
| **Performance indicator:** : **Amount (expressed in Rand millions) of international funds directly invested in African regional and continental research, innovation, STI human capital development or research infrastructure programmes as a result of DST facilitation** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| R5 million in international funds directly invested in African regional and continental research, innovation, STI human capital development or research infrastructure programmes as a result of DST facilitation by 30 June 2015. | R12 million:H2020 projects involving South African researchers and other African countries, but the amount excludes funds allocated to SA researchers. | R15 million in international funds directly invested in African regional and continental research, innovation, STI human capital development or research infrastructure programmes as a result of DST facilitation by 30 September 2015. | R 1 million USAID support for Indigenous Knowledge Systems (IKS) Standards Development and Capacity Building Project in SADC. | **Not Achieved** | The underachievement is due to the finalisation of international agreements. | International agreements are being finalised to meet the targets. |
| **Annual target: Seven AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by DST by 31 March 2016** |
| **Performance indicator: Number of approved AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by DST**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| One AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by DST by 30 June 2015. | * Three AU or SADC STI initiatives:
* SADC Climate Change Validation Workshop (May);
* ACU/SARIMA CN+/DRUSSA (May);
* Africa Unity for Renaissance Conference (May).
 | Two AU or SADC STI initiatives, including programmes, projects or governance frameworks, endorsed at AU or SADC ministerial level supported (financially or in kind) by DST by 30 September 2015 | Four AU or SADC STI initiatives:1. SADC Needs and Numbers Working Group Meeting (Sep 2015).2. SADC STI Policy Training Working Group Meeting (Sep 2015).3. STISA 2024 Validation Workshop (Sep 2015).4. 34th Meeting Of SADC Ministers Responsible For Energy (Jul 2015). | **Achieved** | More opportunities than anticipated arose due to strong international relationships. | N/A |
| **Strategic objective 4: 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, contributing to a better and safer Africa in a better world** |
| **Annual target: Four formally recorded decisions made in intergovernmental STI forums, such as multilateral organisations, with a direct bearing on resource allocation to support priorities of government's programme of action following specific DST intervention by 31 March 2016** |
| **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 DST intervention**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| One formally recorded decision made in intergovernmental STI forums, such as multilateral organisations, with a direct bearing on resource allocation to support priorities of government's programme of action following specific DST intervention by 30 June 2015. | One contribution to the African Union (AU) declaration for financial inclusion of woman in Agribusiness. | One formally recorded decision made in intergovernmental STI forums, such as multilateral organisations, with a direct bearing on resource allocation to support priorities of government's programme of action following specific DST intervention by 30 September 2015. | One High Level Policy Forum (HLPF) on Sustainable Development Goals (SDGs) and inclusion of the Technology Facilitation Mechanism. | **Achieved** | N/A | N/A |
| **Annual target:** Two **leadership position occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's programme of action following specific DST intervention by 31 March 2016** |
| **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 DST intervention** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | Still in progress South Africa chaired the African group on 5 June 2015 during the United Nations Convention on Climate Change negotiation technology stream. | One leadership position occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's programme of action following specific DST intervention by 30 September 2015. |  Two leadership position occupied by South Africa :1. South African (Glaudina Loots) appointed as co-chair of the Global Tuberculosis Partnership Working Group (GTBVP) 2.Presidency of NAM S&T Center. | **Achieved** | More opportunities than anticipated arose due to strong international relationships. |  |

## 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 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 subprogramme 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 subprogramme 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 DST astronomy programmes. Of particular relevance are the Southern African Large Telescope, the MeerKAT, the High Energy Stereoscopic System, the African Very Long Baseline Interferometry (VLBI) network, and the Square Kilometer Array (SKA) projects.

**Highlights of the Quarter**

**Human Capital and Science Promotions**

On the next generation of researchers progress has been made during the reporting period. A trend of declining proportions of black students as one goes to higher postgraduate studies has been observed, and the Department has completed a study to establish the reasons for this trend. The outcomes of this study were presented to the Minister during the reporting period.

A presentation to the Minister was made on data on the levels of employment opportunities for master’s and PhD holders. Statistics South Africa’s quarterly labour force survey was used to source the five-year data (2009-2013). Using their strict definition of unemployment, the analysis revealed very low unemployment levels among Master’s and doctoral degree holders (below 3%). The relative percentage of employed people who have master’s and doctoral degrees is also very low at 1%.

On workplace preparation programmes, a number of DST units implement work placement programmes (internship and the national youth service programmes) through different management agencies and differ in terms of their principles and tenets resulting in variations in the roles of the DST, host institutions’ requirements; recruitment processes, reporting, stipends and duration of support, among others. During the reporting period the integrated framework for workplace preparation programmes was approved by the Executive Committee (EXCO) and consultations on it were made with the Department of Public Service and Administration (DPSA). The purpose of the document is to provide a unifying framework that will guide all workplace preparation programmes to minimise, rather than eliminate, variations in these programmes. The document seeks to establish common guidelines, principles and parameters to inform, rather than instruct the different funding units of workplace preparation programmes.

On established researchers, the Minister awarded 42 women-only research chairs under the South African Research Chairs Initiative to bring close to 50% the proportion of women chair-holders. Two SA - UK bilateral Research Chairs have been awarded to two universities to do research in Food Security. The Universities awarded the Chairs were, Nelson Mandela Metropolitan University and the University of the Western Cape. The Chair at the University of the Western Cape will be working directly with the Centre of Excellence in Food Security co-hosted by the Universities of the Western Cape and Pretoria.

Regarding science promotion, the National Science Week (NSW) was held from 1 to 8 August 2015 in all nine provinces, under the theme “Light and light-based technologies”. The number of organisations awarded grants enabled about 83% (43) of the 52 municipal districts all over South Africa to host the NSW 2015 activities during the focus week. There were 62 grant-holders and 10 service providers who delivered the NSW countrywide. Among the grant-holders were science centres, non-governmental organisations, education districts, a Dinaledi school, higher education institutions, national research facilities, and government institutions (museums). It was launched by the Minister on 1 August 2014 at the Mafikeng campus of the North West University. Performance data on NSW is still being compiled, however a total attendance of 2 189 learners from 34 schools were recorded at the launch event. A total of 74 exhibitors attended the event to display exhibitions and engage the public in line with the theme.

The DST implements the Women in Science Awards (WISA) to recognise and reward the achievements of women scientists and researchers and to profile them as role models for younger scientists and researchers. The WISA event was held in Johannesburg on 13 August 2015, hosted by the Minister. The awards were made in two broad fields, namely, the Life Sciences, and Humanities and Social Sciences. Informed by the United Nations Commission on the Status of Women theme, the WISA theme was “Science for a sustainable future”. The event enjoyed wide media (TV, print and radio) coverage.

**Science Missions**

*Earth Systems Sciences:*

Filling of a vacant position of a Director: Global Change (following the resignation of the previous incumbent) within the Global Change Programme Management Unit (PMU) under the Knowledge Fields Development at the NRF. This appointment strengthens PMU and its capacity to manage and coordinate various global change programmes and initiatives.

Successful finalisation of a conceptual framework document on the development of an Earth Systems Science research and development (R&D) flagship programme and repositioning of the Applied Centre for Climate and Earth Systems Science (ACCESS) to become a strategic research network to implement the proposed Earth Systems Science flagship programme.

Successful inaugural meeting or first Foundational Biodiversity Information Programme (FBIP) Science Forum on 1-3 July 2015. The forum was attended by scholars, policy makers, researchers/scientists and representatives of civil society and business.

The Applied Centre for Climate and Earth Systems Science (ACCESS) recently completed the 17th and 18th incarnation of their DST funded Habitable Planet Undergraduate Workshop Programme (HPW). The HWPs are a series of ten day events that aim to introduce undergraduate students to the emerging discipline of Earth Systems Science (the interdisciplinary science of how the planet works). These workshops have been successfully run all over Southern Africa (and in fact in Kenya) since 2007.  Each workshop involves a group of 50 students from all over the country, and from a wide range of backgrounds, coming together to learn about, and discuss environmental issues but with an Afrocentric spin. The 17th HPW was held from 29 June to 8 July 2015 in KwaZulu Natal (for the 1st time), and was jointly hosted by the University of KwaZulu Natal (UKZN) and the University of Zululand (UNIZULU). The 18th HPW was hosted by the CSIR in Cape Town from 11 to 20 July 2015.

ACCESS is in the process of collating feedback from the students but the data already shows that the workshops were hugely successful both in terms of inspiring students with a love of science through the career evening in which the DST Earth System Science Unit actively participates in. For more information on the ACCESS HPW programme visit <http://www.access.ac.za/projects-programmes/education-training/>

The Chief Director: Science Missions and the Earth Systems Science Unit visited the Arid Lands and Grasslands-Wetlands-Forests Nodes of the South African Environmental Observation Network (SAEON). This provided them with first-hand experience of the research sites, and the kind of research projects being conducted as well as the conditions under which scientists do their field work.  The visits further helped them understand the type of challenges each Node is facing in doing its day to day work.

Part and parcel of the visits was key strategic meetings held which served to emphasise the need to further explore synergies and opportunities inherent between the following key stakeholders, e.g the DST, NRF, SAEON, SKA, CSIR, iSimangaliso Wetland Park Authority and the Department of Environmental Affairs. Furthermore, the DST made a commitment to work together with the iSimangaliso Wetland Park Authority in an effort to contribute positively towards helping solve the challenges facing the area as well as in working towards exploring possibilities of using the iSimangaliso Wetland Park as a laboratory for research and knowledge production by the SAEON.

*Indigenous Knowledge Systems:*

The DST, in partnership with the Office of the Premier, Free State Province, hosted the fifth IKS Expo, in Mangaung Free State Province. The 5th IKS Expo ran concurrently with the annual Mangaung African Cultural Festival. The IKS Expo is a DST’s biennial flagship public awareness campaign on IKS. The Expo was held under the principal theme “Indigenous Knowledge Systems, Our Heritage, Our Culture for Technological and Socio-economic Advancement. Approximately 250 participants attended the workshop on a daily basis.

The workshop was also graced by the MEC of Health Mr Benny Malakoane who welcomed all participants on behalf of the Premier. The main purpose of the 215 IKS Expo was to bring innovators and crafters together to demonstrate the economic value of products emerging from Indigenous Knowledge and technology and also showcase the competitiveness of these products/ technologies to the economy. A total of 40 exhibitors had stalls at the Expo.

The Portfolio Committee on Science and Technology requested the DST to brief it on progress around the draft IKS Bill on 19 August 2015. The Portfolio Committee expressed support for the Bill and commended the work undertaken by the DST, notwithstanding the complex nature of the exercise both administratively and legally. On 23 September 2015, the IK Bill was presented to Economic Sectors, Employment and Infrastructure Development (ESEID). The ESEID Cluster approved the presentation to the Minister’s meeting scheduled on 29 October 2015. The DST was commended for being the first Department to submit a Socio and Economic Impact Assessment form

*Marine and Polar Research:*

* Working groups for the development of the Marine Research Strategy Implementation plan were identified and the first drafts of the themes to be incorporated into the implementation plan were submitted to the coordinators.
* Winter Research Expedition: In July/August 2015, the DST, the Department of Environmental Affairs (DEA) and the NRF established a winter research voyage on the research ice breaker ship, the S.A. Agulhas II. This was the first dedicated research expedition within the Southern Ocean in winter as most countries do not have the capacity to do this. Nine (9) principal investigators (research project leaders) led seven research projects on a 26 day research voyage to advance research on the southern Oceans.

*Palaeosciences:*

* The criteria for the research call were finalised between the DST and the NRF. In August 2015 the National Research Foundation released a call for research grants in the African Origins Platform.
* The Centre of Excellence in the Palaeosciences made an announcement of a new hominin species called *Homo naledi*. The announcement of a new species in the Cradle of Humankind has created enormous awareness of the field and the specific research, and has encouraged dialogue about the field from different spectrums of society. This research has contributed significantly to Goal one of the South African Strategy for the Palaeosciences; “transform the minds of South Africans”.
* The DST initiated discussions with the Nelson Mandela Metropolitan University (NMMU) for collaboration on HCD and development of a new palaeosciences research centre. Further discussions were held at official level with the University of Venda on resuscitating archaeological research and training at the institution.

**Basic Sciences and Infrastructure**

*Humanities and Social Science (HSS) Seminars:*

The HSRC convened 24 humanities and social science (HSS) seminars for Programme 4 during the reporting period. The HSS seminars are designed to bring together key players and stakeholders into a collective reflection and mutual learning on a particular topic which is pertinent to the HSS, and to formulate recommendations for further research action and, if relevant, for policy processes. The HSS seminars provide a platform for the presentation and critical discussion of recent advances in scholarship, including methodology, disciplinary specialisation, and interdisciplinary collaboration; and create opportunities for postgraduate students and government officials to engage with academic staff and visiting scholars. The HSS seminars are open to postgraduate students, science council researchers, academics and government officials.

As a rigorous forum for scholarly discussion, the objectives of the HSS seminars were to:

* Disseminate scientific research findings and transmit a body of new knowledge (through an iterative process of critical dialogue and collegial critique) to the HSS research community;
* Provide an arena for high profile researchers to present and discuss new and ongoing research, identify research gaps, and suggest new research agendas in the HSS with a view to forging closer links between the research communities in these fields;
* Reinforce the visibility of HSS research to the higher education and science council sector;
* Enhance wider public understanding of the HSS, including the value and status of both individual and team-based research;
* Allow for genuinely interdisciplinary discussion that will strengthen the breadth and depth of each participant’s individual work;
* Strategically promote, develop, and coordinate collaborative research within and between HEIs and Science Councils; and
* To provide postgraduate students with exposure to a variety of research projects and activities in order to enrich their academic experience and to offer postgraduate students already engaged in their own research an opportunity to present their findings and test their scholarly insights.

**Astronomy**

During the reporting period, the National Multi-Wavelength Astronomy (MWLA) Strategy has been presented to EXCO and Minister and has been approved on both fronts. However, the financial implications need to be assessed prior to taking this Strategy to Cabinet. The Cabinet Memorandum will be tabled in Cabinet during the first quarter of 2016. The DST has been in consultation with the NRF who have been driving the drafting of the Implementation Plan for the MWLA Strategy. The Plan was presented to the DST during this reporting period, but further consultations and refinements are still necessary.

The three Regulations (Frequency Spectrum, EMI, and Procedural matters) have been prepared and translated into Afrikaans with the intention of Gazetting in the next quarter. A discussion has been initiated with ICASA on the need for a joint MoU to co-manage the frequency spectrum requirements for the SKA.

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

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| --- |
| **Strategic objective 1: To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities** |
| **Annual target: 14 880 postgraduate students (5 311 B.Tech and honours, 5 685 master's, and 3 136 PhD students) and 748 postdoctoral fellows awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2016** |
| **Performance indicator: Total number of postgraduate students (BTech and honours, master’s and PhD students) and postdoctoral fellows awarded bursaries as reflected in the NRF project reports** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 7 440 postgraduate students and postdoctoral fellows supported through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 30 June 2015. | A total of 7117 postgraduates were awarded bursaries - Honours (1 867); Masters (2 780); PhD (2 021) and Post-doc (449) | 11 160 postgraduate students and postdoctoral fellows supported through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 30 September 2015.   | 10 692 postgraduate students ( 3177 honours, 3645 masters , 2606 doctoral and 637 postdoctoral fellows. | **Not Achieved** | For this indicator, the quarterly performance cannot be predicted or managed within closer margins than this, because it depends on the pool of applicants, which cannot be predicted perfectly. | NRF will do additional allocations. |
| **Annual target: 900 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2016** |
| **Performance indicator: Total number of graduates and students placed in DST-funded work preparation programmes in SETI institutions** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 630 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 30 June 2015. | 727 graduates and students placed in SETI institutions. | 8720 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 30 September 2015. ***N:B The target was incorrectly captured in the APP as 8720. The correct target is 720; this means therefore the target was achieved.***  | 920 graduates and students placed in DST-funded work preparation programmes. | **Achieved** | Most positions in workplace preparation programmes were allocated at the beginning of the financial year.  |  |
| **Strategic objective 2: To ensure availability of and access to internationally-comparable research and innovation infrastructure in order to generate new knowledge and train new researches** |
| **Annual target: 60 research infrastructure grants awarded as per award letters by 31 March 2016 DST** |
| **Performance indicator: Number of research infrastructure grants awarded as per award letters** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | An addendum for implementation of NEP, NNEP and infrastructure requirements at the National Facilities has been signed between the DST and the NRF as a result and amount of R289.45 million (R179.447 for NEP and the NNEP and R110 million for National facilities) has been transferred to the NRF. Moreover a call for proposals opened on the 3 June until end August 2015. | Call for proposals on awarding of research infrastructure grants issued by 30 September 2015.  | Call for proposals on awarding of research infrastructure grants was issued on 3 June and closed on 3 August 2015. | **Achieved** | N/A | N/A  |
| **Annual target: 3 500 Mbps average bandwidth available per SANReN site by 31 March 2016** |
| **Performance indicator: Average amount of bandwidth per SANReN site per annum** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | Preparations are under way to achieve the annual target. | New sites and upgrade plan finalised by 30 September 2015. | New sites and upgrade plan finalised and approved. | **Achieved** | N/A | N/A  |
| **Strategic objective 3: To support and promote research that develops basic sciences through production of new knowledge and relevant training opportunities** |
| **Annual target: 4 539 researchers awarded research grants through NRF-managed programmes as reflected in the NRF project reports by 31 March 2016** |
| **Performance indicator: Total number of researchers awarded research grants through NRF-managed programmes as reflected in the NRF project reports** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 2 270 researchers awarded research grants through NRF-managed programmes as reflected in the NRF project reports by 30 June 2015. | 2 275 researchers awarded research grants. | 3 404 researchers awarded research grants through NRF-managed programmes as reflected in the NRF project reports by 30 September 2015.  | 3 509 researchers awarded research grants. | **Achieved** |  | N/A |
| **Annual target: 7 000 ISI-accredited research articles published by NRF-funded researchers as reflected in the NRF project reports by 31 March 2016** |
| **Performance indicator: Number of Institute for Scientific Information (ISI) accredited research articles published by NRF-funded researchers as reflected in the NRF project reports** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | Results will be reported in the fourth quarter. | No target. | Results will be reported in the fourth quarter. | **No target due** |  |  |
| **Strategic objective 4: To strategically develop priority science areas in which South Africa enjoys a competitive advantage, by promoting internationally competitive research and training activities and outputs** |
| **Annual target: Four new MeerKAT antennae installed as per SKA specifications 31 March 2015** |
| **Performance indicator: MeerKAT antennae installed as per SKA specifications** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Five MeerKAT antennae installed by 30 June 2015. | Two antennas are in the dish shed being prepared for assembly. The team is still busy with qualification on the previous four antennas and veryifing pointing and surface accuracies on system level (holography). Significant strides made to start full scale production | Seven MeerKAT antennae installed by 30 September 2015.  | Antennas five and six installed.  | **Not Achived** | Due to delays by the Contractor with the qualification of the previous four antennas and verifying pointing and surface accuracies on system level, the installation of the antennas in this quarter was delayed. It would be imprudent to install more antennas until the qualification process has been completed. | The annual target has been revised down from 28 to 21 antennas installed because the qualification process will no longer allow the earlier target. |
| **Annual target: One** **Implementation Plan for the Antarctic and Marine Research Strategy approved by Exco by 30 September 2016** |
| **Performance indicator: Number of strategy documents approved by DST EXCO** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Stakeholder engagements on the elements of the implementation plan by 30 June 2015. | Stakeholder engagement with DEA on Marine and Antarctic Strategy was done. | No target. | A workshop was held with research stakeholders where working groups were mandated to work on specific themes of the final strategy and implementation plan. | **No target due** |  |  |
| **Annual target: One Basic Sciences Development and Support Framework approved by Exco by 31 March 2016** |
| **Performance indicator: Number of strategy documents approved by DST EXCO** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Stakeholder consultations on draft Basic Sciences Development and Support Framework completed by June 2015. | A critical consultation took place between the NRF and DST which was necessary to prepare for the broader stakeholder consultation. | No target. | No target. | **No target due**  |  |  |
| **Annual target: Regulations on the protection of IKS approved by the Minister for widespread public consultation by 31 March 2016** |
| **Performance indicator: Number of strategy documents approved by DST EXCO** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken** **Verification sources** |
| Public consultation on the Bill in two provinces by 30 June 2015. |  During the reporting period public awareness and consultation sessions on the Bill were held in the nine provinces.  | Public consultation on the Bill in three provinces by 30 September 2015.  | Public consultations for the nine Provinces were done in the first quarter.  | **Achieved** | N/A | N/A |
| **Annual target: One Implementation** **plan for Multiwavelength Astronomy Strategy approved by Exco by 31 March 2016** |
| **Performance indicator: Number of strategy documents approved by DST EXCO** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| First draft of the Multiwavelength Astronomy Strategy implementation plan developed by 31 May 2015. | Guideline documents for the drafting of the Multi-wavelength Astronomy strategy implementation plan developed. | Consultation with the Astronomy community with the NRF on the implementation plan by 30 September 2015.  | Consultations with the Astronomy community have been done and NRF is busy finalising the implementation plan.  | **Achieved** | Consultation with the Astronomy community is an ongoing engagement as it is not event but an iterative process that has enabled the development and continuous refinement of a draft implementation plan.  | Fast tracking the finalisation of the draft implementation plan. |
| **Annual target: Regulations on frequency spectrum gazetted by 31 December 2015 Regulations on EMI gazetted by 31 December 2015 Regulations on procedural matters gazetted by 31 December 2015** |
| **Performance indicator : Number of regulations on AAAs gazetted** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target. | The regulations have been drafted and we are busy translating them into Afrikaans versions. | Notice by the Minister to gazette final regulations on frequency spectrum by 30 September 2015 Notice by the Minister to gazette final regulations on EMI by 30 September 2015 Notice by the Minister to gazette final regulations on procedural matters by 30 September 2015. | 1. Notice by the Minister to gazette regulations on frequency spectrum has been approved by the Minister on the 28 September 2015 and we now waiting for concurrence from ICASA before the regulations can be gazetted ;2. Notice by the Minister to gazette regulations on EMI has been approved by the Minister on 28 September 2015 and waiting concurrence from ICASA.3. Notice by the Minister to gazette regulations on procedural matters has been approved by the Minister on 28 September 2015 and waiting for concurrence from ICASA.4. Notice by the Minister to gazatte regulations on Financial compensation has been approved by the Minister on 28 September 2015 and we are waiting for concurrence from ICASA. | **Achieved** | N/A | N/A |
| **Annual target: Research capacity of existing networks profiled and areas that need institutional support identified by 31 March 2016** |
| **Performance indicator : A functional climate change research network in place** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target | A desk-top study has recently been completed to profile various climate change related research network. The study was done as part of profiling research capacity of existing networks with a view to close identified gaps and areas that need institutional support by 31 March 2015. | No target. | No target. | **No target due** | N/A | N/A |
| **Annual target: One plan for compiling the first biennial report on the state of climate change in South Africa for Cabinet approval by 31 March 2016** |
| **Performance indicator : Number of biennial reports on the state of climate change in South Africa approved by Cabinet** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| No target | A concept document on the proposed approach to compiling biennial climate change science and technology has been finalised and is awaiting approval by DST EXCO before it is shared with the Outcome 10 Coordinating Department for endorsement.  | No target |  The indicator will be reported on in the fourth quarter. | **No target due** |  | N/A |
| **Strategic objective 5: To promote public engagement on science, technology and innovation** |
| **Annual target: Approximately 979 000 participants (588 000 learners and 391 000 members of the public) in science awareness and engagement programmes as reflected in project reports of the NRF and other service providers by 31 March 2016** |
| **Performance indicator: Total number of participants in science awareness and engagement programmes as reflected in the NRF project and those of other service providers** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Grant funding awarded to organisations implementing the initiatives by 30 June 2015. | Grants were awarded to 57 organisations towards the host of NSW activities;grants were awarded to seven festival organisers to host 12 festivals country-wide | National Science Week held by 30 September 2015.  | National Science Week took place from 1 to 8 August 2015. | **Achieved** | N/A | N/A |

## 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 subprogrammes:

* **Technology Localisation Beneficiation and Advanced Manufacturing** advances 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 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**

**Sector Innovation and Green Economy**

**Information and Communication Technology Unit (ICT)**

The implementation of the DST and EU General Budget Support (GBS) ICT Innovation Programme is underway and five projects are being implemented through the CSIR. With regard to the m-Health Integration Platform, the aim is to address the issue of fragmentation in health information systems by integrating existing m-health and e-health systems and data through a standards-based platform that will provide communication and information exchange services through various channels. The focus is on providing mobile health services for foetal, maternal and child healthcare deployed nationally, to increase the impact and scale of the intervention. For the Tshwane District implementation pilot, the CSIR has partnered with the University of Pretoria’s Department of Family Medicine and the Stanza Bopape clinic for the implementation of the technologies.

The CSIR Meraka Institute has also recorded an approved international patent for the *“system and method of operating a computing device to perform memoization including transforming input/output parameters to reduce redundancies and efficiently cache data”.*

**Environmental Services and Technologies Unit**

**Profiling the Water RDI Roadmap through the DST/WRC partnership**

The Environmental Services and Technologies Directorate works closely with the Water Research Commission (WRC) in implementing the Water Research Development and Innovation (RDI) Roadmap. This quarter has seen some important strides forward with this partnership. The WRC has built the Water RDI roadmap into their Corporate Plan for presentation and approval by the Department of Water and Sanitation. The DST also co-funded the WRC organised the South African Technology Summit on 18 September 2015. This event and the broader WRC Symposium that the event formed part of created a prominent and global platform for DST to profile their implementation plans for the Water RDI Roadmap, share progress being made with the Water Technology Demonstration Programme (WADER) and reflect with strategic role players on issues relating to technology upscaling, innovation systems for water, public-private partnerships and a range of other issues.

The Symposium also created a platform for the signature of a memorandum of understanding between WADER and the Water Environment Research Foundation (WERF) in the United States. This partnership will unlock exciting opportunities in terms of unlocking necessary decision support tools for incoming technology demonstration.

**MoU between WADER and WERF**

At the recently held WRC Symposium, the WRC on behalf of WADER signed an MoU with the Water Environment Research Foundation (WERF) of the USA to collaborate on the Leaders Innovation Forum for Technology (LIFT) programme. LIFT like WADER is an initiative designed to help bring water technology to the field quickly and efficiently.

**Launch of the Stream Assessment Scoring System ( MiniSASS App)**

On 18 September 2015 the MiniSASS app was launched at the South African Technology Summit. The **MiniSASS is a simple tool which can be used by children and adults alike to monitor the health of a river. You collect a sample of macroinvertebrates (small animals) from the water, and depending on which groups are found, you have a measure of the general river health and water quality in that river.**

**The tool guides citizens on how to identify the macroinvertebrates and is also linked to an online google earth platform that allows data to be uploaded and made publicly available. This citizen science tool simultaneously supports river health monitoring, increases education and awareness of river health and processes amongst users and essentially places the tools of science in the hands of citizens to take ownership of the river systems near to where they live and work.**

This MiniSASS mobile app launch showcased an exciting partnership initiative between WRC, and the Department of Science and Technology (DST) which is pushing citizen science for water to new levels by exploring the potential of mobile technologies to enhance tools like Mini-SASS. This is part of a wider ICT initiative at DST that is exploring how mobile technology can support different aspects of service delivery whilst simultaneously stimulating ICT capacity in young South Africans, through the mLab Academy. The MiniSASS app, developed by mLab, is available in all app stores for download on android devices.

**Imvelisi: Creating Enviropreneurs Programme**

Imvelisi is a partnership initiative between GreenMatter and the South African Young Water Professionals Network (YWP-ZA), funded by the DST, with the aim of supporting the business development of young water and biodiversity focused innovators and their ideas. In so doing the intention is to increase the pool of enviropreneurs who can be taken up by mainstream incubators and business funding streams.

The core objective of this pilot programme was: to develop, implement and learn from a week long national entrepreneurship bootcamp for 20 participants held in Gauteng. Whilst the main output or product of this process was the actual bootcamp/ training programme, the real intention was to design a pilot that would deepen insight into where in the innovation cycle there are gaps that need to be addressed in terms of streamlining systems to enable young enviropreneurs to better access entrepreneurship resources in the system.

Through a partnership with Green Talent, which focuses on sustainable careers for alternative futures and the Awethu Project, which is a leader in entrepreneurship and business development, the Entrepreneurial Bootcamp was developed and delivered from 13 to 17 July 2015.

The Bootcamp focused on providing participants with:

* Information and practice regarding the early ideation stages of business development;
* An appreciation of entrepreneurship as a possible career path;
* An opportunity to explore the alignment of their ideas to national priorities;
* Learning how to assess market potential;
* An understanding of the funding landscape: and
* Developing pitching and presentation skills.

**Plastics SA**

The Waste RDI PMU has recently received a commitment from Plastics SA to fund two MSc scholarships to develop technological solutions for plastic waste streams. The PMU will be issuing a directed call for proposals in this quarter, and will be funding an additional PhD and MSc Scholarship.

**Strategic Partnerships with the DEA Natural Resources Management Unit**

Natural Resources Management is an area of particular strategic importance for South Africa in its transition to a green economy given the expectation that the natural resources management sector is one of the key drivers for employment and green economic transformation.

In light of this strategic imperative, the DST and Department of Environmental Affairs Natural Resources Management (NRM) Chief Directorate have been developing a partnership over the last year. This partnership focuses on the evidence, research and innovation needs associated with Natural Resources Management in South Africa. The partnership has been cemented in Quarter 2 of 2015/16 through a high level meeting between the DDG: SIP and CD: SI&GE with the DEA NRM team and a follow up strategic planning session on 23 September 2015.

The DST/DEA NRM partnership focuses on three main areas:

* Supporting DEA NRM in the development of research and evidence plans for catchment management;
* Mapping out and synergising research, development and innovation investments in the NRM space to avoid duplication and strengthen the lessons derived from investments; and
* Collaborating to leverage and unlock new investments and partnerships into the NRM sector.

**WSSF 2015**

Together with one of the CTCN strategic partners, BNVGL, organised a panel discussion on the energy crisis and how partnerships can overcome it.

**NDE-RSA information sessions on CTCN**

Three information sessions were conducted on the CTCN in Pretoria, Cape Town and Durban. Four country requests were received and those that make it through the evaluation will be presented to the Advisory Committee and IGCCC on 8 October 2015, prior to submission to the CTCN.

**South Africa Action2020 Climate Dialogue for the Low Carbon Technology Partnerships initiative (LCTPi)**

This initiative was organised by the National Business Initiative (NBI) and the World Business Council for Sustainable Business (WBCSD). The DG and the NDE were represented at the meeting.

**Innovation for Inclusive Development**

The DST's relationship with lead service delivery departments continues to strengthen. In the second quarter the DST made input in the drafting of the National Sanitation Policy wherein innovative sanitation technologies and decision-support for improved sanitation service delivery are included. The DST also participated in the ICTs in Basic Education Operation Phakisa process and some of its recommendations (eg. the Theory of Change session) were integrated as part of the planning and implementation of the ICTs in Basic Education Operation Phakisa. The DST also presented findings of the benchmark study on Innovative Building Technologies to the Department of Economic Development.

The DST’s cooperation with the Department of Co-operative Governance and Traditional Affairs (CogTA) continues to improve. Collectively the two departments are working to introduce the Innovation for Local Economic Development (ILED) agenda by crafting the science, technology and innovation themes into the National Local Economic Development Framework, which will inform the practice of LED in South Africa over the next five years. Strengthening of departmental ties in this area of work signifies a shift towards a new LED agenda in the country, i.e. fostering innovation-led LED that is territorial in nature (as opposed to the historical approach of government-dependent small and isolated projects that were not linked to the local economy and were not self-sustainable). This is the start of a shared strategic outlook and programming over the Medium-Term Strategic Framework period, which will gradually bring on board other LED actors in the country.

On 27 September 2015, the Minister of Science and Technology hosted a public participation event at a DST-funded production and agro-processing community enterprise in Hi-Hanyile, Limpopo that successfully demonstrated signs of community ownership, which is a key element that the Innovation for Inclusive Development Directorate has been introducing over the past two years in its interventions following years of this being neglected. The Minister re-enforced the Department's commitment and aim to ensure that the enterprise is well capacitated and supported (by the DST and other organisations), geared for long-term sustainability prior to the exit of the DST. Given the proximity of the site to some knowledge institutions and other critical resources, the Directorate is exploring the attractiveness of establishing an innovation-led production system, with Hi-Hanyile as one of the hubs, in line with the ILED agenda.

The DST also engaged its entity, the Human Sciences Research Council (HSRC) in implementing Innovation for Inclusive Development sessions in a dedicated "Innovation for Inclusive Development week". The DST hosted an Innovation for Inclusive Development panel session at the recent World Social Sciences Forum. Local and international representatives from Higher Education and Research Institutions were part of the attendees of this session that enabled a collective discussion and reflection on how science, technology and innovation impacts on the quality of life. This session also highlighted policy decisions made by South African in ensuring that science, technology and innovation support and advance inclusive development.

**Technology Localisation, Beneficiation and Advanced Manufacturing**

**Mining and Mineral Processing Unit**

The DST has invested, via the Advanced Metals Initiative (AMI) in a number of areas, one being the Light Metals Network. In signing the new contract, the DST indicated that the activities under the Light Metals Network required refocusing, with a possible scaling down of activities, due to less than expected market interest and uptake of the work.

 During the Light Metal Technology conference (LMT 2015), the following positive developments can be reported: South Africa is now firmly a part of the Global Light Metals Alliance through the CSIR and currently still holds the Chair. A key positive development from the conference is the potential for a multinational project on Magnesium alloys with a South African Company that wants to produce magnesium wheel rims. New members to the Global Light Metals Alliance (GLA) are Korea, through Korea Institute of Materials Science (KIMS) and Sweden through Jönköping University. The conference has increased SA's visibility in the international Light metals field. This is evident from the correspondence received by the CSIR being invited to review projects for Jönköping University, Sweden. The expression of thanks through correspondence for the opportunity given to them has also been received from some of the SA students that attended, courtesy of DST conference co-funding.

**Light metals sector looks at recent technological developments**

Students, researchers and industry players gathered at this year’s Light Metals Technology (LMT) Conference held in Port Elizabeth (26-29 July 2015). The LMT is a biennial conference that focuses on recent advances in the science and technologies associated with aluminium, magnesium and titanium alloys. The LMT series was initiated, and has been organised in rotation, by the members of the international global light metals alliance, which includes;- HZG Helmholtz­Zentrum Geesthacht, MagIC, Germany; LKR Austrian institute of Technology, Austria; MPI Metal Processing Institute, Worcester Polytechnic Institute, USA; CSIR Materials Science and Manufacturing(Light Metals), South Africa; Centre of Advanced Materials Processing and Manufacturing (AMPAM), Based at the University of Queensland, Australia; NERC­LAF, Shanghai Jiaotong University, China; BCAST Brunel University, UK, CanmetMATERIALS, and Canada.

The conference was tailored to provide a forum for students, researchers and industry players to present progress over recent years on the development and application of technologies for the light metals industrial sector. It also presents an opportunity for academic researchers and industry to discuss cutting edge developments and facilitate new collaborations.

The LMT series is organised by the members of the global light metals alliance of top light metal research centres. LMT2015 was organised and hosted by CSIR MSM Light Metals Competency Area. About 110 delegates attended this unique information sharing and networking opportunity.

The Deputy Director-General at the DST, Mr Imraan Patel delivered the opening address where he contextualised the conference within the ambits of the DST funded Advanced Metals Initiative and National System of Innovation. The DST supported the attendance of South African students to enable them to engage with the global light metals development community in order to facilitate South Africa’s ambitions within the light metals arena.

 “This was a great opportunity to encourage the role-players to work harder as we move forward and for the alliance to work as a team and generate more strategic collaborations”, remarked Dr Robert Tshikhudo, Manager of the CSIR Light Metals Competency Area who also gave a welcoming address at the conference. Over 15 countries utilised this opportunity to gain insight into how to endeavour towards increasing the value-addition of advanced Light metals globally in the future. The Director of Mining and Minerals Processing at the DST recommended that new members should join the alliance in particular research organisations from the BRICS economies.

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

|  |
| --- |
| **Strategic objective 1: Through knowledge, evidence and learning, inform and influence how science and technology can be used to achieve inclusive development** |
|  **Annual target : Four knowledge products on innovation for inclusive development published by 31 March 2016** |
| **Performance indicator: Number of knowledge products on innovation for inclusive development published SO1** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Through consultation and review, identify the topics and format of the four new knowledge products by 30 June 2015. | The subject matter of two Innovations for Local Economic Development (ILED) policy briefs was discussed with the Department of Cooperative Governance (COGTA).  | 1st draft of the four identified policy briefs on innovation for inclusive development developed by 30 September 2015. | Four draft policy briefs developed by 30 September 2015. Two on Innovation for Local Economic Development (ILED) developed for perusal by various DST partners, one on innovation for sanitation service delivery and one on the use of hydropower as a source of electricity in rural areas. | **Achieved** | N/A | N/A |
| **Annual target:** - **5 decision-support interventions maintained and improved by 31 March 2016** |
| **Performance indicator:**  **Number of decision-support interventions introduced and maintained SO1**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Monitor the implementation of work plans for the five existing decision-support systems by the project teams by 30 June 2015. | Five implementation of work-plans were monitored as follows:1. Implementation of Phase three of the Rural Innovation Assessment Tool (RIAT) project is underway. In the first quarter the team focused on laying the foundation, i.e. orientation of the Human Sciences Research Council (HSRC) implementation team around the phase three objectives, ensuring alignment with the Innovation for Local Economic Development (ILED )framework and starting the process of putting together the steering committee;2. Sanitation Technology Assessment and Evaluation Tool: A Reference Group meeting held in the quarter and the tool is refined with the input;3. Total Cost of Ownership model: presented to the Eastern Cape Department of Education and a refined model developed;4. Spatial Temporal Evidence Planning Tool for South Africa: A quarterly meeting convened in partnership with the South African Planners Institute;5. Corrective Action Request Report System: Meeting held with the Council for Scientific and Industrial Research. The finding was that the tools have potential for wider application. | Monitor the implementation of work plans for the five existing decision-support systems by the project teams by 30 September 2015. |  Monitor the five existing decision support tools: Rural Innovation Assessment Tool (RIAT); Sanitation Technology Assessment and Evaluation Tool;Total Cost of Ownership; Corrective Action Request Report System; and Spatial Temporal Evidence Planning for South Africa Tool. | **Achieved** | N/A | N/A |
| **Strategic objective 2: To identify, grow and sustain niche high-potential STI capabilities that improve the competitiveness of existing industries with growth potential in aerospace, advanced manufacturing, chemicals, advanced metals, mining, ICTs and sector innovation funds;** **facilitate the development of R&D-led new targeted industries** |
| **Annual target: 50 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 2016** |
| **Performance indicator:**  **Number of high level research graduates ( master’s and doctoral students) fully funded or co-funded in designated niche areas (that support the greening of society and the economy and sustainable development ) SO2** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 35 master’s and doctoral students fully funded or co-funded in designated niche global change areas supporting the green economy and sustainable development by 30 June 2015. | 40 master’s and PhD students funded by 30 June 2015. There are currently 14 masters and PhDs enrolled on the Water Research Commission (WRC) HCD Programme. The Sector Innovation Fund (SIF) and CSIR Industry Innovation Partnerships (IIP) programmes funded 26 students | No new master’s or doctoral students funded or co-funded. | No target due. | **No target due** |  |  |
| **Annual target: Four knowledge and innovation products (patents, prototypes, technology demonstrators and technology transfer packages) added to the IP portfolio through fully funded or co-funded research by 31 March 2016** |
| **Performance indicator:**  **Number of knowledge and innovation DST products (patents, prototypes, technology demonstrators or technology transfer packages) added to the IP portfolio through fully funded or co-funded research initiatives that Support the greening of societySO2**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Begin negotiations with implementation agencies on proposed knowledge and innovation products to be added to IP portfolio by 30 June 2015. | Negotiations with implementing agencies finalised. The MiniSASS mobile application is under development and will be launched in the second quarter.Water related technologies are under development and will be reported on from quarter three. | Finalise negotiations with implementation agencies on proposed knowledge and innovation products to be added to IP portfolio by 30 September 2015 | The MiniSASS mobile application was successfully launched in September 2015 at the Water Research Council (WRC) Symposium.Water related technologies manged by WADER are still under development. There are possible additional IP that is under development with the biorefinery investment by IIP and on smart infrastructure on the ICT Roadmap.  | **Not Achieved** |  IP products require time to mature, and no new IP products were recorded. There was no WADER manager from April until September and therefore limited progress due to a lack of dedicated leadership for WADER at the WRC.  |  Managers of projects from the TSPs and TLIU will be encouraged to closely identify and track IP products under development. Participated in the selection of the new WADER manager through 2 separate rounds of selection. This person starts on the 5 October 2015. |
| **Strategic objective 3:**  **To strengthen provincial and rural innovation and production systems through analysis and catalytic interventions** |
| **Annual target: 273 master's and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals and ICTs) by 31 March 2016** |
| **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 and ICTs) SO3** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 210 master’s and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals and ICTs) by 30 June 2015 | 285 master's and doctoral students funded or co-funded by 30 June 2015.  | No new master’s or doctoral students funded or co-funded | 320 students continued to be funded through the following initiatives: **ICT 43:** 43 CSIR MDS (20): 14 (MSc) + 6 (PhD)CSIR Meraka (23): 10 (MSc) + 13 (PhD) **SIF and IIP students 101:****Mining and Minerals 79**:FMDN - MSc 9, PhD 8LMDN - MSc 2, PhD 1NMDN - MSc 11, PhD 10, PMDN - MSc 3, PhD 6TiCoC - MSc 14, PhD 8BGRIMM - MSc 3Geosciens-RIP - MSc 4**Chemicals 24:** FEI - 20 (8 PhD, 12 Masters)POPs - 4 (1 PhD, 3 Masters) **AMT 72:**AM Scholarship Fund:M's-13, D's-7RAS: M's - 9, D's - 2Titanium REPC:M's 9, D's - 2CPAM: M's -14 D's - 10CFCP: M's - 2, D's - 3Aeroswift: M's- 1 | **Achieved** |  Student co-funding remains difficult to predict due the fact that full and partial (fully funded and co-funded) bursaries are given. |  Monitoring will remain tight |
| **Annual target: 160 interns fully funded or co-funded in R&D related to design, manufacturing and product development by 31 March 2016** |
| **Performance indicator:**  **Number of interns fully funded or co-funded in R&D of design, manufacturing and product development SO3**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 100 interns fully funded or co-funded in designated niche areas related to design, manufacturing and product development by 30 June 2015. | 281 interns funded by 30 June 2015.  | No target for Quarter 2 |  260 interns fully funded or co-funded by 30 September 2015SIF and IIP: 35TIA: 91TLIU: 100Mintek: 34 | **Achieved** | Reported as milestone in terms of progress to date. |  |
| **Annual target: Eight instruments funded in support of increased localisation, competitiveness and R&D-led industry development in aerospace, advanced manufacturing, chemicals, mining, advanced metals and ICTs by 31 March 2016** |
| **Performance indicator: Number of instruments funded in support of increased localisation, competitiveness and R&D led industry development SO3** |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Seven instruments funded in support of increased localisation, competitiveness and R&D-led industry development in aerospace, advanced manufacturing, chemicals, mining, advanced metals and ICTs by 30 June 2015. | Seven instruments funded by 30 June 2015. 1. Technology Stations Programme (TSP)2. Sector wide technology assistance packages (SWTAPs)3. Firm level Technology Assistance Packages (FTAPs)4. Science, Engineering and Technology Industry Internship Programme (SETIIP)5. Sector Innovation Fund6. Industry Innovation Partnership7. Incubators | Continue to fund seven instruments in support of increased localisation, competitiveness and R&D led industry development in aerospace, advanced manufacturing, chemicals, mining, advanced metals and ICTs by 30 September 2015. | Continued to fund seven instruments by 30 September 2015. 1. Technology Stations Programme (TSP)2. Sector wide technology assistance packages (SWTAPs)3. Firm level Technology Assistance Packages (FTAPs)4. Science, Engineering and Technology Industry Internship Programme (SETIIP)5. Sector Innovation Fund6. Industry Innovation Partnership.7. Incubators. | **Achieved** |  Outstanding Contracting will be finalised in October. It is proposed that a new funding mechanism 'Dedicated HCD funding' for POPs, AMT-bursary fund, etc. is introduced in the next Financial Year (FY). It will be reflected as a management indicator in the current FY. |  Expediting contracting.  |
| **Annual target: 25 knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the IP portfolio through fully funded or co-funded research initiatives by 31 March 2016** |
| **Performance indicator** **Number of knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the IP portfolio through fully funded or co-funded research initiatives SO3**  |
| **1st Quarter target as per APP** | **1st Quarter actual output** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Signed contracts with implementing agencies monitored and timely corrective action taken by 30 June 2015. | Eight signed contracts with implementing agencies monitored by 30 June 2015.  | Signed contracts with implementing agencies monitored and timely corrective action taken by 30 September 2015 | Signed contracts on 14 knowledge and innovation products added to the IP portfolio through fully funded or co-funded research initiatives  | **Achieved** |  |  |
| **Strategic objective 4:**  **To enhance understanding and analysis that support improvements in the functioning and performance of the NSI**  |
| **Annual target: Two innovation-support interventions funded or co-funded that strengthen provincial or rural innovation systems by 31 March 2016** |
| **Performance indicator:**  **Number of innovation-support interventions funded or co-funded that strengthen provincial or rural innovation systems SO4** |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Through consultation identify the innovation-support interventions to be funded or co-funded by 30 June 2015. | Consultation ongoing to identify the innovation-support interventions to be funded. One innovation support intervention, the Propella Business Incubator, was launched in the Nelson Mandela Bay on 24 June 2015. | Project proposal and contracting finalised by 30 September 2015. | The Sustainable Livelihoods Directorate is currently funding two interventions that are aimed at supporting the development of rural innovation systems. The first one is analysis of the state of science, technology and innovation in distressed municipalities with the aim to understanding the local systems of production and future potential for an innovation drive in those local systems. The second one is an intervention intended to stimulate local production in the Nciba circuit using innovation, whilst piloting a model that has potential to contribute to the agri-parks initiative. | **Achieved** |  |  |
| **Strategic objective 5:**  **To introduce and manage interventions and incentive programmes that increase the level of private sector investment in scientific or technological R&D**  |
| **Annual target: 2014/15 report on publicly funded research, science and innovation produced and disseminated**  |
| **Performance indicator:**  **Report on 2014/15 Publicly Funded research, science and innovation produced and disseminated SO5**  |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Data collection for 2014/15 report on publicly funded research, science and innovation commenced by 30 June 2015. | The data for 2014/15 report has commenced and was completed ahead of target timelines. The data have been verified and validated by the relevant departments. | Verification and validation of data with departments completed by 30 September 2015. | Verification and validation of data was completed.  The 2014/15 report on publicly funded STAs was produced and approved by EXCO on 18 September 2015. | **Achieved** | Target achieved before the set timelines. | EXCO and MMM were briefed about results of the survey. |
| **Annual target: Five 2014/15 report on performance of R&D tax incentive produced by 31 March 2016** |
| **Performance indicator:**  **Report on Performance of R&D Tax incentive produced by 31 March 2016 SO5** |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Data for 2014/15 report on performance of R&D tax incentive prepared by 30 June 2015. | Data on the performance of the R&D Tax Incentive has been collated. | Draft 2014/15 report on performance of R&D tax incentive presented to Exco by 30 September 2015. |  Draft 2014/15 report on performance of R&D tax incentive developed. Presentation to Exco outstanding. | **Not Achieved** | Data validation on progress reports received from companies took longer than anticipated because of using MS Access tool that proved to be challenging. | Database is now created in Excel. |
| **Annual target: 2013/14 national survey on research and experimental development (R&D survey) produced by 31 March 2016** |
| **Performance indicator:**  **Report on 2013/14 National survey on research and experimental development R&D survey Produced by 31 March 2016 SO5 (DST)** |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| 2013/14 R&D survey fieldwork finalised by 30 June 2015. | Fieldwork for the 2013/14 R&D survey was finalised and currently analysing survey data. | Report on the 2013/14 R&D survey drafted and presented to Exco by 30 September 2015. |  The 2013/14 R&D survey report has been produced. Presentation to EXCO outstanding. | **Not Achieved** | EXCO meeting was postponed. DST initiated an additional validation for the final draft report . |  The R&D survey report will be presented to EXCO in October 2015. |
| **Annual target:** **Report on Survey of Intellectual Property and Technology Transfer of Publicly Funded Research produced by 31 March 2016** |
| **Performance indicator:**  **Report on Survey of Intellectual Property and Technology Transfer of Publicly Funded Research produced by 31 March 2016 SO5** |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken** **Verification sources** |
| Data collection commences by 30 June 2015. | Data collection for the Intellectual Property and Technology Transfer survey commenced and fieldwork is underway. | Complete validation of data by 30 September 2015. |  Data validation for the Intellectual Property and Technology Transfer survey is underway and the preliminary baseline report has been produced. | **Not Achieved** | Timelines for data collection was extended in Quarter1; More time has been allowed in Quarter 2 to validate the data. |  More time has been allowed and further workshops are planned to finalise data validation. |
| **Annual target: Report on a new approach to innovation measurement produced by 31 March 2016** |
| **Performance indicator : Report on a new approach to innovation measurement produced by 31 March 2016 SO5** |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Project scoping document and plan approved by Exco by 30 June 2015 | One recommendation on the review of innovation measurements were approved by EXCO on the 6 July 2015. | Stakeholder consultation workshops completed by 30 September 2015. |  Stakeholder consultation outstanding. Project scoping document and TORs for review have being finalised for DG approval. | **Not Achieved** | Document preparation took longer than initially plannedProject scoping document and TORs for review of innovation measurements have been drafted for DG approval. | Project dates rescheduled. Stakeholder consultation workshop will commence in Quarter 4.  |
| **Annual target: Preapproval decisions provided within 90 days of date of receipt of application for the R&D tax incentive by 31 March 2016** |
| **Performance indicator : Turnaround time in providing preapproval decisions on applications for the R&D tax incentive improved SO5** |
| **1st Quarter target as per APP** | **1st Quarter actual output- validated** | **2nd Quarter target as per APP** | **2nd Quarter actual output** | **Status** | **Reason for variance**  | **Actions taken**  |
| Preapproval decisions provided within 90 days of date of receipt of application for the R&D tax incentive by 31 March 2015. | 305 applications are still to be finalised, of which 7% were received more than 24 months ago, 14% more than 18 months, 46% more than 12 months and 33% is more or less than 6 months. | Preapproval decisions provided within 90 days of date of receipt of application for the R&D tax incentive by 30 September 2015. |  276 applications (or 29% of total received to date) are still to be finalised, of which 43 (16%) were received before January 2014; 81 (29%) are 12 to 20 month in the system; 67(24%) are 6 to 11 months and 85 (31%) are six months or less. | **Not Achieved** | Progress has been made but is still slow. Significantly reducing the turnaround time depends on following variables: pace of experts in finalising evaluation reports, regularity of weekly adjudication meetings, and efficiency in processing recommendations for final decisions by Minister. | Guided external experts in prioritising older applications and in expediting good quality applications. |

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### 3. FINANCIAL PERSPECTIVE

* 1. **Voted funds:**
		1. **Budget for 2015/16 financial year**

The budget of the DST in the 2015/16 financial year is R7.482 billion – of which 93.3% is allocated as transfer payments and 6.67% to administrative activities of the Department. Figure 3 below analyses the distribution of allocations among the programmes.

Figure 3: DST budget split among the five Programmes



The bulk (94.4%) of the DST budget is allocated to three core Programmes of the Department (i.e. Programmes 2, 4 and 5). Programme 3 commands 1.6% of the budget. The division according to the major items is detailed in Table 6 below.

**TABLE 6: DST MAJOR ITEM CATEGORIES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **R' thousands** | **Compensation of Employees** | **Goods and Services**  | **Transfer Payments** | **Capital Assets** | **TOTAL**  |
|  |
| Programme 1 |  141 978  |  144 075  |  12 796  |  2 309  |  301 158  |
| Programme 2 |  41 428  |  20 913  |  946 081  |   |  1 008 422  |
| Programme 3 |  43 729  |  16 799  |  61 049  |   |  121 577  |
| Programme 4 |  30 054  |  14 635  |  4 202 118  |   |  4 246 807  |
| Programme 5 |  34 113  | 8 654 |  1 761 389  |   |  1 804 156  |
|  |  **291 302**  |  **205 076**  |  **6 983 433**  |  **2 309**  |  **7 482 120**  |

As depicted in Table 6 above and Figure 4 below, the cost driver of the DST are transfer payments. 93.3% of the DST budget is paid out as transfer payments to public institutions and other DST policy implementing partners. 36.3% of the transfer payments are paid out as parliamentary grants to six DST-managed public institutions – namely: the Academy of Science of South Africa (ASSAf), the Council for Scientific and Industrial Research (CSIR), the Human Sciences Research Council (HSRC), the National Research Foundation (NRF), the South African National Space Agency (SANSA) and the Technology Innovation Agency (TIA). The remaining 63.7% is payments for various projects which are managed through contracts.

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

**Expenditure**

* + 1. **Expenditure**

The DST projected to spend R5.757 billion or 76.9% of its total budget by the end of the second quarter of the 2015/16 financial year. R4.850 billion or 64.8% was spent for the period under review, resulting in a deviation of R906.6 million or 15.7% of the projected expenditure as shown in Figure 5 below.

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

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 DST spent R3.580 billion or 72.4% of the total budget up to the end of the second quarter of 2015/16 financial year, against the projected expenditure of R4.487 billion or 90.7% of its total budget excluding the parliamentary grants. The resultant variance amounts to R906.6 million or 20.2% of the projected expenditure. The details are depicted in Figure 6 below.

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

Figure 7 below illustrates the year-on-year comparison of the second quarter’s financial performance for 2014/15 and 2015/16 financial years. The deviation in the 2015/16 financial year is 9.3 percentage points lower than that of the 2014/15 financial year.

Figure 7: Year-on-year financial performance analysis (2014/15 and 2015/16)

Figure 8 below gives a further breakdown of the second quarter expenditure per Programme. According to the analysis below, programmes recorded deviations as follows: Administration 0.4%; Technology Innovation 13.5%; International Cooperation and Resources 1.6%; Research Development and Support 56.8% and Socio-Economic Innovation Partnerships 24.1%.

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 deviations from the projected expenditures range between 8.4% and 78.6%.

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

1. **Donor funding**

According to the table the expenditure below for the period amounts to R87, 393 million or 96% of the requested funding of R90, 831million.

**Table 7: Analysis of financial performance – Donor funding**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Donor**  |  **Project**  | **Programme** | **Funds Requested**  |  **Actual spending as at 30 September 2015** |  **Balance**  |
|  **Amount**  |  **%**  |
| **European Union** | General Budget Support  | Socio-Economic Partnerships | 63 194 |  61 200  | 97% | 1 994 |
| IST Africa | Socio-Economic Partnerships | 113 |  -  | 0% | 113 |
| Saccess | International Cooperation & Resources | 626 |  -  | 0% | 626 |
| CAAST-Net | International Cooperation & Resources | 252 |  -  | 0% | 252 |
| EASASTAP 2 | International Cooperation & Resources |  107  |  116  | 0% | -9 |
| Promoting Africa/EU Research Infrastructure | International Cooperation & Resources | 954 |  622  | 65% | 332 |
| Sector Budget Support  | Socio-Economic Partnerships | 24 000 |  23 870  | 99% | 130 |
| **USA** | IKS Standard Development and Capacity Building | International Cooperation & Resources | 1585 |  1 585  | 100% | 0 |
| **TOTAL** |  |   | **90 831** |  **87 393**  | **96%** |  **3 438**  |

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PHIL MJWARA

DIRECTOR-GENERAL

DATE: